3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS

S G E M 2 0 1 6



POLITICAL SCIENCES, LAW, FINANCE, ECONOMICS AND TOURISM
CONFERENCE PROCEEDINGS
VOLUME V

- - - - - - - - - - - - - - - - - - -

ECONOMICS AND TOURISM

- - - - - - - - - - - - - - - - - - -

24 – 30 August, 2016
Albena, Bulgaria

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

DISCLAIMER

This book contains abstracts and complete papers approved by the Conference Review Committee. Authors are responsible for the content and accuracy.

Opinions expressed may not necessarily reflect the position of the International Scientific Council of SGEM.

Information in the SGEM 2016 Conference Proceedings is subject to change without notice. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of the International Scientific Council of SGEM.

Copyright © SGEM2016
All Rights Reserved by the SGEM International Multidisciplinary Scientific Conference on SOCIAL SCIENCES and ARTS
Published by STEF92 Technology Ltd., 51 "Alexander Malinov" Blvd., 1712 Sofia, Bulgaria
Total print: 5000

ISBN 978-619-7105-76-6

ISSN 2367-5659

DOI: 10.5593/sgemsocial2016B25

SGEM INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
Secretariat Bureau

E-mails: **sgem@sgemsocial.org**
URL: **www.sgemsocial.org**

SCIENTIFIC CONFERENCE SGEM2016 INTERNATIONAL MULTIDISCIPLINARY ON SOCIAL SCIENCES AND ARTS

ORGANIZERS

- THE WORLD ACADEMY OF SCIENCES (TWAS)
- EUROPEAN ACADEMY OF SCIENCES, ARTS AND LETTERS
- ACADEMY OF SCIENCES OF THE CZECH REPUBLIC
- POLISH ACADEMY OF SCIENCES
- SLOVAK ACADEMY OF SCIENCES
- SCIENCE COUNCIL OF JAPAN
- RUSSIAN ACADEMY OF SCIENCES
- LATVIAN ACADEMY OF SCIENCES
- ACADEMY OF FINE ARTS ZAGREB, CROATIA
- CROATIAN ACADEMY OF SCIENCES AND ARTS
- ACADEMY OF FINE ARTS AND DESIGN IN BRATISLAVA
- RUSSIAN ACADEMY OF ARTS
- BULGARIAN CULTURAL INSTITUTE - VIENNA, AUSTRIA
- BULGARIAN ACADEMY OF SCIENCES
- SERBIAN ACADEMY OF SCIENCES AND ARTS
- NATIONAL ACADEMY OF SCIENCES OF UKRAINE
- NATIONAL ACADEMY OF SCIENCES OF ARMENIA
- ACADEMY OF SCIENCES OF MOLDOVA
- MONTENEGRIN ACADEMY OF SCIENCES AND ARTS
- GEORGIAN ACADEMY OF SCIENCES
- TURKISH ACADEMY OF SCIENCES

INTERNATIONAL SCIENTIFIC COMMITTEE
Political Sciences, Law, Finance, Economics & Tourism

- Prof. Mirela Mazilu, Romania
- Prof. A. Burçin Yereli, PhD, Turkey
- Prof. Cornelia Pop, Romania
- Prof. Ioan Dan Morar, Romania
- Prof. Julius Horvath, Hungary
- Prof. Maria Patakyova, Slovakia
- Prof. Marijan KOCBEK, PhD, Slovenia
- Prof. Eva Horvatova, Slovakia
- Prof. DSc Mitko Dimitrov, Bulgaria
- Prof. Ing. Robert Holman, CSc., Czech Republic
- Prof. DSc Tsvetana Kamenova, Bulgaria
- Prof. Ing. Uramová Mária, PhD., Slovakia
- Assoc. Prof.Ing. Svatopluk Kapounek, Ph.D., Czech Republic

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

CONFERENCE PROCEEDINGS CONTENTS

ECONOMICS AND TOURISM

1. UNDERSTANDING RESIDENTS' ATTITUDES TOWARD THE TOURISM DEVELOPMENT IN BRASOV COUNTY, Assoc Prof Ioana-Bianca Chitu, Assist Prof Diana Foris, Assoc Prof Codruta-Adina Baltescu, Prof Tiberiu Foris, Assoc Prof Ruxandra-Gabriela Albu, Transilvania University of Brasov, Romania.....3

2. A GENUINE IMPLEMENTATION OF THE EUROPEAN TOURISM INDICATORS SYSTEM FOR SUSTAINABLE DESTINATIONS WITHIN BRASOV COUNTY, Lecturer Laura Cismaru, Assoc. Prof. Gheorghita Dinca, Prof. Gabriel Bratucu, Transilvania University of Brasov, Romania.....11

3. AIR TRANSPORT DEMAND AND POPULATION: CASE STUDY FROM GERMANY, Ing. Lenka Hermankova, prof. Ing. Vlastimil Melichar, CSc., University of Pardubice, Czech Republic 19

4. AIRPORT COMPETITION IN THE CZECH REPUBLIC AND NEIGHBORING AREAS, Ing. Lenka Hermankova, prof. Ing. Vlastimil Melichar, CSc., University of Pardubice, Czech Republic.....27

5. ANALYSIS OF CONSUMPTION BEHAVIOUR OF DIFFERENT SEAFOOD PRODUCTS: AN EMPIRICAL ANALYSIS, PhD Gaetano Chinnici, Full Prof. Biagio Pecorino, PhD Valeria Allegra, Assistant Prof. Giacchino Pappalardo, Associate Prof. Mario D'Amico, University of Catania, Department of Agriculture Food and Environmental, Italy.....35

6. ANALYSIS OF CROP MODELLING EFFICIENCY IN VINE-GROWING FARMS, Assoc. Prof. Dr. Alina Georgeta Dobrei, Prof. Dr. Alin Dobrei, Assoc. Prof. Dr. Eleonora Nistor, Assoc. Prof. Dr. Dorin Camen, Assoc. Prof. Dr. Ion Chisalita, Banat University of Agronomical Sciences and Veterinary Medicine, Romania 43

7. ANALYTICAL VIEW OF USING PREDICTION MODELS IN CONDITIONS OF ACCOMMODATION FACILITIES IN SLOVAKIA, Ing. Beata Sofrankova, PhD.,
PhDr. Svetlana Matkova, PhD., University of Presov in Presov, Slovakia 51

8. ANTI-CRISIS MANAGEMENT OF THE SOCIO-ECONOMIC SYSTEM, Professor Parkhomchuck Marina, Professor Golovin Alexey, Assistant Professor Golovin Artem, South-West State University, Russia 59

9. ASPECTS OF CHANGE OF AN ECOLOGICAL SITUATION AND THEIR INTERRELATION WITH CONDITION OF LABOUR RESOURCES, Phd Andrey Sheviakin, South-West State University, Russia.....67

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION SOCIAL SCIENCES AND ARTS

10. ASPECTS OF SMOOTHING OF SPATIAL POLARIZATION IN REGION ECONOMY, Assoc. Prof. Dr. Alfiya Zinovyeva, Assoc. Prof. Dr. Svetlana Shabalina, Kazan (Volga Region) Federal University, Russia 73

11. ASPECTS REGARDING THE INTERLINKAGE BETWEEN ENVIRONMENT AND PRUDENTIAL RULES OF THE BANKING AND IT SYSTEMS, PhD. Candidate Adriana-Nicoleta Talpeanu, PhD. Candidate Florin-Catalin Enache, Bucharest University of Economic Studies, Romania.....81

12. BILATERAL TRADE AND CURRENCY UNIONS: EVIDENCE FROM THE EUROZONE, PhD Student Danusia Vamvu, Prof. Dumitru Miron, Prof. Paul-Gabriel Miclaus, PhD Student Anca Tamas, The Bucharest University of Economic Studies, Romania.....93

13. BIOENERGY PRODUCTION FOR SUSTAINABLE RURAL DEVELOPMENT: LATVIA'S CASE, Assoc. prof., Dr. oec. Ligita Melece, Dr. oec. Agnese Krievina, Institute of Agricultural Economy, Latvia.....101

14. BRASOV TOURISM DESTINATION PROFILING IN THE CONTEXT OF SUSTAINABLE TOURISM DEVELOPMENT, Assist Prof Diana Foris, Assoc Prof Ruxandra-Gabriela Albu, Assoc Prof Ioana-Bianca Chitu, Prof Tiberiu Foris, Assoc Prof Codruta-Adina Baltescu, Transilvania University of Brasov, Romania.....109

15. CITIES COMPETE FOR INVESTMENTS: WHOSE CONDITIONS ARE MORE ATTRACTIVE?, Assoc. Prof. Dr. Irina Glebova, Assoc. Prof. Dr. Ruslan Galiakhmetov, Assoc. Prof. Dr. Dmitriy Yurkov, Kazan (Volga Region) Federal University, Russia.....117

16. COMPARISON OF INFORMATIONAL RESOURCES' ASSESSMENT GATHERED FROM MANAGERS AND EMPLOYEES OF THE MAJOR POWER INDUSTRY COMPANY, Ing. Marie Stepankova, University of Economics Prague, Czech Republic.....125

17. COMPARISON OF RECRUITMENT AND SELECTION PROCESSES EMPLOYED IN MULTINATIONAL AND SLOVAK COMPANIES, PhDr. Elena Delgadova, PhD., Mgr. Monika Gullerova, PhD., Alexander Dubcek University in Trencin. Faculty of Social and Economic Relations, Slovakia 133

18. COMPREHENSIVE ASSESSMENT OF THE EFFECTIVENESS OF THE IMPORT SUBSTITUTION IMPLEMENTATION, Prof. Irina Ershova, Assistant Prof. Aleksei Ershov, Assistant Prof. Inna Litvinova, Southwest State University, Russia 141

19. CONCEPTUAL BASICS OF PUBLIC-PRIVATE PARTNERSHIP MANAGEMENT, Prof. Irina Ershova, Assistant Prof. Aleksandra Deviatilova, Assistant Prof. Irina Kozeva, Southwest State University, Russia.....149

SCIENTIFIC CONFERENCE 17/17 INTERNATIONAL MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS

20. CONCESSION PRACTICES OF PUBLIC ENTERPRISES IN KOSOVO, Milaim Berisha PhD C., College of International Management Globus, Kosovo 157

21. CONDITIONS FOR DEVELOPING AND PROMOTING AGROTOURISM IN ROMANIA, Assoc. Prof. Iasmina Iosim, Assoc. Prof. Gabriela Popescu, Banat University of Agronomical Sciences and Veterinary Medicine, Romania 163

22. CORPORATE CULTURE AND MARKET ORIENTATION IN HIGH-TECH COMPANIES, Doc. Ing. Vladimir Chalupsky, CSc., MBA, Brno University of Technology Faculty of Business and Management, Czech Republic 169

23. DEMOGRAPHIC POTENTIAL OF THE REGION: SPATIAL ANALYSIS, Assoc. Prof. Dr. Niyaz K. Gabdrakhmanov, Prof. Dr. Nailya G. Bagautdinova, Assoc. Prof. Dr. Oksana V. Polyakova, Kazan (Volga Region) Federal University, Russia....177

24. DEVELOPMENT OF ENTREPRENEURIAL SKILLS AND COMPETENCES THROUGH BUSINESS SIMULATIONS, Doc. Ing. Vladimir Chalupsky, CSc., MBA; Ing. David Schuller, PhD; Ing. Vit Chlebovsky, PhD; Brno University of Technology Faculty of Business and Management, Czech Republic 183

25. DYNAMICS OF ECONOMIC ADJUSTMENT UNDER UNCERTAINTY: MS-VAR MODEL FOR BALTIC DRY INDEX, Sergei Kornilov, Assoc. Prof. Dr. Ants Aasma, Svetlana Ridala, Tallinn University of Technology, Estonia 189

26. ECONOMIC DEVELOPMENT OF BREWING INDUSTRY IN THE CZECH REPUBLIC AND FUTURE PROSPECTS, dr. Michal Kubenka, doc. Renata Myskova, Bc. Monika Felgrova, University of Pardubice, Czech Republic.....197

27. EFFECTS OF INTANGIBLE COMPONENTS ON THE CONSUMER BEHAVIOR: EVIDENCES FROM ANDALUCIA, PhD Dante Di Matteo, University G. d'Annunzio of Chieti Pescara, Department of Economics, Italy.....205

28. ENERGY EFFICIENCY ENHANCEMENT A AS PRIORITY DIRECTION OF THE RUSSIAN ECONOMY'S INNOVATIVE MODERNIZATION UNDER THE TRANSITION TO A 6 TECHNOLOGICAL MODE, Prof. Alexander Melnik, associate professor Ludmila Lukishina, Kazan (Volga Region) Federal University, Russia 213

29. EVALUATING ENERGY SECURITY IN RUSSIA: CHALLENGES AND OPPORTUNITIES, PhD in Economics Pykhov P., Kashina T., Institute of Economics UB RAS, Russia 221

30. EVALUATION OF ECONOMIC BENEFITS FROM MIGRATED LABOUR FORCE, Assoc. Prof. Mgr. Sergej Vojtovic, DrSc., Ing. Magdalena Tupa, PhD., Alexander Dubcek, University in Trencin, Faculty of Social and Economic Relations, Slovakia 229

SCIENTIFIC JOURNAL OF INTERNATIONAL MULTIDISCIPLINARY RESEARCH

31. EVOLUTION OF SOCIAL RESPONSIBILITY OF ECONOMIC ENTITIES, Prof. Dr. Elena L. Andreeva, Cand. Yuliya G. Myslyakova, Dr. Dmitry A. Karkh, Prof. Dr. Vladimir G. Loginov, Cand. Artem V. Ratner, Institute of Economics UB RAS, Russia 237

32. EXPORT POTENTIAL ASSESSMENT OF RUSSIAN PHARMACEUTICAL CLUSTERS, Prof. Dr. Elena L. Andreeva, Prof. Dr. Elena Sapir, Igor Karachev, Daniil Zherenkov, Institute of Economics UB RAS, Russia.....245

33. FDI INTENSITY AS SIGNAL IN THE DECISIONAL PROCESS OF MULTINATIONAL COMPANIES' EXPANSION, PhD Candidate Andrei Radutu, PhD Candidate Ioan Lucian Alexa, PhD Candidate Georgiana Oana Moraru, University of Economic Studies, Romania 253

34. FEATURES OF CREATION OF REGIONAL BRANDS IN THE REPUBLIC OF TATARSTAN, Assoc. Prof. Dr. Eidelman B.M., Assoc. Prof. Dr. Fakhrutdinova L.R., Assoc. Prof. Dr. Nayda A.M., Kazan (Volga Region) Federal University, Russia.....261

35. FEELING OF SELF-WORTH AND ASSESSMENT OF MISCELLANEOUS ASPECTS OF MANAGERS' WORK IN VARIOUS HIERARCHICHAL LEVELS, Sarka Bendova, MSc., University of Economics, Prague, Czech Republic.....265

36. FOREIGN DIRECT INVESTMENT AS A FACTOR FOR ECONOMIC STABILITY, Assist. Prof., Ph.D. Maya Tsoklinova, University of Forestry, Bulgaria.....273

37. FORMING A PHILOSOPHY OF PROJECT MANAGEMET OF CULTURAL DEVELOPMENT, Assoc. Prof., PhD. Yulia Polozhentseva, Prof. Irina Ershova, Assoc. Prof., PhD. Maria Kozeva, Assoc. Prof., PhD. Oleg Kalimov, South-West State University, Russia 281

38. GOVERNMENT BUDGET BALANCE AND DEBT SUSTAINABILITY IN THE VISEGRAD GROUP, Jana Chrenkova, PhD., Marek Kalovec, PhD., University of Economics in Bratislava, Slovakia.....289

39. HISTORY AND DEVELOPMENT OF NON-GOVERNMENTAL ORGANISATIONS, PhD Kristaps Zdanovskis, Prof. Irina Pilvere, Latvia University of Agriculture, Latvia 297

40. IMPACT OF INTERNATIONAL ECONOMIC AGREEMENTS ON THE DEVELOPMENT OF INTERNATIONAL TRADE FOR REGION, Prof. Dr. Elena L. Andreeva, Prof. Dr. Aleksandr F. Linetsky, Cand. Artem V. Ratner, Aleksandr I. Tarasov, Darya E. Kuznetsova, Institute of Economics UB RAS, Russia.....305

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016 3RD INTERNATIONAL MULTIDISCIPLINARY

41. IMPACT OF MARKET STRUCTURE ON PERFORMANCE IN CENTRAL AND EASTERN EUROPEAN BANKING SYSTEM, Claudia Dobre, Ovidius University of Constanta, Romania.....313

42. IMPACTS OF LABOUR MIGRATION ON DEVELOPMENT AND AMOUNT OF SALARY, Magdalena Tupa, Alexander Dubcek University in Trencin, Faculty of Social and Economic relations, Slovakia 321

43. IMPROVING THE ACCESSIBILITY OF TOURISM THROUGH AN INNOVATIVE EVALUATION TOOL FOR TOURISTS WITH SPECIAL NEEDS, Assoc. Prof. Gheorghita Dinca, Lecturer Laura Cismaru, Prof. Gabriel Bratucu, Transilvania University of Brasov, Romania.....329

44. INDIA TOWARDS A KNOWLEDGE SUPERPOWER, Assoc. Prof. Inna Lazanyuk, Peoples Friendship University of Russia, Russia 337

45. INFLUENCE OF CSR STRATEGIES ON BUSINESS MANAGEMENT, Assist. Prof. Evelina Kamyshnykova, Assist. Prof. Oleksandr Kalinin, Priazovsky State Technical University, Ukraine.....345

46. INFORMATION TECHNOLOGY DEVELOPMENT IN THE BRICS COUNTRIES - COMPARATIVE ANALYSIS, Assoc. Prof. Svetlana Revinova, Peoples Friendship University of Russia, Russia 353

47. INFRASTRUCTURE: REDEFINING APPROACHES TO THE CONCEPT AND CLASSIFICATION, Assoc. Prof. Dr. Irina Baskakova; Ph. D. student Nikita Malafeev, Ural Federal University named after the first President of Russia B.N.Yeltsin, Russia 361

48. INSTITUTIONAL ASPECTS OF THE RUSSIAN ECONOMY REINDUSTRIALIZATION: FORECAST OF THE REGIONAL CLUSTERS DYNAMICS, chief researcher CR IMTE, Inna Shevchenko, leading researcher CR IMTE Yuliya Razvadovskaya, assistant Anna Khanina, Southern Federal University, Russia 369

49. INTEGRATING SUSTAINABLE DEVELOPMENT POLICIES IN CREATING AN AGRICULTURAL COOPERATIVE, Preda (Diaconeasa) Maria Claudia, Chirculescu Raluca Emilia, Bucharest University of Economic Studies, Romania.....377

50. INTELLIGENCE TECHNOLOGIES IN MANAGEMENT AND ADMINISTRATION OF JUSTICE, Assoc. Prof. Nayden Nenkov, Prof. Mariana Petrova, Assoc. Prof. Yuriy Dyachenko, Episkop Konstantin Preslavsky University of Shumen, Bulgaria 385

51. *INTER MUNDUS* – DESIGNING THE QUALITY OF HOTEL SERVICES: PROSPECT OF CUSTOMER AND MANAGER, Katarzyna Hys, Opole University of Technology, Poland.....393

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS

52. INTERNATIONAL ASSIGNMENT PROCESS IN ORGANIZATION: EXPATRIATES AND REPATRIATES PERSPECTIVE, Dr. psych. Solveiga Blumberga, Daiga Treilina, RISEBA University Business Arts and Technology, Latvia 401

53. INVESTIGATION OF THE REASONS AND IDENTIFICATION OF CYCLIC RECURRENCE IN INTENSIFICATION OF THE RESOLUTION OF THE PROBLEMS OF THE RUSSIAN ECONOMY'S ENENERGY EFFICIENCY ENHANCEMENT, Alexander Melnik, Olga Mustafina, Kazan (Volga Region) Federal University, Russia.....409

54. LABOR MARKET FRICTIONS IN THE VISEGRAD GROUP, Ing. Adam Papai, Masaryk University, Czech Republic 417

55. METHODICAL APPROACHES TO ASSESSMENT OF INTELLECTUAL RENT AS A FACTOR OF INNOVATIVE ECONOMY DEVELOPMENT, Prof. Irina Ershova, Assistant Prof. Irina Androsova, Prof. Svetlana Morkovina, Southwest State University, Russia.....425

56. METHODOLOGICAL APPROACHES TO INDICATORS' MONITORING OF ECONOMIC SECURITY FOR CORPORATIONS OF HI-TECH INDUSTRY, Assoc. Prof., Ph.D in Economics Elena V. Kostyaeva, Assoc. Prof., Ph.D in Economics Irena V. Plotnikova, Novosibirsk State Technical University, Russia ...431

57. METHODOLOGY FOR ESTIMATION OF FORESTRY ENTERPRISES COMPETITIVENESS, Assoc. Prof. PhD Konstantin Kolev, University of Forestry, Bulgaria 439

58. MIGRATION OF LABOUR IN THE BALTIC STATES: ECONOMIC IMPACT AND CONSEQUNCES, Dr. Daina Vasilevska, Prof. Baiba Rivza, Dr. Inese Lusena – Ezera, Dr. Una Libkovska, Liepaja University, Latvia.....447

59. MODELING PRUDENTIAL IMPACTED BANKING IT-SYSTEMS USING QUEUEING THEORY MODELS, PhD. Prof. Ion Lungu, PhD. Candidate Florin-Catalin Enache, PhD. Candidate Adriana-Nicoleta Talpeanu, Bucharest University of Economic Studies, Romania.....455

60. MODELLING A COST STRUCTURE FOR POLISH MANUFACTURER: A CASE STUDY OF THE IMPLEMENTATION, Ph.D. Eng. Elzbieta Milewska, Silesian University of Technology, Poland 463

61. MODELLING THE SPATIAL DEVELOPMENT OF THE RUSSIAN BARENTS-ARCTIC REGION, Prof. Nikolay Didenko, Prof. Djamilia Skripnuk, Assoc. Prof. Olga Krasulina, Peter the Great St. Petersburg Polytechnic University, Russia 471

62. NON-TECHNOLOGICAL INNOVATIONS AND THEIR IMPACT ON THE SOCIO-ECONOMIC DEVELOPMENT OF RUSSIA, Prof. Dr. Yulia Vertakova, Assoc. Prof. PhD Olga Grechenyuk, Assoc. Prof. PhD Anton Grechenyuk, South-West State University, Russia.....479

63. ORGANIZATION OF INNOVATIVE SYSTEMS IN GLOBAL ECONOMY, Prof. Dr. Elena L. Andreeva, Victoriia V. Zakharova, Cand. Yuliya G. Myslyakova, Cand. Pavel L. Glukhikh, Cand. Artem V. Ratner, Institute of Economics UB RAS, Russia 487

64. POSITIVE AND NEGATIVE TRENDS OF THE ROMANIAN TOURISM, Popescu Gabriela, Adamov Tabita, Dincu Ana Mariana, Iosmim Iasmina, Banat University of Agronomical Sciences and Veterinary Medicine, Romania 495

65. PROBLEMS OF DEVELOPMENT OF RELIGIOUS TOURISM IN TATARSTAN, Assoc. Prof. Dr. Niyaz M. Biktimirov, Assoc. Prof. Dr. Almaz M. Galimov, Assoc. Prof. Dr. Shamil Sh. Galimov, Kazan (Volga Region) Federal University, Russia.....503

66. RECURRENCE QUANTIFICATION ANALYSIS OF CZECH MACROECONOMIC TIME SERIES, Radko Kriz, Petra Lesakova, University of Pardubice, Czech Republic.....507

67. REGIONAL DEVELOPMENT IN ROMANIA - REALITIES AND PERSPECTIVES, Assoc. Prof. PhD Avram Costin Daniel, Prof. PhD Avram Veronel, PhD Avram Alexandru, University of Craiova, Romania.....515

68. REGIONAL DISPARITIES AND COMPETITIVENESS OF SLOVAK REGIONS, Ing. Katarina Kralova, Ph.D., Ing. Jana Sochulakova, Ph.D., Alexander Dubcek University in Trencin, Faculty of Social and Economic Relations, Slovakia.....523

69. RELICS OF FREDERICIAN COLONISATION IN SOUTHERN POLAND AS CULTURAL AND NATURAL TOURIST DESTINATIONS, Assist. Prof. Maria Fajer, Assist. Prof. Robert Machowski, Assist. Prof. Mariusz Rzetala, Assist. Prof. Jan Maciej Waga, University of Silesia, Faculty of Earth Sciences, Poland.....531

70. RESEARCH OF A LEVEL OF COMMUNICATIVE ACTIVITY AS A FACTOR OF ORGANIZATIONAL DEVELOPMENT OF BUSINESS SYSTEMS, Ass. Prof. Evgenia Krivokora, North-Caucasus Federal University - Institute of Economics and Management, Russia.....539

71. RESEARCH OF THE ECONOMIC GROWTH OF THE REGION ON THE BASIS OF THE TURNPIKE THEORY: MODELS AND PRACTICAL APPLICATION, Prof. Dr. Yulia Vertakova, Assoc. Prof., PhD. Yulia Polozhentseva, Assoc. Prof. PhD. Maria Klevtsova, South-West State University, Russia 547

72. RESEARCH ON FARM SIZE AND ECONOMIC POTENTIAL OF THE VINE-GROWING FARMS IN THE WESTERN OF ROMANIA, Assoc. Prof.DSc. Alina Georgeta Dobrei, Prof. DSc Alin Dobrei, Assoc. Prof. DSc. Eleonora Nistor, Assoc. Prof. DSc. Dorin Camen, Assoc. Prof. DSc. Ion Chisalita, Banat University of Agronomical Sciences and Veterinary Medicine, Romania.....555

73. RESEARCH ON THE INFLUENCE OF FOLIAR FERTILIZERS UPON THE PRODUCTION OF HERBA IN HYSSOPPUS OFFICINALIS ON SANDY SOILS, Dr. Milica Dima, Dr. Reta Draghici, Dr. Iulian Draghici, Dr. Elena Ciuciuc, Assoc. Prof. Dr. Mariana Niculescu, Plants Crops Research and Development Center on Sandy Soils Dabuleni, Romania 563

74. RISK MANAGEMENT AND RISK QUANTIFICATION TOOLS: FOCUSING ON SLOVAK ENTERPRISES, Ing. Sylvia Jencova, PhD.; Ing. Viktoria Ali Taha, PhD.; Ing. Michaela Sirkova, PhD.; doc. Ing. Juraj Tej, PhD, University of Presov in Presov, Slovakia 569

75. RISK MANAGEMENT IN CLUSTER'S COOPERATION IN SLOVAK REPUBLIC, Ing. Jan Havko, assoc. prof. Ing. Jozef Klucka, PhD., Ing. Katarina Haviernikova, PhD., University of Zlina, Slovakia.....577

76. ROLE OF SPACE AND STABILITY IN THE DEVELOPMENT OF TOURISM, Assoc. Prof. Dr. Niyaz K. Gabdrakhmanov, Assoc. Prof. Dr. Ruslan A. Ulengov, Assoc. Prof. Dr. Liliya R. Ismagilova, Kazan (Volga Region) Federal University, Russia.....585

77. ROMANIAN ASSOCIATION AND COOPERATION IN AGRICULTURE ON ECONOMIC GROWTH, Phd Student Alin Marcel Popescu, Lecturer Dr. Camelia Manescu, Researcher Miroslav Raicov, Prof. Dr. Teodor Mateoc, Prof. Dr. Nicoleta Mateoc-Sirb, Banat University of Agronomical Sciences and Veterinary Medicine, Romania.....591

78. SMALL AND MEDIUM ENTERPRISES IN THE CONTEXT OF THE SLOVAK AND EUROPEAN LEGISLATION, Prof. h.c. doc. Ing. Monika Hudáková, PhD., PhDr. Marek Vrbinčík, doc. PhDr. René Pawera, PhD., Ing. František Vojtech, PhD., School of Economics and Management of Public Administration in Bratislava, Slovakia 597

79. SOME ASPECTS CONCERNING PEANUTS CROPS ON SANDY SOILS, Dr. Milica Dima, Dr. Reta Draghici, Dr. Iulian Draghici, Dr. Elena Ciuciuc, Assoc. Prof. Dr. Emilia Constantinescu, Plants Crops Research and Development Center on Sandy Soils Dabuleni, Romania 605

80. STATE REGULATION OF ECOLOGICAL SAFETY OF SUBSOIL USE IN RUSSIA, Prof. Dr. Alexander I. Tatarkin, Prof. Dr. Margarita N. Ignatieva, Prof. Dr. Elena L. Andreeva, PhD Irina G. Polyanskaya, Vera V. Yurak, Institute of Economics UB RAS, Russia 611

81. STATISTICAL ANALYSIS AND FORECASTING OF RAIL TRANSPORT ACCIDENTS IN THE CZECH REPUBLIC, MSc. Jana Motykova, Assoc. Prof. Dr. Libor Svadlenka, University of Pardubice, Czech Republic 619

82. STUDY OF THE EFFICIENCY OF MOTORAIL TRAINS AS A FACTOR FOR TRANSPORT DEVELOPMENT, Assoc. Prof. PhD. Svetla Stoilova, Technical University of Sofia, Bulgaria 627

83. STUDY REGARDING THE CONSUMERS OF AGROTURIST PRODUCTS ACCORDING TO SOCIAL CRITERIA, Marin Diana, Stefanovic Mladin, Csaholczi Aurelian, Ienovan Daniela, Petroman Cornelia, Banat University of Agronomical Sciences and Veterinary Medicine, Romania 635

84. STUDY REGARDING THE ROLE OF THE TOURISM ORGANISATION IN PROMOTING THE AUTHENTIC AGROTOURISM, Petroman Cornelia, Benea Marius Catalin, Varga Melania, Serban Victoria, Petroman Ioan, Banat University of Agronomical Sciences and Veterinary Medicine, Romania 643

85. SUSTAINABILITY MANAGEMENT IN THE EUROPEAN UNION COUNTRIES, Assoc. Prof. Emilia Huttmanova, PhD.; Assoc. Prof. Tadeusz Bak, University of Presov in Presov, Slovakia 649

86. SUSTAINABILITY OF GOVERNMENTS DEBT, Peter Bad'o, Masaryk University, Czech Republic 657

87. SUSTAINABLE TOURISM DEVELOPMENT AS THE BASIS OF ARCTIC LANDSCAPE CONSERVATION (CASE OF UST-LENSKIY PROTECTED AREA) IN THE REPUBLIC SAKHA (YAKUTIA), RUSSIA, Elena Totonova, Sebastien Gadal, North-Eastern Federal University named after M.K.Ammosov, Russia 663

88. SWOT ANALISYS OF BANAT AND TIMIS AGROTOURISM SECTOR, Petroman I., Suciu Codruta, Benea M.C., Bolocan Rodica, Marin Diana, Banat University of Agronomical Sciences and Veterinary Medicine, Romania 671

89. TATARSTAN TOURISM WITHOUT TURKEY: ECONOMIC IMPLICATIONS OF RUSSIA'S SANCTIONS, Prof. Dr. Vladimir A. Rubtzov, Assist. Prof. Bautista E.H., Assoc. Prof. Dr. Niyaz K. Gabdrakhmanov, Kazan (Volga Region) Federal University, Russia 679

90. TAX COLLECTION AND ECONOMIC GROWTH: OECD PANEL STUDY, Petr Zimcik, Vlastimil Reichel, Masaryk University, Czech Republic 685

91. THE (IN)EFFICIENCY OF QUANTITATIVE EASING POLICIES TO STIMULATE THE AGGREGATE DEMAND, Phd. Candidate Nerau Vlad, Phd. Candidate Alexa Lucian-Ioan, Bucharest University of Economic Studies, Romania 693

92. THE ANALYSIS OF PERCEIVED ENVIRONMENTAL UNCERTAINTY AS A DEPENDANT VARIABLE, Eva Svandova, Michal Jirasek, Masaryk University, Czech Republic.....701

93. THE ANALYSIS OF THE EFFECTIVENESS OF METHODS OF EVALUATING PERFORMANCE OF EMPLOYEES ACCENTING STREAMLINING OVERALL PERFORMANCE MANAGEMENT PROCESS, Mgr. Nella Svetozarovova PhD., University of Presov in Presov, Slovakia.....709

94. THE ASSUMING OF CORPORATE RESPONSIBILITY OF LARGE ROMANIAN COMPANIES IN TELECOMMUNCATION SECTOR AND IN BANKING SECTOR, Edit Nagy, Erzsebet Szasz, Partium Christian University, Romania.....717

95. THE CHARACTERISTICS OF THE ECOTOURISM CLUSTERS DEVELOPMENT, Assoc. Prof. Dr. Oleg Bunakov, Assoc. Prof. Dr. Anisa Khusainova, Kazan (Volga Region) Federal University, Russia 725

96. THE CONTRIBUTION OF FDI AT ROMANIAN ECONOMY DEVELOPMENT, Ioana Anda Milin, Iuliana Ioana Merce, Elena Pet, Gherman Remus, Brad Ioan, Banat University of Agronomical Sciences and Veterinary Medicine, Romania.....731

97. THE ESTIMATION OF INNOVATIVE POTENTIAL OF THE HIGHER SCHOOL, PhD, Assoc.Prof. Natalya Tsukanova, South-West State University, Russia.....739

98. THE EVALUATION OF STRATEGIC ACTIVITIES' IMPORTANCE IN SMALL AND MEDIUM-SIZED ENTREPRISES, Eva Svandova, Pavla Odehnalova, Masaryk University, Czech Republic.....747

99. THE FACTORS AND POSSIBILITIES OF CROSS-BORDER CLUSTERS DEVELOPMENT IN A COASTAL ZONE OF RUSSIA OF THE BLACK AND THE BALTIC SEA, Prof. Alexander Druzhinin, Ass. Prof. Stanislav Lachininskii, Ass. Prof. Mikhaylov, Saint Petersburg State University, Russia.....755

100. THE HISTORIC CITY OF THE REPUBLIC OF TATARSTAN AS A BASIS FOR REGIONAL TOURISM CLUSTER, Assoc. Prof. Dr. Niyaz K. Gabdrakhmanov, Assoc. Prof. Dr. Ruslan A. Ulengov, Assoc. Prof. Dr. Yuliya N. Gorelova, Kazan (Volga Region) Federal University, Russia.....763

101. THE IMPACT OF INFRASTRUCTURE CAPITAL ON REGIONAL ECONOMIC DEVELOPMENT AND PERFORMANCE: NEW EVIDENCE FROM RUSSIAN REGIONS, Assoc. Prof. Dr. Irina Baskakova, PhD. student Nikita Malafeev, Ural Federal University named after the first President of Russia B.N.Yeltsin, Russia 769

102. THE IMPACT OF INNOVATION ACTIVITY ON SOCIO-ECONOMIC PERFORMANCE: EMPIRICAL EVIDENCE FOR EUROPEAN COUNTRIES, Assoc. Prof. Svetlana Balashova, Peoples Friendship University of Russia, Russia.....777

103. THE IMPACT OF PARENTAL MIGRATION ON STUDENTS INVOLVEMENT IN HOUSEHOLD DUTIES - THE EVIDENCE FROM THE REPUBLIC OF MOLDOVA, Ing. Tereza Pilarova, Ing. Alexander Kandakov, PhD, Czech University of Life Sciences Prague, Czech Republic.....785

104. THE IMPACT OF THE GLOBAL EVENTS ON THE TOURISM INDUSTRY OF CITIES, Denis Nechaev, ITMO University, Russia.....793

105. THE IMPACT OF THE ZERO LOWER BOUNDED FOREIGN INTEREST RATES ON A SMALL OPEN ECONOMY, Karolina Sukupova, prof. Ing. Osvald Vasicek, CSc., Masaryk University Faculty of Economics and Administration, Czech Republic.....801

106. THE INFLUENCE OF THE EXTERNAL ENVIRONMENT ON VALUE PROPOSITION OF CZECH COMPANIES: RESEARCH RESULT PRESENTATION, Peter Kita, University of Technology of Brno, Czech Republic.....809

107. THE INNOVATIVE INFRASTRUCTURE DEVELOPMENT IN THE RUSSIAN ARCTIC, Assoc. Prof. Maria Radion, Prof. Nikolay Didenko, Assistant Diana Zenchenko, Peter the Great St. Petersburg Polytechnic University, Russia.....817

108. THE INTERNATIONAL TRADE OF SHELLED FRUIT: A LONGITUDINAL ANALYSIS THROUGH SOCIAL NETWORK APPROACH, Assistant Prof. Gioacchino Pappalardo, Ph.D. Valeria Allegra, Ph.D. Gaetano Chinnici, Assoc. Prof. Salvatore Bracco, Professor Alfonso Silvio Zarba, University of Catania, Department of Agriculture Food and Environmental, Italy 825

109. THE MARKET AND IDEAS OF EXPERIMENTAL REGIONAL ECONOMY, Ph.D. in Economics, Associate Professor Larisa Makhova Ph.D. in Economics, Associate Professor Olga Lenkovets, Saint-Petersburg Mining University, Russia 833

110. THE MICROBREWERY AS AN INTERESTING OPPORTUNITY FOR SMALL AND MEDIUM-SIZED BUSINESSES, Ing. Ladislava Kuchynkova, Ph.D., Masaryk University, Czech Republic.....841

111. THE POSITION OF TURKISH AIR TRANSPORTATION IN EUROPE, Burak Camurdan, Suna Cetin, Selim Gurgen, Melih Cemal Kushan, Eskisehir Osmangazi University, Turkey.....849

SCIENTIFIC AND PRACTICAL CONFERENCE ON INTERDISCIPLINARY SOCIAL SCIENCES AND ARTS

112. THE POSITIONS AND PROSPECTS OF RUSSIA IN THE GLOBAL OIL MARKET IN TERMS OF ITS STRUCTURAL TRANSFORMATION, Dr., Prof. Vitaly Minashkin; Ph.D. Zhan Khudoynatov, Plekhanov Russian University of Economics, Russia.....857

113. THE RELATIONSHIP OF THE REGIONAL INNOVATION POTENTIAL AND THE LEVEL OF SMALL AND MEDIUM-SIZED ENTREPRENEURSHIP DEVELOPMENT IN RUSSIA, Prof. Dr Tatiana Dubrova, PhD Student Anna Ermolina, Ass. Prof. Dr. Michail Esenin, Plekhanov Russian University of Economics, Russia 865

114. THE ROLE OF INFORMATION SYSTEMS IN THE MANAGEMENT OF TOURISM AGENCIES IN ROMANIA, Professor Cezar Mihalcescu, Lecturer Beatrice Sion, Lecturer Alexandra Marginean, Romanian-American University, Romania.....873

115. THE ROLE OF TERRITORIAL ORGANIZATION OF CITIES IN THE TOURISTIC ATTRACTION OF THE REGION ON THE EXAMPLE OF THE REPUBLIC OF TATARSTAN, Prof. Dr. Vladimir A. Rubtzov, Assoc. Prof. Dr. Niyaz K. Gabdrakhmanov, Kazan (Volga Region) Federal University, Russia 881

116. THE SIMILARITIES AND DIFFERENCES IN TAKING RESPONSIBILITIES OF LARGE COMPANIES AND SME'S, Edit Nagy, Erzsebet Szasz, Partium Christian University, Romania.....889

117. THE VALIDITY OF GIBRAT'S LAW IN INDIVIDUAL SECTORS OF CZECH ECONOMY, Ing. Veronika Hedija, Ph.D., College of Polytechnic Jihlava, Czech Republic.....897

118. THE WAGE PREMIUM FROM PARENTS' INVESTMENTS IN THE EDUCATION OF THEIR CHILDREN. EVIDENCE FROM POLAND, PhD Jacek Liwinski, Emilia Bedyk, University of Warsaw, Poland 905

119. TOTAL FACTOR PRODUCTIVITY GROWTH AND INNOVATION POLICY TOOLS: EMPIRICAL STUDY, Assoc. Prof. Svetlana Balashova, Assoc. Prof. Svetlana Revinova, Assoc. Prof. Inna Lazanyuk, Peoples Friendship University of Russia, Russia.....917

120. TWENTY-FIRST CENTURY GENERATION OF THE CLIMATE POTENTIAL FOR COASTAL TOURISM IN THE MEDITERRANEAN, Prof. Vito Telesca, Dr. Donatella Caniani, Dr. Stefania Calace, Prof. Ignazio M. Mancini, Dr. Lucia Marotta, University of Basilicata, Italy 923

121. VALENCES OF FINANCIAL COMMUNICATION IN A GLOBALIZED COMPETITIVE ENVIRONMENT, Assoc. Prof. PhD Avram Costin Daniel, Prof. PhD Avram Veronel, Prof. PhD Avram Marioara, PhD Avram Alexandru, University of Craiova, Romania 933

SECTION

ECONOMICS AND TOURISM

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
S G E M 2 0 1 6

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

UNDERSTANDING RESIDENTS' ATTITUDES TOWARD THE TOURISM DEVELOPMENT IN BRASOV COUNTY

Assoc. Prof. Dr. Ioana-Bianca Chițu[1]

Assist. Prof. Dr. Diana Foris[2]

Assoc. Prof. Dr. Codruța-Adina Băltescu[1]

Prof. Dr. Tiberiu Foris[1]

Assoc. Prof. Dr. Ruxandra-Gabriela Albu[1]

[1] Faculty of Economic Sciences and Business Administration, Transilvania University of Brasov, **Romania**

[2] Faculty of Food and Tourism, Transilvania University of Brasov, **Romania**

ABSTRACT

The development of a tourist destination generates many influences on residents, both positive and negative. The main purpose of this paper is to identify the most significant aspects regarding the impact exerted by the tourism development in the destination Brasov County on the residents. In order to achieve this goal a qualitative marketing research focus-group type was conducted. The sample included 16 respondents, from different areas of activity, namely representatives of local authorities and public institutions who know which are the residents' perceptions and attitudes regarding the effects of tourism development in the destination, NGO's representatives, tourism companies managers and also academics from the tourism field. The paper also highlights which are the effects of tourism development on issues like quality of life, local identity and specificity, and reveals the extent in which residents were involved in planning the destination's tourism development. The results obtained represent a first step in conducting a future quantitative marketing research among the residents from the destination Brasov County on this aspects. Moreover, the results reveal the fact that education and awareness campaigns may be a step toward increased understanding of the industry and, ultimately, greater support from the community and residents.

Keywords: tourism development, tourist destination, residents, qualitative marketing research.

INTRODUCTION

The development of tourist destinations is a demarche characterized by complexity, a process whose finality cannot be predicted in the absence of involvement of all those interested. The residents' presence in this equation is a constant, and the knowledge and interpretation of their interests and expectations is a necessity.

Brasov County is an important tourism destination, known at national and international level for its important natural and human resources, through its diversified structure of the tourism sector and for the high quality level of the tourism services. The local community is lately more concerned with the issues of sustainable tourism development

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION MULTIDISCIPLINARY SCIENCES AND ARTS

of Brasov County, and strides in this direction aimed at identifying residents' attitudes by carrying out specific projects, among which the DIMAST (Destination Intelligent Management for Sustainable Tourism) project.

THEORETICAL BACKGROUND

Residents in many areas are encountering tourism's impacts and benefits, but to gain support for tourism projects and initiatives, many planners now strive to understand how the public perceives the tourism industry [9]. Local residents are considered key stakeholders in the process of achieving sustainable development in tourism [11]. Most of the tourism literatures suggest that local residents' perception of tourism impact varied based on their perceptions on the benefit generated from the development [5]. Community positive attitudes will encourage tourists' satisfaction levels and contributes to the word-of-mouth promotion among them. Therefore, the involvement and the participation of the host community are pertinent towards the success of the tourism development plan [8]. It is important to note that local residents are a heterogeneous group of people [6] and knowledge about different local resident groups' attitudes about what is important in terms of sustainable tourism development can help manage planning processes at destinations [11].

There are numerous factors to explain resident attitudes such as socioeconomic factors: income, ethnicity, local and personal characteristics, age, gender, language and length of residence; spatial factors: physical distance between residents and tourists and the level of concentration of tourism facilities and services in a destination and also the economic dependency [9], [12].

Tourism development delivers numerous positive impacts such as enhancing local economies, being a source of new employment opportunities, additional tax receipts, foreign exchange earnings and income. At the same time, negative potential is relevant, as well, in issues concerning social and cultural negative impacts [10]. Sometimes, tourism-generated jobs can be accessed by residents living outside of tourism centers while tourism-generated noise and congestion are likely to be endured more immediately by those living within the tourist center, suggesting different balancing in the formulation of resident attitudes towards tourism [3].

Initially, residents support tourism development. But, as the costs overweight benefits, attitudes achieve a threshold after which residents become reluctant [8]. A research on the impact of personal benefits obtained from tourism development discovered that, benefit and cost assumed to be more carefully evaluated as the benefits exceed the cost, and when the cost exceeds benefits, residents tend to be more negative toward tourism development [13].

Moreover, communities with low tourism and strong total economic activity will foresee tourism development more favorable than communities with low tourism and high economic activity and communities with high tourism development and weak economic activity [1]. Nevertheless, there are studies which outline that even though residents do not gain direct economic benefit from tourism, they will demonstrate positive attitudes towards tourism based on a variety of shared social benefits with tourism development [2].

RESEARCH METHOD

In order to identify the most significant aspects regarding the impact exerted by the tourism development towards the residents in the destination Brasov County a qualitative marketing research focus-group type was conducted. This technique allows tourism researchers to approach issues in the field in a deep, rich way, and which is not possible within many quantitative methods [4].

The objectives of the research are the following:

- Identification the residents' perceptions and attitudes regarding the effects of tourism development in the destination Brasov County;
- Highlighting the influences exerted by tourism development on the quality of life;
- Highlighting the influences exerted by tourism development over local identity and specificity;
- Identifying the extent to which the residents were involved in tourism planning and development in the destination Brasov County.

The sample included 16 specialists from different areas of activity, who are familiar with the issues regarding the attitudes of residents toward tourism development at the destination Brasov County, due to their current activities: 5 representatives of local public authorities (Brasov County Council and from Brasov, Predeal and Bran City Halls), 1 specialist from the management team of the Association for Tourism Promotion and Development in Brasov County (APDT), 6 managers of tourism companies from Brasov county (hotels, guesthouses, restaurants, tourism agencies), 2 specialists from NGO's activating in the tourism sector and 2 members of the academic staff, specialized in tourism development. At the same time, all of these 16 subjects are also residents in Brasov County.

The interview guide was based on four discussion topics, each ensuring the fulfillment of the objectives previously stated. The interview guide was designed following the content of ETIS toolkit - "European Tourism Indicators System For Sustainable Destination Management" [7].

RESULTS AND DISCUSSION

The results of the qualitative research achieved were structured on discussions topics, topics that are based on the main objectives of the research. The method of analysis used to structure the results obtained was the content analysis, method known and generally used in qualitative market researches. This method aims to extract from the content of discussions of the relevant information for the research, information that contributes to reaching established objectives.

Objective 1: Identification the residents' perceptions and attitudes regarding the effects of tourism development in the destination Brasov County.

The first subject of the analysis revealed the extent to which residents are satisfied with tourism development in the destination Brasov County. From this perspective, the results showed that, in general, tourists' presence has beneficial effects on the economic

development of the destination, aspect highlighted mainly in terms of jobs created in the tourism firms but also by jobs in those companies which provide various services both for residents and visitors (taxi and local transportation firms, companies that provide recreation services, trading companies, etc.). 38% out of the respondents have pointed out that a significant part of the tourism jobs are seasonal, fact which generates uncertainty for the employees. At the same time, tourism activities generate direct and indirect revenues and, as the number of foreign visitors increases, tourism has an important contribution to the local exports. All of the 16 respondents stated that the economic influences are positive and with some support from the local authorities, tourism could become an important sector in the destination's economy.

Regarding the community/social impact of tourism at the destination it was pointed out that the presence of large numbers of tourists negatively affects the community in terms of congestion created, difficulties encountered by the residents to find parking places, especially in the areas frequented by tourists, and the difficulty to access recreational activities due to the reasons mentioned above. As a conclusion of the ideas expressed by respondents, it was stated that a proper involvement of local authorities is necessary in order to solve these issues. The negative social impacts determined by the presence of large numbers of visitors to the destination could be counteracted by punctual administrative actions.

Following the opinions expressed by the subjects, it was highlighted that the impact of tourism development should be analyzed separately by season (fall, winter, spring, summer), followed by a specific evaluation for the whole year.

Objective 2: Highlighting the influences exerted by tourism development on the quality of life.

A first topic of discussion which was proposed in order to assess the influences of the tourism development on the quality of life emphasized which are the residents' personal benefits due to tourism development at the destination. The aspects related to this topic highlighted that the number of tourism companies increased significantly in the destination Brasov County (accommodation units, restaurants, travel agencies), and that these firms are the source of existance for the owners, employees and their families.

At the same time, the presence of a large number of visitors has boosted local authorities to streamline road traffic, to create pedestrian streets, to carry out development works in parks and recreational areas, to consider citizen safety as a priority, to develop sustained actions to promote the destination, to undertake many embellishment actions at the destination (improving public lighting, improving the placement and content of traffic and tourist signs, significant investments to plant flowers and trees, etc.).

It was also highlighted the idea that events, fairs and festivals that address not only to the residents but also the visitors represent an aspect that aims to improve quality of life at the destination.

Nevertheless, tourism development exerts numerous negative impacts on the quality of life. The main relevant elements which have been pointed out concern pollution, agglomeration, sometimes tensions as a consequence of agglomeration, etc.

Objective 3: Highlighting the influences exerted by tourism development over local identity and specificity.

Regarding this aspect of the impact of tourism development in the destination Brasov County, the respondents showed that the fact that residents are proud of the local cultural values and the tourists' presence help them to be more communicative, to provide information about tourist attractions and local specifics, when requested.

Festivals and local events that focus on local heritage contribute to the spread of cultural values, to promoting the destination and its specificity which increases the sense of belonging to the community among residents.

The local culture and traditional customs are important elements of attraction and a source of revenues for residents. These actions are beneficial to residents, especially among the younger generations, because they represent a mean to engage in community activities and to socialize.

For the foreign tourists the contact with the local specificity is an opportunity to understand the culture of other countries, as a way of rapprochement between peoples. Also it was highlighted the idea that promoting local specificity is a way of differentiating the destination and to increase the tourism attractiveness, which exert numerous beneficial influences. Equally, respondents pointed out that certain local traditions are put in place specifically for visitors, aspect which contributes to their preservation.

Objective 4: Identifying the extent to which the residents were involved in tourism planning and development in the destination Brasov County.

Subjects showed that the involvement of residents in planning and development of the tourism sector in the destination Brasov County is almost nonexistent. Although they are considered important stakeholders, playing an important role in the success of these actions, residents are not informed nor consulted about these issues.

Following the ideas expressed by the respondents it was revealed that it is in the interest of all parties to organize actions of information, consultation and inter-communication. This manner of approach is considered the correct course of action in order to ensure a sustainable development at the destination.

Moreover, the respondents revealed the fact that education and awareness campaigns could be an important step towards increased understanding of the tourism industry and, ultimately, towards ensuring greater support from the community and residents.

CONCLUSION

Residents have an essential role in the development of a tourist destination. To understand the tourism industry, one needs to be more than an experienced traveler to many exotic locations—one should also be a resident who understands the value of tourism to his or her community and has an interest in protecting the locality's quality of life [8]. Understanding the residents points of view represent a prerequisite for tourism planning and future development. If correctly employed, this type of analysis could provide a more comprehensive understanding of resident attitudes towards

tourism in a region and help planners develop initiatives that best suit their communities [3].

This analysis showed that at the tourism destination Brasov County, residents appreciate the benefits exerted by the tourism sector, primarily the economic ones. Equally, the residents revealed that tourism development contributes to preservation and promotion of local identity, increases the sense of belonging to the community, and reinforce the feeling of national and local pride. Also, the increase in the number of visitors positively influences administrative issues at the destination. On the other hand, we cannot ignore the negative impacts exerted by tourism development, elements which directly affect the residents. Thus, agglomeration, pollution or inaccessibility of local services are among the most significant adverse effects reported. Likewise, one cannot overlook the idea that at the destination, involving residents in tourism planning and development is insignificant. Support for the future tourism development is a key factor in developing and implementing successful initiatives. On the other hand, residents should actively participate in community activities as well and sustain tourism and community development [8].

These results will represent the basis for designing the questionnaire which will be used to perform a quantitative marketing research on the same topic among the residents from the destination Brasov County.

ACKNOWLEDGEMENTS

The research presented in this paper is supported by the Romanian Executive Unit for Financing Higher Education, Research, Development and Innovation, the Joint Applied Research Projects PN-II-PT-PCCA-2013-4, under the contract no. 324/2014.

REFERENCES

[1] Allen L.R., Hafer, H.R., Long, P.T., Perdue R.R., Recreation and Tourism Development, cited in Hanafiah M.H., Jamaluddin M.R., Zulkifly M.I., Local Community Attitude and Support towards Tourism Development in Tioman Islands, Malaysia, Procedia – Social and Behavioral Sciences, vol. 105, pp 792-800, 2013.

[2] Andereck K.L., Nyaupane G.P., Exploring the mature of tourism and quality of life perceptions among residents, Journal of Travel Research, vol. 50, pp 248-269, 2011.

[3] Devine J., Gabe T., Bell K.P,. Community Scale and Resident Attitudes towards Tourism, The Journal of Regional Analysis & Policy, vol. 39/issue 1, pp 20-21, 2009.

[4] Dwyer L., Gill A., Seetaram, N., Handbook of research methods in tourism: Quantitative and qualitative approaches, Retrieved from http:// books.google.com/books?hl=en&lr=&id=qTwb_VH7qIoC&oi=fnd&pg=PR3& dq=handbook+of+research+methods+in+tourism+larry+dwyer&ots=q-ZFOb0IpI&sig=pVIeYNzBZPxwCPtx5bVdT1lElws, 2012.

[5] Dyer P., Aberdeen L., Schuler S., Tourism impacts on an Australian indigenous community, Tourism Management, vol. 24, pp 83-95, 2007.

[6] Easterling D.S., Residents and tourism, Journal of Travel Tourism Marketing, vol.18/issue 4, pp 49-64, 2005.

[7] The European Tourism Indicator System - ETIS toolkit for sustainable destination management, European Union, 2013.

[8] Hanafiah M.H., Jamaluddin M.R., Zulkifly M.I., Local Community Attitude and Support towards Tourism Development in Tioman Islands, Malaysia, Procedia – Social and Behavioral Sciences, vol. 105, pp 792-800, 2013.

[9] Harrill R., Residents' Attitudes toward Tourism Development: A Literature Review with Implications for Tourism Planning, Journal of Planning Literature, vol. 18/issue 1, pp 1-16, 2004.Name1 N.A., Name2 S. T., Complete Title of the paper, International Scientific Event, Country, vol. 3, pp 185-193, 2000.

[10] Ko D.W., Stewart W.P., A Structural Equation Model of Residents' Attitudes for Tourism Development, Tourism Management, vol. 23/issue 5, pp 521-530, 2002.

[11] Lundberg E., The importance of tourism impacts for different local resident groups: A case study of a Swedish seaside destination, Journal of Destination Marketing & Management, Article in press available at http://dx.doi.org/10.1016/j.jdmm.2016.02.002i, pp 1-10, 2016.

[12] Wang Y., Residents' Attitudes Toward Tourism Development: A Case Study of Washington, NC, Proceedings of the 2006 Northeastern Recreation Research Symposium, USA, pp 411-418, 2006.

[13] Wang Y., Pfister R.E., Residents Attitudes toward Tourism and Perceived Personal Benefits in a Rural Community, Journal of Travel Research, vol. 41/issue 1, pp 84-93, 2008.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

A GENUINE IMPLEMENTATION OF THE EUROPEAN TOURISM INDICATORS SYSTEM FOR SUSTAINABLE DESTINATIONS WITHIN BRASOV COUNTY

Lecturer Dr. Laura Cismaru[1]

Assoc. Prof. Dr. Gheorghita Dinca[2]

Prof. Dr. Gabriel Bratucu[3]

[1,2,3] Transilvania University of Brasov, **Romania**

ABSTRACT

After several years of considerable research efforts, in 2013, the European Commission launched the first version of a European Tourism Indicator System Toolkit for Sustainable Destinations. It was created by European experts as a simple and easy to apply tool, composed of 67 indicators, specially conceived to offer support for European tourist destinations which are interested in developing in a sustainable way. It can be used both as an evaluation tool and as a benchmarking tool. In this context, this paper introduces the Research Project called Destination Intelligent Management for Sustainable Tourism (DIMAST) which was launched in Romania in 2014, aiming to implement the European Tourism Indicator System through a Business Intelligence application. Two qualitative research methods were used within the present paper: the case study and innovation. The first part of the article shortly introduces the information on the European Tourism Indicator System TOOLKIT for Sustainable Destinations. The paper than focuses on the above mentioned Pilot project which has as its main objective to support the local Destination Management Organization from Brasov County, one of the most famous tourist destinations in Romania, to develop in a sustainable way using an innovative Business Intelligence software based on the 67 indicators developed by the European Commission in 2013. The project groups seven partners from tourism research institutions, tourism industry, as well as an ICT software developer and it is actually in progress, a genuine set of indicators being already conceived based on Brasov's profile. Due to the fact that there was not available data for many European Indicators, the article presents how the European system has been genuinely adapted in the case of Brasov County. The main findings of this project can be used as best practice by other European destinations willing to develop in a sustainable way.

Keywords: sustainable development indicators, tourist destination, Business Intelligence

INTRODUCTION

In February 2013, the European Commission launched the European Tourist Indicators System for Sustainable Destinations [1], referred to as "the ETIS system", in order to support the sustainable development approach of tourist destinations in Europe. ETIS was conceived as a dynamic and adaptable system of indicators, allowing destinations to use it according to their specific needs and profile. Therefore, ETIS includes 67

indicators, but destinations are encouraged to conceive and use additional indicators which are useful in the evaluation process of the sustainable development.

Two testing sessions took place before the official ETIS Toolkit has been released, involving several important tourist destinations in European countries in order to identify some core indicators which can be used by all destination interested to develop in a sustainable way. Due to the fact that Brasov county is a leading tourist destination in Romania, it was chosen by the European Commission to participate at workshops on the topic of conceiving the most appropriate indicators for evaluating the sustainability of European tourist destinations. In October the 23rd, the workshop called "Study of European Tourist Indicators System for Destinations' Sustainable Management" took place in Brasov city, organized by Surrey University – Great Britain, INTASSAVE Partnership and Sustainable Tourism International Board, which have been empowered by the European Commission to put into effect a feasibility study of ETIS 2013 for the European tourism. Several specialists from Transilvania University as well as from the local Destination Management Organisation (DMO) – the Association for Promotion and Development of Tourism in Brasov (APDT) were actively involved in this workshop. Furthermore, Brasov is home for valuable Information Technology and Communication (ICT) enterprises, among which SC BIT Software SRL – one of the few developers of authentic Business Intelligence (BI) software solutions in Romania.

It is on these premises that the concept of the DIMAST Project (Destination Intelligent Management for Sustainable Tourism) was formulated in 2013. The main aim of the project was to offer real support to the local DMO in Brasov in the process of sustainable development through a Business Intelligence application which is based on the ETIS system of indicators. One of the major challenges for the research team within the DIMAST Project proved to be the setting-up of the appropriate set of indicators to be used in the evaluation process for Brasov County. The lack of available data for most part of the ETIS indicators was a provocation which determined a major reconfiguration of the system of indicators, based on the available data in Brasov County. The project is in progress, the database being now created.

In 2016, an improved version of the ETIS Toolkit has been released by the European Commission [2]. It is restructured on 43 core indicators and several potential supplementary indicators. This new version of the ETIS Toolkit is based on practise regarding the implementation attempts during the last three years and it actually brings supplementary flexibility to the ETIS system of indicators, therefore increasing the potential of its implementation.

THE EUROPEAN TOURISM INDICATOR SYSTEM (ETIS)

As most of the recent tourism policies and initiatives of the European Commission show, a key belief of EU experts is that sustainable development is an important generator for competitive advantage of European tourism businesses and destinations. A short chronological review of the sustainability issues included in the European tourism policies has recently been presented in the tourism literature [3]. One of the main targets within the most recent Tourism Policy adopted by the EU Commission in 2010 is related to transforming Europe into a "collection of sustainable and high-quality destinations" [4]. Being a key concern at EU level, the sustainable development of tourism has been supported by concrete actions and initiatives. Several projects received

European financial support in this direction and also special proposals have been included within the most recent EU Tourism Policy. Within this document, one of the four main directions for action expressly addresses European tourist destinations, "emphasizing the importance of consolidating European Union's image and profile as a sustainable macro-tourist destination". Sustainability is a key advantage of European tourism; most of the best practice cases can be found in Europe. And still, there is much more to do in a new context created by the launch of the European circular economy strategy or the European collaborative strategy. The most recent policy adopted at EU level is a very practical one, proposing concrete actions to be taken by different stakeholders. Developing an authentic system of indicators for the sustainable management of tourist destinations is a successful example in this direction [3]. Starting 2011, the European Commission began to focus on this action too and, at the beginning of 2013, the European Tourism System of Indicators (ETIS) for sustainable destinations was launched. The ETIS system of indicators has recently been categorized as a useful European tool to support the efficient management of tourist destinations [5]. According to another theory, ETIS is an evaluation tool which can be developed into a profiling and benchmarking tool for European destinations [6, 7].

Conceiving a set of sustainable development indicators "numerically measurable, useful, easy to interpret, easy to compare between heterogeneous European destinations, objective, directed at improvement and reliable" [8] was a big challenge for European experts involved into the ETIS Project. Finally, the 2013 ETIS tool consists of 67 sustainability related indicators defined as a useful tool "to track destination performance and make better management decisions, as well as influence adequate policies" [1]. ETIS is both a monitoring system and a benchmarking tool for tourist destinations willing to evaluate and understand their profile from the sustainability perspective. Just like other EU projects or initiatives in this field, ETIS can be used voluntarily by European destinations and it has the great advantage of being flexible, according to the specific needs and traits of each destination. Two testing phases took place in order to improve the initial indicators.

The 67 indicators, which are either core indicators or optional indicators, were grouped into four sections:

1. Destination Management Indicators (9) grouped into four categories:
    1.1. Sustainable Tourism Public Policy (1 core and 2 optional)
    1.2. Sustainable Tourism Management in Tourism Enterprises (1 core and 1 optional)
    1.3. Customer Satisfaction (1 core and 1 optional)
    1.4. Information and Communication (1 core and 1 optional)
2. Economic Value Indicators (18) grouped into five categories:
    2.1. Tourism Flow (volume & value) at Destination (2 core and 3 optional)
    2.2. Tourism Enterprise(s) Performance (2 core and 3 optional)
    2.3. Quantity and Quality of Employment (1 core and 2 optional)
    2.4. Safety and Health (1 core and 1 optional)
    2.5. Tourism Supply Chain (1 core and 2 optional)
3. Social and Cultural Impact Indicators (14) grouped into four categories:
    3.1. Community/Social Impact (1 core and 3 optional)
    3.2. Gender Equality (1 core and 2 optional)
    3.3. Equality/Accessibility (2 core and 2 optional)

3.4. Protecting and Enhancing Cultural Heritage, Local Identity and Assets (1 core and 1 optional)

4. Environmental Impact Indicators (26) grouped into nine categories:

4.1. Reducing Transport Impact (2 core and 2 optional)
4.2. Climate Change (1 core and 2 optional)
4.3. Solid Waste Management (2 core and 1 optional)
4.4. Sewage Treatment (1 core and 1 optional)
4.5. Water Management (1 core and 3 optional)
4.6. Energy Usage (1 core and 2 optional)
4.7. Landscape and Biodiversity Protection (1 core and 2 optional)
4.8. Light and Noise Management (1 core and 1 optional)
4.9. Bathing Water Quality (1 core and 1 optional).

After completion, the system of 67 indicators was tested in more than 200 European destinations, during two pilot testing phases. In 2016, a second version of ETIS has been released based on the experience gained during testing the 2013 version of ETIS. The system was changed and it comprises now 43 core indicators and several supplementary indicators, provided only as a possibility. In this context, the ETIS system is much more flexible. It also puts an accent on accessibility.

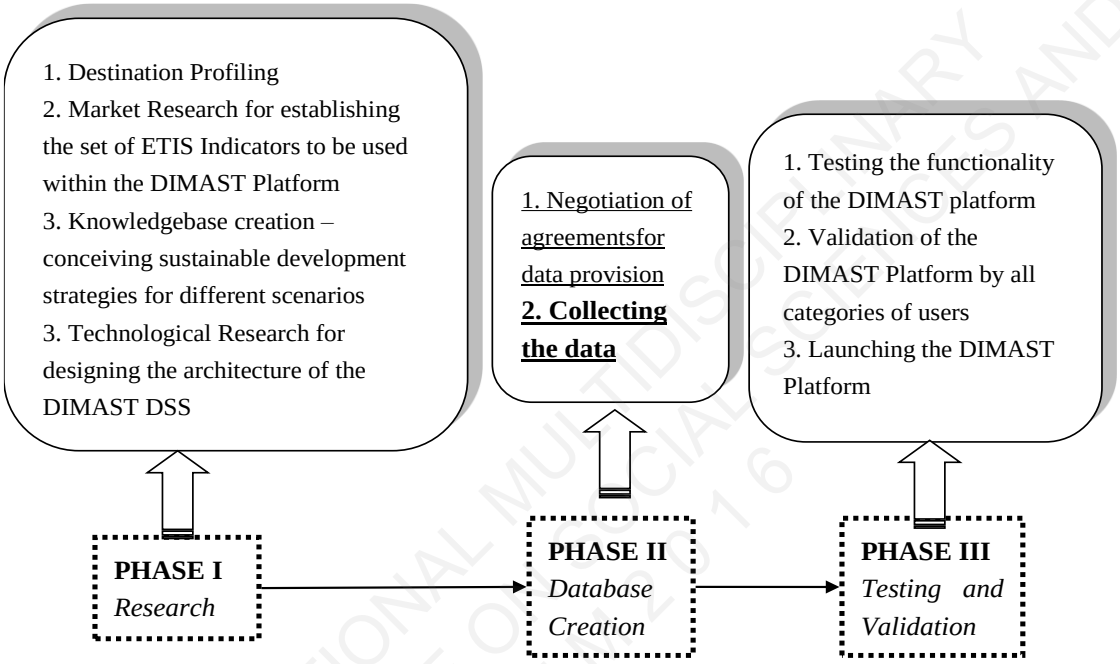
THE DESTINATION INTELLIGENT MANAGEMENT FOR SUSTAINABLE TOURISM (DIMAST) PROJECT

Planning and managing tourist destinations should always start with a comprehensive evaluation, based on appropriate sets of indicators. After the first ETIS toolkit was launched, the possibility to use it in an innovative way within destination management started to preoccupy a team of researchers from Transilvania University in Brasov, Romania. Brasov is a one of the leading tourist destinations in Romania and it also has one of the top Destination Management Organizations in Romania [9]. The local DMO has been very active during the last ten years and one of its major advantages relies on a great cooperation with all local stakeholders. However, it is facing a major difficulty related to the fact that it only has two employees, who are overwhelmed by an enormous quantity of responsibilities. Some major initiatives and successful projects related to Brasov refer to the sustainable development, such as transforming Brasov into a smart city etc. [9]. In this context, the DIMAST Research Project (Destination Intelligent Management for Sustainable Tourism) has been formulated with the main aim of creating an innovative Business Intelligence tool, DSS type (Decision Support System), in order to help the local DMO make more thorough and informed decisions related to the sustainable development of the entire county, based on the ETIS system of indicators [10]. In 2001, European experts from the Working Group on Improving the Quality of Tourist Products formulated a pioneering and revolutionary proposal which was truly inspirational for the DIMAST Project: “EU Member States should develop a standardized system for the measure of the most important indicators. Moreover, software tools could also be developed and distributed that are useful for the measure, record and publication of the indicators. These procedures would be of great utility for the development of benchmarking techniques” [8].

The DIMAST Project is a collaborative research initiative which groups seven partners: the coordinator is Transilvania University from Brasov, the DSS developer is a local

software enterprise, SC BitSoftware SRL, and the other partners are the local DMO, the Association for Development and Promotion of Tourism in Brasov, the Association for Sustainable Development form Brasov County, the National Institute for Research in Tourism, and two local tourism enterprises – Ambient Hotel and Callia Cruise travel agency [11].

Figure 1: The three main phases of the DIMAST Project



At present, the DIMAST Project is in its second Phase, as depicted in the Figure 1 above [12], data being collected for the indicators which have been included in the project. Conceiving the system of indicators for the DIMAST Project, based on the ETIS system, was a much more challenging task than the research team imagined due to the fact that data was not available for the most part of the ETIS Indicators. Therefore, the major milestone within the DIMAST Project was to conceive the system of indicators suitable for Brasov tourist destination for which there is available data. The availability of data for the ETIS indicators proved to be also a major problem for most of the destinations involved in the two testing phases.

THE DIMAST SYSTEM OF INDICATORS

The first step in the process of deciding which ETIS indicators are suitable for Brasov tourist destination was to organize two qualitative research phases with specialists in the field of tourism [13, 9, 11]. Following the research phases, a set of indicators specific for Brasov tourist destination has been conceived. The next step was to find data for the selected indicators. At this precise moment, important barriers showed up related to the impossibility to find available data for most of the selected ETIS indicators. A comprehensive research phase was organized in order to identify the exact ETIS

indicators for which there is continuously available data and to add supplementary indicators which respect the ETIS principles.

The following system of indicators resulted which includes 12 ETIS indicators and 18 supplementary indicators. Accordingly, the DIMAST set of indicators which will be used to monitor the sustainable development of Brasov County is composed of 30 indicators. These are the following:

1. Destination Management Indicators:

1.1. Sustainable Tourism Public Policy

- *Percentage of the destination represented by a destination management organization (ETIS - A.1.1.2)*

1.3. Customer Satisfaction

- *Percentage of visitors that are satisfied with their overall experience in the destination (ETIS - A.3.1)*

1.4. Information and Communication

- Percentage of destinations within Brasov County with own webpage

2. Economic Value Indicators:

2.1. Tourism Flow (volume & value) at Destination

- *Number of tourist nights per month (ETIS - B.1.1)*
- Tourist arrivals by country
- Number of spectators - artistic performances
- Number of visitors in museums
- Socio-cultural expenditures

2.2. Tourism Enterprise(s) Performance

- *Average length of stay of tourists (nights) (ETIS - B.2.1)*
- *Occupancy rate in commercial accommodation per month and average for the year (ETIS - B.2.2)*
- Weight of hotels and restaurants sales within local industry
- Weight of gross investments in hotels and restaurants within local industry
- Weight of net investments in hotels and restaurants within local industry

2.3. Quantity and Quality of Employment

- Direct tourism employment as percentage of total employment (ETIS - B.3.1)
- Number of active hotels and restaurants by number of employees
- Average gross salary income in hotels and restaurants

2.4. Safety and Health

- Crime rate
- Number of persons injured in car accidents

3. Social and Cultural Impact Indicators:

3.1. Community/Social Impact (1 core and 3 optional)

- *Number of tourists/visitors per 100 residents (ETIS - C.1.1)*
- *Number of beds available in commercial visitor accommodation per 100 residents (ETIS - C.1.1.2)*
- Number of nights per 100 residents

3.3. Equality/Accessibility

- *Percentage of commercial accommodation with rooms accessible to people with disabilities and/or participating in recognized accessibility schemes (ETIS - C.3.1)*

3.4. Protecting and Enhancing Cultural Heritage, Local Identity and Assets

- *Percentage of the destination's biggest events that are focused on traditional/local culture and assets (ETIS - C.4.1.2)*

4. Environmental Impact Indicators:
4.2. Climate Change
- Air emissions accounts
- Surface area covered with forests
- Green surface area in urban environment
- Built surface area
4.3. Solid Waste Management
- *Waste volume produced by destination (tones per resident per year or per month) – ETIS - D.3.1)*
4.5. Water Management
- Average drinking water use/ inhabitant
4.7. Landscape and Biodiversity Protection
- *Percentage of destination (area in km2) that is designated for protection (ETIS - D.7.1)*

At present, the DIMAST Database is being created on the frame presented above. The DIMAST DSS will further use the MicroStrategy Business Intelligence Software for data analytics.

CONCLUSION

At EU level, tourism sustainability is considered a major trigger for obtaining competitive advantage. In this context, the European Commission focused on creating useful tools to support the sustainable development of both tourism enterprises and tourist destinations in Europe. The ETIS system of indicators is a successful example in this direction, as an important tool for monitoring the sustainability related performances of tourist destinations. The first version of the ETIS toolkit was released in 2013 and two testing phases followed. Based on the information obtained during the testing of the 67 indicators, a new version of the ETIS toolkit has been released in 2016.

Based on the fact that since 2001 the EU Commission has continuously encouraged the innovative use of information & communication technology within tourism, combined with the launching of the ETIS toolkit in 2013, the DIMAST Project developed. Its main aim is to create an innovative Business Intelligence tool for supporting tourist destinations willing to develop in a sustainable way, based on ETIS Indicators. The most important challenge within DIMAST Project was to identify indicators for which there is available data in Brasov. Only 12 of the initial 67 ETIS Indicators can therefore be used within the DIMAST Project, due to the lack of available data. Additional indicators were identified and included within the DIMAST indicators framework. New ETIS toolkit released in 2016 opens new directions for future research, in order to accordingly tailor the DIMAST system of indicators.

ACKNOWLEDGEMENTS

The research presented in this paper is supported by the Romanian Executive Unit for Financing Higher Education, Research, Development and Innovation, the Joint Applied Research Projects PN-II-PT-PCCA-2013-4, under the contract no. 324/2014.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION MULTIDISCIPLINARY CONSIDERATIONS IN SOCIAL SCIENCES AND ARTS

REFERENCES

[1] European Commission, European Tourism Indicator System TOOLKIT For Sustainable Destinations, Luxembourg: Publications Office of the EU, 2013, file:///C:/Users/Admin/Downloads/NB3213182ENC_002.pdf

[2] European Commission, The European Tourism Indicator System. ETIS toolkit for sustainable destination management, Luxembourg: Publications Office of the EU, 2016, file:///C:/Users/Admin/Downloads/ETIS%20toolkit%202016%20150316%20(1).pdf

[3] Cismaru, L., Dincă G., Dincă M., EU Initiatives Regarding Tourist Destinations'Sustainable Development, Annals of the Constantin Brâncuși University of Târgu Jiu, Economy Series, Special Issue/2015 Information Society and Sustainable Development, IInd Edition, 2015, ISSN 2344-3685, pp.43-50

[4] European Commission, Europe, the world's No 1 tourist destination – a new political framework for tourism in Europe, Brussels, 2010, COM 352 final

[5] Cismaru, L., European Tools for Managing and Monitoring the Sustainable Development of Tourist Destinations, Review of General Management, 21(1), 2015, pp.101-114

[6] Cismaru, L., Ispas, A., Improving the profile of the European tourist destinations through the European tourism indicators system, Bulletin of the Transylvania University of Brasov, Vol.8(57) No.1, 2015, Series V, Economic Sciences, ISSN 2065-2194, pp.87-95

[7] Cismaru, L., Brătucu, G., European benchmarking tools for sustainable destinations, Proceedings of the 2nd International Multidisciplinary Scientific Conference on Social Sciences and Arts SGEM 2015, Book 2, Volume III (volum indexat ISI), ISBN 978-619-7105-48-3, pp.259-267;

[8] European Commission, Rapporteur: Martin Valles, D., Improving the quality of tourist products, Final report of Working Group C, June 2001;

[9] Brătucu, G., Ispas, A., Cismaru, L., Chițu, I., Albu, R., Dincă, G., Baltescu, C., Foris, D., Simon, T., Tudorache, D., Musteata Pavel, M., Oltean D., Demeter, T., Chicomban, M., Gliga, I., Județul Brașov. Profilul destinației turistice, Editura Universității Transilvania din Brașov, 2015, ISBN 978-606-19-0551-5

[10] www.dimast.eu

[11] Brătucu, G., Cismaru, L., Dinca, G., Ispas, A., Chitu, I., Albu, R., Foris, D., Foris, T., Baltescu, C., Demeter, T., Tudorache, D., Musteata Pavel, M., Sistemul european de indicatori pentru turism (ETIS) aplicabil în vederea dezvoltării durabile a destinației turistice județul Brașov, Editura Universității Transilvania din Brașov, 2015, ISBN 978-606-19-0550-8

[12] Iunius, R.F., Cismaru, L., Foris, D., Raising Competitiveness for Tourist Destinations through Information Technologies within the newest Tourism Action Framework proposed by the European Commission, Sustainability, 2015, 7(9), pp.12891-12909

[13] Brătucu, G., Chitu, I.B., Demeter, T., Adapting the European tourism indicators system to Braşov – tourist destination, Bulletin of the Transilvania University of Braşov Series V: Economic Sciences, Vol. 8 (57) No. 2 – 2015, pp.157-162

AIR TRANSPORT DEMAND AND POPULATION: CASE STUDY FROM GERMANY

Ing. Lenka Heřmánková

Assoc. Prof. Vlastimil Melichar

University of Pardubice, Jan Perner Transport Faculty, **Czech Republic**

ABSTRACT

Air transport demand is highly monitored determinant since its knowledge is important for transport planners, airlines, airports and aircraft manufacturers as well. In the present paper we analyzed whether there is a causal relationship between air transport demand and population in Germany. The dependence was examined by correlation analysis of residues which guarantees to reveal the true relationship between any determinants. However, it is essential to realize that the population is very extensive term and brings together groups of people with different characteristics. Therefore not only the influence of the population as a whole was examined, but the population was for research purpose divided into groups according to the economic activity of citizens. The relationship between population and air transport demand was explored in Germany as a whole and also separately for its districts. Although previous research has proven the relationship between the population and air transport demand, in this case is shown that air transport demand depends much more on number of inactive citizens than on the whole population. It was also discovered that the demand is more dependent on the total population of the country than on the number of inhabitants in individual districts.

Keywords: air transport demand, population, correlation analysis, economic activity

INTRODUCTION

In the field of air transport there are many studies that have been trying to find some kind of relationship between air transport demand and other determinants since air transport demand is important parameter for various subjects such as transport planners, airlines, airports and also aircraft manufacturers.

In the past the literature has defined basic determinants of air travel demand. These factors can be divided into two groups. Factors that airlines can not affect are called geo-economic factors. These indicators are determined by the economic activity and geographical or specific local conditions of the transportation area [1]. Geo-economic factors can be further divided into activity and locational factors. The most common activity-related indicators are income and population [2], [3], [4]. Researchers have proven relationship between air traffic demand and economic growth represented by the gross domestic product [5], [6]. Some authors also confirmed gross domestic product per capita as other determinant [4], [7], [8]. Total consumption expenditure is the last of activity factors that is included in this group of determinants [2], [9]. A few studies concerns about this theme much more and also consider determinants like percentage of full university degree holders and the percentage of full-time employees [10]. Employment composition and characteristics of the regional productive structure are also important determinants [11], [12]. The most common location factor is distance [1], [7]. Second group of factors includes service-related factors, determined by quality and

price of the service that passengers have to pay. These determinants are completely given by the airline. Studies have also confirmed three following determinants in this group: frequency of departures, load factor and aircraft size or technology [1], [7].

METHODS AND DATA

Many studies have demonstrated the relationship between the population in the researched area and air transport demand. These studies usually examine the influence of the population as a whole and do not address its individual parts. It is essential to realize that the population is very broad term and brings together groups of people with different characteristics. In this paper we go into more detail and examine whether the size of population and also number of employed, unemployed or inactive people have influence on the transport demand and therefore on the transportation performances in air transport.

For the verification of the theory that size of population and also its composition have influence on air transport demand is used correlation analysis since it allows find and validate the relationship between various indicators. Therefore the dependence of the time series is examined it is necessary to be aware of the fact that correlation of real values may indicate only the apparent correlation of time series. To confirm the real relationship of determinants is necessary to do the correlation analysis of residues. Residues can be calculated in various ways, per instance by exponential smoothing, given by the following equation:

$$Y_{n-k} = (1-\alpha) \times y_{n-k} + \alpha \times Y_{n-k-1} \tag{1}$$

where:

α… equalization constant
n… time point representing the observation in the present tense
k… age of observations from the view point of time n

After the residues were calculated it was necessary to approve its independence by the Durbin-Watson autocorrelation test and its random arrangement by the Sign test or Turning point test. After verifying the independence and random assortment of residues the correlation can be made to confirm or disprove a real correlation between the time series. To measure the tightness of dependence between variables is used correlation coefficient:

$$r_{12} = \frac{\sum x_{1i} x_{2i} - \sum x_{1i} \sum x_{2i}}{\sqrt{[n\sum x_{1i}^2 - (\sum x_{1i})^2] \times [n\sum x_{2i}^2 - (\sum x_{2i})^2]}} \tag{2}$$

where:

n…number of pairs of data
x_1, x_2 … examined variables

If the value of coefficient equals to 1, direct linear relationship exists between variables. Value minus 1 indicates indirect linear relationship. Linear independence of variables exists if the correlation coefficient is zero.

The last step is to do hypothesis testing on the correlation coefficient, because high value of the correlation coefficient does not automatically imply a causal relationship between the variables [13]. The test statistic is:

$$t = \frac{r_{12}}{\sqrt{1 - r_{12}^2}} \times \sqrt{n-2} \tag{3}$$

where:

r_{12} ... correlation coefficient

n…number of pairs of data

CALCULATIONS

The case study deals with the influence of population structure on the air transport demand in Germany. To verify the influence were used data of all airports in Germany that published their reports about transportation performances in years 2005-2014. The data were obtained from 23 airports of the total 27 airports located in Germany. The relationship between population structure and air transport demand was examined for whole Germany and also separately for regions.

In the following picture there are airports in all regions in Germany. Crossed out are the airports for which data were not obtained in examined time period [14].



Figure 1 – Airports in Germany

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

Calculations in whole Germany

First, the influence of population structure was examined in Germany as a whole. The residues were tested by the Durbin-Watson test to prove its independence and by the Sign test or Turning point test to prove its random arrangement. In the following table are only the airports that meet the requirement of independence and random arrangement of residues.

The critical value of test statistic *t* is given by the formula $|t| > t_{1-\alpha/2}$. The critical value looked up in the statistical tables is 2,365 for all calculations. If the value of the test statistic *t* is outside the critical area (-2,365; 2,365) the dependence of the considered factors is confirmed.

Table 1 – Correlation coefficients and test statistics – population structure in Germany

	Population		**Employed**		**Unemployed**		**Inactive**	
	r	**t**	r	**t**	r	**t**	r	**t**
Berlin-Tegel	-0,51	-1,59	-0,40	-1,15	0,54	1,70	-0,56	-1,78
Hamburg	0,19	0,51	0,20	0,53	-0,10	-0,27	-0,59	-1,93
München	-0,30	-0,83	-0,03	-0,07	0,19	0,50	-0,88	-4,93
Frankfurt	-0,52	-1,60	-0,62	-2,09	0,46	1,35	-0,17	-0,46
Düsseldorf	-0,27	-0,73	0,21	0,56	-0,10	-0,26	-0,72	-2,72
Friedrichshafen	0,59	1,95	0,63	2,14	-0,56	-1,78	-0,55	-1,76
Stuttgart	0,25	0,68	0,05	0,13	0,06	0,16	-0,64	-2,22
Karlsruhe/Baden-Baden	0,03	0,09	0,51	1,57	-0,42	-1,21	-0,56	-1,78
Nürnberg	0,37	1,06	0,71	2,70	-0,61	-2,05	-0,74	-2,94
Berlin-Schönefeld	0,63	2,13	0,77	3,14	-0,75	-3,04	-0,28	-0,76
Bremen	0,34	0,96	0,45	1,34	-0,33	-0,93	-0,38	-1,08
Hannover	0,16	0,44	-0,02	-0,05	0,13	0,34	-0,65	-2,28
Münster/Osnabrück	0,34	0,97	0,49	1,50	-0,41	-1,19	-0,66	-2,30
Paderborn/Lippstadt	0,00	0,01	0,35	1,00	-0,25	-0,69	-0,60	-2,00
Niederrhein	0,08	0,20	0,55	1,74	-0,56	-1,78	0,03	0,09
Köln/Bonn	0,45	1,33	0,66	2,30	-0,54	-1,71	-0,70	-2,60
Hahn	0,78	3,29	0,46	1,35	-0,45	-1,32	-0,23	-0,63
Lübeck	0,51	1,57	0,40	1,17	-0,49	-1,49	0,20	0,54
Rostock-Laage	-0,37	-1,06	0,44	1,29	-0,33	-0,92	-0,74	-2,89

According to the Table 1 was proven direct proportion between following factors:

- population and number of transported passengers at Hahn airport,
- number of employed people and number of transported passengers at Nürnberg and Berlin-Schönefeld airport.

According to the Table 1 was also proven inverse proportion between following factors:

- number of unemployed people and number of transported passengers at Berlin-Schönefeld airport,
- number of inactive people and number of transported passengers at München, Düsseldorf, Nürnberg and Köln/Bonn airport.

SCIENTIFIC CONFERENCE SGEM 2016 INTERNATIONAL MULTIDISCIPLINARY

Calculations in regions

Next step was to examine the influence of population structure on transportation performances in all regions in Germany. In each case was examined the population structure of region and transportation performances of airports belonging to this region. The testing is based on the same testing principles as it was in a previous case. In the following table are only the airports and categories of citizens that meet the requirement of independence and random arrangement of residues.

Table 1 – Correlation coefficients and test statistics – population structure in regions

		Population		**Employed**		**Unemployed**		**Inactive**	
		r	**t**	r	**t**	r	**t**	r	**t**
Baden-Württemberg	Friedrichshafen	0,67	2,36	0,36	1,01	-0,36	-1,03	0,48	1,45
	Stuttgart	0,07	0,19	0,73	2,80	-0,67	-2,39	-0,02	-0,04
	Karlsruhe / Baden-Baden	0,27	0,74	-0,12	-0,31	-0,45	-1,33	0,14	0,38
Bayern	München	-0,37	-1,04	0,57	1,85	-0,82	-3,74	-0,04	-0,11
	Nürnberg	-0,27	-0,74	0,37	1,05	-0,50	-1,54	-0,39	-1,12
Berlin	Berlin-Schönefeld	.	.	0,12	0,31	-0,10	-0,26	.	.
	Berlin-Tegel	.	.	-0,39	-1,12	-0,25	-0,69	.	.
Bremen	Bremen	0,37	1,05	0,50	1,51	-0,38	-1,08	0,18	0,49
Hamburg	Hamburg	.	.	0,02	0,06	0,25	0,67	-0,12	-0,32
Hessen	Frankfurt	-0,49	-1,48	0,02	0,05	-0,08	-0,22	-0,21	-0,57
Mecklenburg-Vorpommern	Rostock-Laage	-0,64	-2,22	0,09	0,24	-0,52	-1,62	-0,07	-0,18
Niedersachsen	Hannover	0,18	0,49	.	.	-0,52	-1,59	0,09	0,24
Nordrhein-Westfalen	Münster / Osnabrück	0,27	0,74	0,67	2,39	-0,44	-1,31	-0,39	-1,13
	Paderborn / Lippstadt	-0,04	-0,10	0,59	1,91	-0,37	-1,06	-0,25	-0,69
	Niederrhein	-0,07	-0,19	-0,55	-1,76	0,04	0,11	0,09	0,23
	Düsseldorf	-0,31	-0,87	0,51	1,57	-0,52	-1,61	-0,49	-1,48
	Köln/Bonn	0,36	1,0	0,57	1,86	-0,57	-1,85	-0,18	-0,50
Rheinland-Pfalz	Hahn	.	.	0,69	2,49	-0,42	-1,23	-0,53	-1,65
Schleswig-Holstein	Lübeck	0,62	2,10	0,13	0,36	0,24	0,66	-0,12	-0,32

According to the Table 2 was proven direct proportion between number of employed people in Baden-Württemberg region and number of transported passengers at Stuttgart airport, number of employed people in Nordrhein-Westfalen region and number of transported passengers at Münster/Osnabrück airport and number of employed people in Rheinland-Pfalz region and number of transported passengers at Hahn airport.

Inverse proportion was proven between number of unemployed people in Baden-Württemberg region and number of transported passengers at Stuttgart airport and number of unemployed people in Bayern region and number of transported passengers at München airport.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC AND ARTS

CONCLUSION

The paper deals with issue of air transport demand and its sensitivity to population structure and its changes in last decade. The paper analyzed various population groups according to the economic activity of citizens such as employed, unemployed and inactive citizens and also the influence of the whole population on the air transport demand. The relationship was explored in Germany as a whole and also separately for its districts. Previous research has proven the relationship between the size of population and air transport demand but in this case is shown that air transport demand depends much more on specific groups of population. The dependence of demand on the total population was proven only in one case compared to twelve cases of dependence between transportation performances and number of employed, unemployed or inactive citizens. More cases of dependence were found by exploration of the total population structure of the country than by exploration of the population structure in individual districts. The paper has shown that size of the population is not as important indicator as it might seem and that is very important to go into more detail with every examined parameter to reveal important relationship between indicators.

REFERENCES

[1] JORGE-CALDERÓN, J.D. A demand model for scheduled airline services on international European routes. *Journal of Air Transport Management.* 1997, Vol. 3, No. 1, p. 23-35.

[2] ABED, S.Y. et al. An econometric analysis of international air travel demand in Saudi Arabia. *Journal of Air Transport Management.* 2001, Vol. 7, No. 3, p. 143-148.

[3] CHI, J. and BAEK, J. Dynamic relationship between air transport demand and economic growth in the United States: a new look. *Transport Policy.* 2013, Vol. 29, p. 257-260.

[4] VALDES, V. Determinants of air travel demand in Middle Income Countries. *Journal of Air Transport Management.* 2015, 42, p. 75-84.

[5] SURYANI, E. et al. Air Passenger demand forecasting and passenger terminal capacity expansion: A system dynamics framework. *Expert Systems with Applications*. 2010, 37, p. 2324-2339.

[6] HU, Y. et al. Domestic air passenger traffic and economic growth in China: Evidence from heterogeneous panel models. *Journal of Air Transport Management.* 2015, 42, p. 95-100.

[7] SIVRIKAYA, O. and TUNÇ, E. Demand forecasting for domestic air transportation in Turkey. *The Open Transportation Journal*, 2013, 7, p. 20-26.

[8] PROFILLIDIS, V. and BOTZORIS, G. Air passenger transport and economic activity. *Journal of Air Transport Management.* 2015, 49, p. 23-27.

[9] BAFAIL, A.O. et al. The determinants of domestic air travel demand in the Kingdom of Saudi Arabia. *Journal of Air Transportation World Wide. 2000,* Vol. 5, No. 2, p. 72-86.

[10] RENDARAJU, V.R. and THAMIZH-ARASAN, V. Modelling for air travel demand. *Journal of Transportation Engineering*. 1992, Vol. 118, No. 3, p. 371-380.
[11] BRUECKNER, J.K. A note on the determinants of metropolitan airline traffic. *International Journal of Transport Economics*. 1985, Vol. 12, No. 2, p. 175-184.
[12] FLEMING, K. and GHOBRIAL, A. An analysis of the determinants of regional air travel demand. *Transportation Planning and Technology*. 1994, Vol. 18, No. 1, p. 37-44.
[13] HINDLS, R. et al. *Statistics for Economists*. 8th edition. Praque: Professional Publishing, 2007. ISBN 978-80-86946-43-6.
[14] Statistisches Bundesamt. *Verkehr: Luftverkehr auf Hauptverkehrsflughäfen.* Wiesbaden, 2016, 517 p.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
SGEM2016

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

AIRPORT COMPETITION IN THE CZECH REPUBLIC AND NEIGHBORING AREAS

Ing. Lenka Heřmánková
Assoc. Prof. Vlastimil Melichar

University of Pardubice, Jan Perner Transport Faculty, **Czech Republic**

ABSTRACT

Competition between airports increased rapidly since the deregulation of the intra-European air transport market in 1997. Currently the passengers have much wider choice to select the departure airport and route as well, which leads to airport substitution. Phenomenon, that airports should take into consider is called Airport traffic leakage. It represents the situation when decrease of the volume of passenger occurs on small airports at the expense of large airports with extensive services. The aim of this paper is to describe the competitive position of airports in the Czech Republic and its neighboring areas by using various analyzes. Commonly used method how to measure competition between airports is to create lists of airports ranked by total number of transported passengers or cargo and number of aircraft movements at the airport. More sophisticated method used in the paper is based on geographical overlaps between airport catchment areas by using isochrones maps. Isochrones maps gave us a rough estimation of what airports in the country might compete with each other based on travel times between airports. To validate the dependence between transportation performances of various airports was also used correlation analysis because it allowed verification of the dependence on the basis of numerical calculations, and therefore gave more reliable results than other methods.

Keywords: airport competition, catchment areas, correlation analysis, airport traffic leakage

INTRODUCTION

Up to the late 1990s the European air transport markets were regulated through bilateral air service agreements. This meant that most routes were operated only by one or two carriers who were constrained in terms of capacity and pricing. In 1987 the first liberalization package was adopted and European markets liberalization has started. Finally, the adoption of the third liberalization package in 1997 led to the creation of a single European aviation market, so from this moment on any EU carrier was allowed to operate from any EU country and beyond. Deregulation led to more effective competition and operations, which resulted in lower prices and increased number of flight operations [1].

The competition between airports and also competition between airlines is frequently discussed issue. To describe the competitive position of airports are used lists of airports ranked by total number of transported passengers or cargo and number of aircraft movements at the airport. These indicators are of course relevant, but as literature reminds, it is also important to take into account diversity of airport networks and offered frequencies of flights [2].

Sophisticated method to describe the competitive position of airports is based on geographical overlaps between airport catchment areas by creating isochrones maps.

Isochrones maps give a rough estimation of what airports in the country might compete with each other based on travel times between airports. Various passenger preferences and traffic types were considered and catchment areas of up to 2 hours driving time from the airport were created [3]. The choice between departure airports is based on flight characteristics, especially airfare and frequency of suitable flights, but also on airport characteristics as access time of the airport and passenger charge [4]. It was also proven that type of operated aircraft and passenger´s travel purpose are factors that should be taken into account [5], [6]. In certain cases the choice of airport could be also made according to loyalty to some particular airlines or specific preferences for certain airports [2]. Important phenomenon that should be also mentioned is the *airport* or *traffic leakage*. That means that travelers in small, single-airport regions avoid using their local or nearest airports and prefer to use the more distant but larger metropolitan airports. This may cause significant reduce in number of passengers on local airports [7], [8]. *Traffic-shadow effect* is similar phenomenon, which describes the decrease of the volume of passenger and also cargo traffic on small airports at the expense of large airports [9]. Applied on conditions of the Czech Republic in means, that Prague airport would probably handle more passengers or cargo at the expense of other neighboring airports.

AIRPORTS IN THE CZECH REPUBLIC

For the purposes of the paper we consider only five out of ninety airports in the Czech Republic. These airports are the biggest airports in the country and they are also only civil airports designated for international traffic in the Czech Republic. The following map shows the location of the airports.



Figure 1 – Examined airports in the Czech Republic

METHODS USED TO EXAMINE THE COMPETITION

There are several methods that might be used to examine the competition between airports. The first two of them are commonly used and the last one is given by authors.

RANKED LISTS

In the introduction was mentioned the basic and often used method to examine the competition between airports. To describe the competitive position is possible to make lists of airports ranked by total transportation performances. For the purposes of the paper was created list of transportation performances of examined airport in time period 2000-2015.

Table 1 – Transportation performances of examined airports

Passengers		**Cargo** (t)		**Aircraft movements**	
Prague	161 593 063	***Prague***	726 434 880	***Prague***	2 126 084
Brno	5 713 190	***Brno***	66 524	***Brno***	354 045
Ostrava	3 764 143	***Ostrava***	27 834	***Ostrava***	192 219
Pardubice	1 083 550	***Pardubice***	4 741	***Karlovy Vary***	88 692
Karlovy Vary	927 806			***Pardubice***	20 593

From the table 1 is obvious that three biggest airports according to the transportation performances are Prague, Brno and Ostrava. The least used airports are Karlovy Vary, which do not provide cargo transport and Pardubice.

AIRPORT CATCHMENT AREAS

Appropriate driving time from the airport was by the researchers established at two hours, hence for the purposes of examination in this paper was also used this time period. The catchment areas were identified by the special isochronous application [10].





Figures 2 and 3 – Catchment areas of Prague and Brno airport





Figures 4 and 5 – Catchment areas of Ostrava and Pardubice airport



Figure 6 – Catchment area of Karlovy Vary airport

Based on the upper mentioned figures is possible to assume which airports might compete with each other in the Czech Republic and also abroad, because the catchment areas also consider airports in surrounding countries as a possible competitor. Very strong competitor for airports in Karlovy Vary and Pardubice is the airport in Prague. This assumption is also justified if it is taken into consider importance, transportation performances and quality of Prague airport as a main airport in the country. Competition for Prague might be airport in Dresden. This airport is just slightly outside of Prague catchment area and so it should also be taken into consider. The airport in Brno might have three competitors: Ostrava, Vienna and Bratislava. For the airport in Ostrava might be competitive airports Brno and Katowice. The assumed competition based on the catchment areas will be further proven by the correlation analysis.

CORRELATION ANALYSIS

Previous methods were based on comparison of values of transportation performances and approximate estimations of competitive positions according to the driving distance to other airports, which might not lead to the correct and reliable result. The use of correlation analysis allows verification of dependence on the basis of numerical calculations, and therefore gives more reliable results.

Since the dependence of the time series is examined, it is necessary to be aware of the fact that correlation of real values may indicate only the apparent correlation of time series. To confirm the real relationship of determinants was necessary to do the correlation analysis of residues, which were calculated by the exponential smoothing. After the residues were calculated it was necessary to approve its independence by the Durbin-Watson autocorrelation test and its random arrangement by the Sign test or Turning point test. After verifying the independence and random assortment of residues the correlation could be made to confirm or disprove a real correlation between the time series [11]. To measure the tightness of dependence between variables is used correlation coefficient:

$$r_{12} = \frac{\sum x_{1i} x_{2i} - \sum x_{1i} \sum x_{2i}}{\sqrt{[n\sum x_{1i}^2 - (\sum x_{1i})^2] \times [n\sum x_{2i}^2 - (\sum x_{2i})^2]}}$$

where:

n … number of pairs of data

x_1, x_2 … examined variables

If the coefficient equals to 1, direct linear relationship exists between variables. Value of the coefficient minus 1 indicates indirect linear relationship. Linear independence of variables exists if the correlation coefficient is zero.
The last step was to do hypothesis testing of the correlation coefficient, because its high value does not automatically imply a causal relationship between the variables [11]. The test statistic is:

$$t = \frac{r_{12}}{\sqrt{1 - r_{12}^2}} \times \sqrt{n - 2}$$

where:

r_{12} ... correlation coefficient
n … number of pairs of data

The influence of transportation performances of airports was gradually examined on the number of passengers, the amount of handled cargo and number of aircraft movements.

Number of passengers

After the residues were calculated by the exponential smoothing it was possible to calculate the correlation coefficients of residues, given by the following correlation matrix.

	Prague	Ostrava	Pardubice	Brno	Karlovy Vary
Ostrava	0,73	...	...	...	...
Pardubice	−0,19	0,13	...	...	...
Brno	0,59	0,54	0,05	...	...
Karlovy Vary	−0,18	−0,13	0,49	0,56	...
Vienna	0,36	0,56	0,28	0,66	0,47
Bratislava	0,90	0,86	0,07	0,58	−0,14
Katowice	0,82	0,87	−0,12	0,54	−0,10
Dresden	0,16	0,19	0,13	0,73	0,67

Figure 7 – Correlation matrix of passengers

Next step was to do hypothesis testing of the correlation coefficients, mentioned in previous figure, by the test statistic.

	Prague	Ostrava	Pardubice	Brno	Karlovy Vary
Ostrava	3,03	...	...	...	...
Pardubice	−0,56	0,36	...	...	...
Brno	2,04	1,80	0,15	...	...
Karlovy Vary	−0,51	−0,37	1,60	1,91	...
Vienna	1,08	1,90	0,82	2,51	1,51
Bratislava	5,89	4,82	0,18	1,99	−0,40
Katowice	3,99	4,88	−0,35	1,82	−0,30
Dresden	0,46	0,54	0,37	3,06	2,59

Figure 8 – Matrix of test statistic of number of passengers

The critical value is given by the formula $|t| > t_{1-\alpha/2}$. The critical value looked up in the statistical tables is 2,306 for calculations of all transportation performances. If the value of the test statistic is outside the critical area (-2,306; 2,306) the dependence of the considered factors is confirmed.
According to the Figure 8 was proven only direct proportion between number of transported passengers at following airports:

- Prague and Ostrava
- Prague and Bratislava

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SCIENCES AND ARTS

- Prague and Katowice
- Ostrava and Bratislava
- Ostrava and Katowice
- Brno and Vienna
- Brno and Dresden
- Karlovy Vary and Dresden

Since no case of inverse proportion was found it was revealed that there is not any airport that would negatively influenced the number of transported passengers at another airport. Therefore the assumption about various airport competition based on catchment areas analysis was not confirmed.

Cargo

The calculation of relationship between amounts of handled cargo is the same as in the previous case. The transportation performances of Pardubice airport are not used because independence of residues was not proven by the Durbin-Watson test.

	Prague	Ostrava	Brno
Ostrava	−0,53	...	...
Brno	−0,29	−0,53	...
Vienna	0,67	−0,68	0,21
Bratislava	−0,03	−0,17	0,19
Katowice	0,03	−0,02	−0,21
Dresden	0,16	−0,24	0,49

Figure 9 – Correlation matrix of amount of handled cargo

	Prague	Ostrava	Brno
Ostrava	−1,76	...	...
Brno	−0,86	−1,75	...
Vienna	2,52	−2,63	0,59
Bratislava	−0,09	−0,48	0,54
Katowice	0,08	−0,06	−0,61
Dresden	0,46	−0,69	1,59

Figure 10 – Matrix of test statistic of amount of handled cargo

According to the Figure 10 was proven direct proportion between amount of handled cargo at Prague and Vienna airport. More importantly there was also proven inverse proportion between amount of handled cargo at Ostrava and Vienna airport. Therefore is possible to deduce that airports are in a competitive position to each other.

Aircraft movements

Aircraft movement includes total number of landings and takes off at selected airport. The calculation is the same as in the previous cases. The values of correlation coefficients are written in the following correlation matrix.

	Prague	Ostrava	Pardubice	Brno	Karlovy Vary
Ostrava	0,73	...	...	...	...
Pardubice	−0,10	−0,36	...	...	...
Brno	0,45	0,73	−0,43	...	...
Karlovy Vary	−0,02	−0,29	−0,34	−0,01	...
Vienna	0,73	0,33	0,14	0,39	0,27
Bratislava	0,90	0,83	−0,11	0,67	−0,17
Katowice	0,71	0,59	−0,04	0,43	0,14
Dresden	0,51	0,18	−0,15	0,26	0,55

Figure 11 – Correlation matrix of number of aircraft movements

In the next step was made the hypothesis testing of the correlation coefficients by the test statistics. Values of the test statistics are written in the following figure.

	Prague	Ostrava	Pardubice	Brno	Karlovy Vary
Ostrava	3,01	...	...	...	...
Pardubice	−0,28	−1,09	...	...	...
Brno	1,42	3,04	−1,33	...	...
Karlovy Vary	−0,05	−0,86	−1,03	−0,01	...
Vienna	2,99	0,99	0,40	1,21	0,80
Bratislava	5,96	4,24	−0,30	2,54	−0,49
Katowice	2,86	2,09	−0,11	1,36	0,41
Dresden	1,68	0,51	−0,43	0,76	1,87

Figure 12 – Matrix of test statistic of number of aircraft movements

According to the Figure 12 was proven only direct proportion between number of aircraft movements at following airports:

- Prague and Ostrava
- Prague and Vienna
- Prague and Bratislava
- Prague and Katowice
- Ostrava and Brno
- Ostrava and Bratislava
- Brno and Bratislava

Neither in this case was proven the inverse proportion between number of aircraft movements at examined airports. The conclusion of the exploration is that there is not a single airport that would negatively influenced number of aircraft movements at another examined airport.

CONCLUSION

The paper deals with issue of competition between airports since it is often discussed issue. Previous researches have proven the existing competition between airports and airlines and the fact that minor airports are losing amount of transportation performances to major airports. The aim of this paper was to reveal if there is a competition between airports in the Czech Republic. The research also included airports in surrounding countries, since there was an assumption about possible existence of competition given by the airport catchment areas. In spite of the assumption the competition was by the correlation analysis proven only in one case – an inverse proportion between number of handled cargo at Ostrava and Vienna airport was revealed. This case of competition is quite surprising, since the airports do not lay in its catchment areas. This result shows that competition might exist even between further airports and assumptions about competition should not be based only on geographical distance between airports but also on other aspects influencing the air transport demand and transportation performances.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2014

REFERENCES

[1] LIESNOUT R., et al. The competitive landscape of air transport in Europe. *Journal of Transport Geography*. 2016, 50, p. 68-82.
[2] VELDHUIS J. The competitive position of airline networks. *Journal of Air Transport Management*. 1997, Vol. 3, No. 4, p. 181-188.
[3] MALINA, R. *Potenziale des Wettbewerbs und staatlicher Regulierungsbedarf von Flughäfen in Deutschland.* Göttingen: Vandenhoeck & Ruprecht, 2006. ISBN 3525858981.
[4] PELS E., et al. Airport and Airline Competition for Passengers Departing from a Large Metropolitan Area. *Journal of Urban Economics*. 2000, 48, p. 29-45.
[5] HESS, S. and POLAK, J.W. Mixed logit modelling of airport choice in multi-airport regions. *Journal of Air Transport Management*. 2005, 11, p. 59-68.
[6] ISHII, J. et al. Air travel choices in multi-airport markets. *Journal of Urban Economics*. 2009, 65, p. 216-227.
[7] SUZUKI, Y. et al. Airport choice, leakage and experience in single-airport regions. *Journal of Transportation Engineering*. 2003, 129, p. 212-218.
[8] FUELLHART, K. Airport catchment and leakage in a multi-airport region: the case of Harrisburg International. *Journal of Transport Geography*. 2007, 15, p. 231-244.
[9] LAKEW, P.A. Airport Traffic and Metropolitan Economies: Determinants of Passenger and Cargo Traffic. *Journal of the Transportation Research Board*. 2015, 26 p.
[10] *Isochronous application* [online]. [cit. 2016-06-19]. Available at: http://cartoo.dyndns.org/
[11] HINDLS, R. et al. *Statistics for Economists*. 8th edition. Praque: Professional Publishing, 2007. ISBN 978-80-86946-43-6.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

ANALYSIS OF CONSUMPTION BEHAVIOUR OF DIFFERENT SEAFOOD PRODUCTS: AN EMPIRICAL ANALYSIS

PhD Gaetano Chinnici[1],

Full Prof. Biagio Pecorino[1],

PhD Valeria Allegra[1],

Assistant Prof. Giacchino Pappalardo[1],

Associate Prof. Mario D'Amico[1]

[1] University of Catania, Department of Agricultural, Food and Environmental, **Sicily Italy**

ABSTRACT

Nutrition has always been a priority need for human beings, but depending on the circumstances in which this need is met, the choices and uses of food consumption can change. A significant example is the diversification of food consumption that can be observed with the improvement of the living standards and socioeconomic conditions of the population. The choice of food and the related consumer behaviour is influenced by several factors that interact with each other. The analysis of the consumption of fishery products is very topical, and is the object of analysis of many research studies. In this context, there are several analysed aspects, such as issues of health, environmental problems related to the overconsumption of some species that may affect the ecological and environmental balance, the importance of some species over others, the origin of products, etc. This paper focuses on the consumption patterns of fish products, and in particular on the consumption of oily fish among Sicilian consumers, in an attempt to identify the main variables that influence the purchasing decisions, eating habits, and consumer attitudes and patterns of behaviour. The research results have shown that the socioeconomic characteristics of consumers such as gender, age, and education, can influence the consumption of oily fish in terms of frequency and the perception of freshness of the purchased fish, and its place in the preferences of the consumer and consequent probability of purchase.

Keywords: Seafood products, Consumer behaviour, Multivariate analysis.

INTRODUCTION

Seafood products hold a market share of around 37% of the production value of international trade. This share is the highest amongst alimentary products, compared to meat (about 10%), and milk and dairy products (about 7%) [1], [2]. The intake of fish products is greater in northern than in southern Europe. As a percentage of total fish consumption, the intake of oily fish is greater in the coastal areas of northern Europe (Denmark, Sweden) and Germany, than it is in central and southern Europe [3]. On the contrary, the most types of different fish are consumed in the south compared to the north of Europe, and this is due to the lower number of species available in the cold northern waters; to these factors are added, moreover, the traditional and cultural influences on the acceptability of different species of fish consumed [3], [4]. Over the past few years, the buying behaviour of consumers in respect to seafood products has aroused the interest of

SCIENTIFIC CONFERENCE WITH INTERNATIONAL MULTIDISCIPLINARY PARTICIPATION 3rd

researchers on an international level for different political and economic reasons that are related to aspects of nutrition and diet, food safety, sustainability, and business for the enterprises involved in the fishing industry. Fish products are an essential component of a healthy and balanced diet, in that they have a low content of saturated fat and are able to provide high-quality protein as well as many essential micronutrients such as vitamins and minerals; furthermore, fish products represent a primary dietary source of long chain polyunsaturated fatty acids (LCPUFAs or Omega-3) that provide various benefits for the health [5], [6], [7]. However, despite the strong growth in world fish consumption recorded in the last few decades, the recommended fish intake is not widely achieved [6], [8]. Worldwide, industrialised countries have the highest per capita consumption of fish products (27.4 kg/year) according to the reports of the FAO (2014) [9], with differences between individual countries and between various regions in terms of quantity and frequency of fish consumption, that reflect different levels of availability of fish as well as the heterogeneity of consumer preferences [4]. Therefore, since public health authorities are currently concerned to promote the consumption of fish products in order to improve public health, it is important to know what are the main factors that influence consumer behaviour towards these foods [10]. This work has the objective of analysing the consumption patterns of fish products, and of oily fish in particular, in order to identify, through the method of Principal Component Analysis (PCA), the variables that influence the purchasing decisions and nutritional habits, in order to define through cluster analysis (CA) the consumption behaviour.

METHODOLOGY

The analysis on the characteristics of consumption of oily fish was carried out on a sample of 222 consumers through direct interviews. The interviews were conducted in Italy with particular reference to the major metropolitan cities of Sicily (Catania, Palermo, and Messina). A questionnaire prepared on an ad hoc basis was administered to the sample of consumers. The questionnaire composed of 26 closed questions was structured in three sections: the first related to the identification of information on the general characteristics of consumption of fish products (the degree of awareness, the mode and the frequency of consumption, the types of products, etc.); the second was directed towards the identification of the particular characteristics associated with the commercial distribution of such products (places of purchase); the third related to the socio-economic characteristics of the consumers interviewed (gender, age, educational level, etc.). The set of data collected was processed by providing for, in a first phase, the use of descriptive statistical techniques, in order to represent the sample and outline the general attitude of consumers towards fish products. Subsequently, the information and the data collected with the questionnaire were elaborated in order to identify the principal characteristics of the consumption of oily fish, through a principal component analysis (PCA) and subsequently a cluster analysis (CA).

The PCA was expressed through the following formula:

$$Y_i = W_{i1}X_1 + W_{i2}X_2 + \cdots + W_{ip}X_p$$

where X_1, X_2, ... X_p are the standardised original P variables, and W_{i1}, W_{i2}, … W_{ip} are the values of the weights associated to each one of them.

The method of extraction utilised was that of Varimax that allows, through the orthogonalisation of the factors, a more simple and correct interpretation of them [11]. As

for the number of the factors extracted, we considered those with "eigenvalues" that assume a value greater than 1 [12].

The extraction of components followed the method for calculating the factorial scores for each case (factor loading). The more the absolute value of the coefficient is elevated, the more the variable is considered determinant for that factor, or in other words, the more saturated. The analysis of the matrix of factorial loadings (factor matrix) was undertaken by taking into consideration the scores greater than 0.30 [13].

The model was tested through the KMO test and the Bartlett test, that allow for the assessment of the adequacy of the data to the hypotheses of the model specified, through the following expression:

$$KMO = \sum_{i}^{p}\sum_{j\neq i}^{p} r^2\ ij \Big/ \sum_{i}^{p}\sum_{j\neq i}^{p} r^2\ \ ij + \sum_{i}^{p}\sum_{j\neq i}^{p} c^2\ ij$$

The KMO test assumes values of 0 and 1: low values of the index indicate an inappropriate analysis, to the point that Kaiser and Rice suggest considering values of at least 0.6-0.7 for the analysis to be considered satisfactory, while values less than 0.5 are not acceptable [14].

The Bartlett's test allows the verification of the hypotheses that the matrix of correlation coincides with the matrix identity, with the increase of the Bartlett test value the corresponding p-value decreases, which is useful for testing the absence of linear correlation; low values of the test indicate that this hypothesis cannot be excluded and that the use of the factor model may not be appropriate. The factorial scores were used in the Cluster Analysis in order to individuate groups of homogeneous consumers. The classification procedure used was the hierarchical, in which the clusters are formed by grouping the cases in increasingly numerous groups, starting with as many groups as there are cases, ending with a single group containing all the cases. The non-hierarchical technique of the k-means (k-means cluster analysis) was applied that allows, through an iterative process, the clusters minimising the Euclidean distances assumed by the centroids to be defined [15].

RESULTS E DUSCUSSION

The socio-economic characteristics reveal that, as shown in Table 1, 57.2% of the sample interviewed is female, while the other 42.8% are male. The predominant age band encountered amongst the consumers interviewed is that of people aged between 26-35 years (21.6% of the total), followed by consumers aged between 45-55 years (19.2%), and those between 56-65 years (17.6%), while at a distance in the sample of consumers are those aged over 66 years (11.3%), and those under 26 years of age (13.5%). With reference to educational qualification, the analysis of the data reveals that 53.2% have a high school diploma, 26.5% a university degree, 14.0% a middle school diploma, 5.0% an elementary school diploma, and only 1.3% have no educational qualification at all. Regarding profession, 36.5% of those surveyed reported being employees of private companies or of public administrations, 18.0% are retired, and 11.7% are freelance professionals.

The breadth of nuclear families shows that 32.9% of the sample belong to families with four individuals, 28.4% to families with 3 people, 18.5% to nuclear families with 2 people, 9.4% to families with more than 5 members and, finally, 10.8% to individuals who live alone. As

regards the average annual income, the analysis of the data indicates that 40.1% of the sample falls within the salary range of between 20,000 to 40,000 Euros, 29.3% in the range 10,000 to 20,000 Euros, 19.8% in the income bracket of more than 40,000 Euros and, finally, 10.8% are in the range under 10,000 Euros.

Table 1. Socio-economic characteristics of the sample

Gender	***%***	**Age group**	***%***
Males	42.8	Under 26 years	13.5
Females	57.2	From 26 to 35 years	21.6
		From 36 to 45 years	16.2
Education	***%***	From 46 to 55 years	19.8
No education	1.3	From 56 to 65 years	17.6
Primary	5.0	Over 66 years	11.3
Secondary	14.0		
High school	53.2	**Household unit**	***%***
Degree	26.5	1 member	10.8
		2 members	18.5
Profession	***%***	3 members	28.4
Craftsperson	1.8	4 members	32.9
Housewife	10.8	More than 5 members	9.4
Manager	0.9		
Unemployed	0.5	**Annual income**	***%***
Clerk	36.5	Up to 10,000 Euros	10.8
Self-employed	11.7	From 10,000 to 20,000 Euros	29.3
Worker	10.8	From 20,000 to 40,000 Euros	40.1
Pensioner	18.0	Over 40,000 Euros	19.8
Student	9.0		

(Data collected through direct survey).

In order to identify the main socio-economic variables and the consumption habits, the Principal Component Analysis (PCA) was applied favouring the rotation of the factors with the "Varimax" method. The factorial model has enabled the reduction of the information of the 7 socio-economic variables into 3 principal components that are able to explain 64.0% of the total variance, as shown in Table 2. The factorial model was tested with the "KMO" and "Bartlett's test", the results of which are summarised in Table 2, which are both positive, confirming the goodness of the application of the model.

The first principal component extracted, with 29.1% of the explained variance, characterises the so-called "Retired and elderly consumer", in that the variables "Age group (over 66 years)" (+0.905) and "Pensioner" (+0.903) are positively correlated. The negative correlation of the variable "Household unit" (-0.408) with the other variables shows the presence of nuclear families that are not large.

The second component extracted, that altogether explains 18.5% of the total variance, is characterised by the positive correlations of the following variables: "Age group (from 36-45 years)" (+0.523), "Degree" (+0.599), and "Clerk" (+0.452). The negative correlation of the variable "Household unit" (-0.665) with the other extracts reveals and strengthens the component, characterised by young members of small nuclear families who possess a high level of education and who are employed as office workers, both in the public and the private sectors.

The third factor extracted accounts for 16.5% of the variance, which is characterised by the positive correlations of the variables "Income (from 20,000 to 40,000 Euros)" (+0.906), "Degree" (+0.306), "Clerk" (+0.345), and "Household unit" (+0.300). The component extracted is represented by subjects who have a high family income.

Table 2. Factor score and KMO and Bartlett's test of socio-economic characteristics

	Factors		
	A1	A2	A3
Age group (from 36-45 years)	-0.258	**0.523**	-0.157
Age group (over 66 years)	**0.905**	-0.036	0.018
Degree	-0.047	**0.599**	**0.306**
Clerk	-0.401	**0.452**	**0.345**
Pensioner	**0.903**	-0.105	0.057
Household unit	**-0.408**	**-0.665**	**0.300**
Income (from 20,000 to 40,000 Euros)	0.082	-0.027	**0.906**
Total variance (%)	*29.1*	*18.5*	*16.5*
Measure of sampling adequacy KMO (Keiser Meyer Olkin)			0.673
Bartlett's test of sphericity	Approx. Chi-Square		272.724
	df		21
	Sig.		0.000

Relative to the variables of the habits and of the behaviour of consumers, the PCA has allowed us to extract 5 principal components from the 12 original variables that are able to explain 59.9% of the total variance, as shown in Table 3; the goodness of the model was confirmed by the values assumed by the "KMO" and "Bartlett's test" that are summarised in Table 3.

The first principal component extracted, with 14.4% of the explained variance, characterises the so-called regular consumption of oily fish "outside the home" as it positively correlates the variables "Extra domestic consumption of oily fish" (+0.772), "Extra domestic consumption of oily fish (once a week)" (+0.551), and "Restaurant" (+0.783). The second component extracted, with 13.4% of the accounted variance, is characterised by the positive correlations of the following variables: "Frequency of purchase/consumption of oily fish (several times a week)" (+0.855) and "Frequency of purchase/consumption of fresh seafood products (several times a week)" (+0.750). This component emphasises that the consumption of fish products, and of oily fish in particular, is regular. The third factor extracted accounts for 13.3% of the variance characterising the frequent consumption of fresh oily fish, with a good propensity to consume out of the house. In fact, the component is influenced by positive correlations of the variables "Frequency of purchase/consumption of fresh oily fish (once a week)" (+0.790), "Probability of consumption of fresh oily fish" (+0.725), and "Extra domestic consumption of oily fish (once a week)" (+0.386). The negative correlation with the variable "Frequency of purchase/consumption of frozen seafood products (every 15 days)" (-0.401) reinforces the characteristic of the main component extracted, related to the weekly consumption of fresh oily fish outside the home.

The fourth component extracted, with 9.8% of the explained variance, is characterised by the variables "Probability of consumption of oily fish in cans and jars" (+0.726), "Probability of consumption of prepared oily fish" (+0.692), and "Frequency of purchase/consumption of frozen seafood products (every 15 days)" (+0.312), saturate this component defining it as "Propensity to consumption of manipulated oily fish", understood

as a willingness to buy oily fish both in cans and jars and in prepared form, as it consumed frozen seafood every 15 days.

Table 3. Factor score and KMO and Bartlett's test of consumer habits

	Factors				
	B1	B2	B3	B4	B5
Frequency of purchase/consumption of fresh seafood products (several times a week)	0.146	**0.750**	0.208	-0.028	-0.063
Frequency of purchase/consumption of frozen seafood products (every 15 day)	0.228	-0.196	**-0.401**	**0.312**	**-0.389**
Frequency of purchase/consumption of oily fish (several times a week)	-0.033	**0.855**	-0.116	0.014	0.089
Frequency of purchase/consumption of fresh oily fish (once a week)	-0.003	-0.289	**0.790**	0.034	-0.095
Frequency of purchase/consumption of canned oily fish (every 15 day)	0.070	-0.170	0.117	-0.235	**-0.507**
Probability of consumption of fresh oily fish	-0.050	0.299	**0.725**	0.006	0.003
Probability of consumption of oily fish in cans and jars	0.216	0.069	0.155	**0.723**	-0.162
Probability of consumption of prepared oily fish	-0.160	-0.087	-0.124	**0.692**	**0.307**
Fishmonger	0.239	-0.157	0.059	-0.098	**0.711**
Extra domestic consumption of oily fish	**0.772**	0.024	-0.086	-0.032	-0.067
Extra domestic consumption of oily fish (once a week)	**0.551**	0.189	**0.386**	0.063	0.119
Restaurant	**0.783**	-0.016	-0.097	0.074	0.095
Total variance (%)	*14.4*	*13.4*	*13.3*	*9.8*	*9.0*
Measure of sampling adequacy KMO (Keiser Meyer Olkin)					0.649
Bartlett's test of sphericity		Approx. Chi-Square			260.467
		df			66
		Sig.			0.000

The last factor extracted, explaining 9.0% of the total variance, is characterised positively by the variables "Fishmonger" (+0.711) and "Probability of consumption of prepared oily fish" (+0.307), and negatively by those of "Frequency of purchase/consumption of canned oily fish (every 15 days)" (-0.507) and "Frequency of purchase/consumption of frozen seafood products (every 15 days)" (-0.389). For these reasons, the last component extracted can be defined as "Loyal to the vendor", in that the consumer tends to prefer the Fishmonger as the principal place to buy fish products, and also show a slight likelihood for the consumption of prepared products.

The homogeneous groups of consumers were individuated by applying the procedure of Cluster Analysis (CA) to the 8 components extracted and individuated from the PCA. The technique of non-hierarchical agglomeration, called the k-means, was utilised since the aggregation occurs around the values assumed by the centroids and at the Euclidean distance. There were 4 groups individuated, for which the values of the centres of the final clusters are given in Table 4. The first group of consumers, defined as "voluptuous", which is equal to 6.3% of the total sample, is characterised above all by the component B1 (2.396). This group, which is numerically the smallest, tends to consume oily fish outside the home, once a week, preferring the restaurant as a place of consumption: the profile of the average consumer is high from both the cultural (graduate) and the economic (medium-high

income, ranging between 20,000 to 40,000 Euros) point of view, and who are professionally occupied as office workers.

Table 4. Value of final cluster centers

Factors	Cluster			
	1	2	3	4
Factor A1	-0.228	-0.358	-0.344	**2.370**
Factor A2	0.234	**0.706**	**-0.724**	0.041
Factor A3	**-0.235**	0.270	-0.248	0.084
Factor B1	**2.396**	0.091	**-0.307**	**-0.474**
Factor B2	0.758	-0.351	0.129	0.301
Factor B3	1.234	**-0.438**	0.151	0.262
Factor B4	-0.092	0.223	-0.246	0.153
Factor B5	0.666	0.061	-0.213	0.173
Sample size (%)	*6.3*	*39.6*	*41.4*	*12.6*

The second group, with 39.6% of the respondents, is strongly characterised by the components A2 (0.706) and B3 (-0.438). Overall, this group comprises consumers from the higher cultural profile aged between 36-45 years and who are graduates with jobs as office workers, who tend to consume frozen fish products except for oily fish. For this reason, the group can be described as "distrustful" consumers. The third cluster, which is the most numerous, intercepts 92.0% of the respondents and is characterised by the components A2 (-0.724) and B1 (-0.307). The group is characterised by numerous nuclear families that tend to consume oily fish within the home, as it is likely that, due to an income that is not high, they are not in a position to have a meal at the restaurant. This group is defined as "pragmatic" consumers. The last cluster, defined as "radical" consumers encompasses 12.6% of the surveyed sample, is characterised by the presence of retired individuals with an age over 66 years, who tend to consume fresh fish products, and fresh oily fish in particular, with regular frequency (several times a week) within the home; in fact, the group under consideration does not resort to the restaurant to consume oily fish.

CONCLUSION

This study contributes to enhance the empirical results on the analysis of consumer behaviour in regard to fish products, with a specific emphasis on oily fish. It has been possible to reveal how the types and modes of use of the fish are able to influence the decisions to purchase oily fish for consumption at home and outside the home in Sicily. The results of the applied model confirm the presence of diverse patterns of behaviour and attitudes of consumption. The socio-economic variables have a direct influence on the consumption of oily fish, and on the relative probability and preference of purchase. Moreover, the study has enabled the verification of the changing attitude towards manipulated fish products (frozen, processed, canned, ready to eat) compared to fresh products, and the degree of appreciation on the part of some types of consumers for them being easily and quickly prepared. The results obtained in this study have allowed, therefore, the verification of the main variables that affect the consumption of oily fish, and the identification of four different groups of consumers, defined as "voluptuous", "distrustful", "pragmatic", and "radical".

The results achieved, constitute the preliminary basis for developing and formulating appropriate strategies and policies of effective marketing that are able to strengthen and enhance the opportunities for consumption of fish products present on the market.

REFERENCES

[1] Tveterås S., Asche F., Bellemare M.F., Smith M.D., Guttormsen A.G., Lem A., Lien K., Vannuccini S., Fish Is Food-The FAO's Fish Price Index, PLoS ONE, vol. 7/issue 5, pp 1-10, 2012.

[2] Natale F., Borrello A., Motova A., Analysis of the determinants of international seafood trade using a gravity model, Marine Policy, vol. 60, pp 98-106, 2015.

[3] Ruiter A. Fish and Fishery Products. Composition, Nutritive Properties and Stability. Wallingford, UK: CAB International, 1995.

[4] Zarbà A.S., New consumption trends of "ready-made" blue-fish, Italian Journal of Food Science, Volume 23/Issue SUPPL., pp. 42-45, 2011.

[5] Calvo Dopico D., Olsen S.O., Tudoran A., Analysis of the Preferences for a New Convenient Seafood Product: Empirical Application for Spain and Norway, Paper prepared for presentation at the I Mediterranean Conference of Agro-Food Social Scientists. 103rd EAAE Seminar 'Adding Value to the Agro-Food Supply Chain in the Future Euromediterranean Space'. Barcelona, Spain, April 23rd - 25th, 2007.

[6] Carlucci D., Nocella G., De Devitiis B., Viscecchia R., Bimbo F., Nardone G., Consumer purchasing behaviour towards fish and seafood products. Patterns and insights from a sample of international studies, Appetite, vol. 84, pp 212-227, 2015.

[7] FAO/WHO, Report of the joint FAO/WHO expert consultation on the risks and benefits of fish consumption, 25-29 January 2010, Rome, Italy, Food and Agriculture Organization of the United Nations, World Health Organization, pp 1-50, 2011.

[8] Grieger, J. A., Miller, M., Cobiac, L., Knowledge and barriers relating to fish consumption in older Australians, Appetite, vol. 59/issue 2, pp 456-463, 2012.

[9] FAO, The state of world fisheries and aquaculture. Opportunities and challenges. Rome, Italy, Food and Agriculture Organization of the United Nations, pp 1-223, 2014.

[10] Nesheim, M.C., Yaktine, A.L., Seafood choices. Balancing benefits and risks. Washington, D.C., USA,: The National Academies Press, 2007.

[11] Kaiser H.F., The VARIMAX criterion for analytic rotation in factor analysis. Psychometrika, 23/issue 3, pp. 187-200, 1958.

[12] Kaiser H.F., The application of electronic computers to factor analysis. Educational and Psychological Measurement, 20, pp. 141-151, 1960.

[13] Overall J.E., Klett C.J., Applied Multivariate Analysis. McGraw-Hill Co, New York, 1972.

[14] Kaiser H.F., Rice J., Little Jiffy, Mark IV, Educational and Psychological Measurement, 34, pp. 111-117, 1974.

[15] Di Vita G., Chinnici G., D'Amico M., Clustering attitudes and behaviours of Italian wine consumers, Quality - Access to Success, vol. 15/issueS1, pp 54-31, 2014.

ANALYSIS OF CROP MODELLING EFFICIENCY IN VINE-GROWING FARMS

Assoc. Prof.Dr. Alina Georgeta Dobrei [1]
Prof. Dr. Alin Dobrei[1],
Assoc. Prof.Dr. Eleonora Nistor[1],
Assoc. Prof. Dr. Dorin Camen[1],
Assoc. Prof.Dr. Ion Chisaliţă [1],

[1] Banat University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara, **Romania**

ABSTRACT

Technology is an important factor determining the future of vine-growing farms and therefore must be adjusted continuously according to soil type and climatic conditions, variety, wine market, vine and wine by-products, to can obtain the vineyards maximum economic efficiency.

Researches have been carried out in Recas viticultural area in the west of Romania, and were applied different floor management and pruning systems. The experimental variants were: V_1 – midrow bare soil and weeds cleared between the vines in the rows with a hand hoe; pruning works and grapes harvested by hand; V_2 – midrow bare soil with rotary hoe and herbicides under vines rows; pruning works and grapes harvested by hand; V_3 - midrow bare soil with rotary hoe and herbicides under vines rows; mechanical pruning and harvesting; V_4 - perennial grass strip between the grape rows and rotary tillers under vines rows; pruning works and grapes harvested by hand; V5 - perennial grass strip between the grape rows and rotary tillers under vines rows; mechanical pruning and harvesting.

This work is aimed at analyzing the effects of the experimental variants on grapes yield, and for each variant were calculated several economic indicators: cost per ha, production values, realized profit, cost per kg of grapes, rate of profit, production increased due to mechanization and inter- relationship between technological sequences. The results were very different; variants with a high degree of mechanization had the highest economic efficiency, while they did not also have the largest increase production.

Version control with the lowest percentage of mechanization had the highest production, but in the same time recorded the highest cost of production and the lowest rate of profit.

In conclusion, technologies which involve much manual labor ensure high production, but decrease profits and economic efficiency of the vineyard farm.

Keywords: economic efficiency, profit, grapevine, hand labor, technologies

INTRODUCTION

In recent years, crop technologies should manage - along with the factors already known, as (climate disturbances – Dobrei et al., 2015, inputs increasing, soil and variety) a new issue, at least for Romania – namely labor shortages and thus increase labor cost. In the new socio / economic situation, the only way for increase the efficiency of crop technologies remains to increase mechanization (7). At the same time it is imperative that new technological models in viticulture, to consider reducing agro-chemical and physico-chemical damage of the soil.

The main goal of vineyard floor management is important for soil improvement and conservation with implications for wine quality (11). For each vineyard the best practice is determined by vineyard site and design, environment and climate conditions, vine age and soil type (8). Traditionally, tillage is applied for controlling weeds particularly on vine row for reduce herbicides control and surface crusts. Disadvantages of this practice include risk of roots, trunk or arms injury, soil compaction and loss of fertility and structure, spread of soil pests and pathogens (12). Herbicides are often applied on vine row, are low cost and ease to use, but include the risk of toxicity and developing herbicide-resistant weeds (3). One of the most common practices for vineyard floor in the last decades is cover crops which have many benefits: weed suppression, improved soil structure, fertility, biological diversity and protection from erosion and water runoff, large amount of biomass for organic matter and a pest-predator balanced relationship (5 All these advantages are in balance with the potential disadvantages, like: competition with vine for nutrients and water, fertilization costs, regular maintenance, increased frost risk during early spring and late autumn, rodent population, soil-borne pathogens and pests increasing (9). Cover crops are seeded in every alley or in alternate alleys (e.g. grass and legume), while the vine row is kept clean with herbicide or cultivation (9). In the annual cycle, vine pruning requires a lot of hand or mechanical labour. Many growers consider mechanical pruning inferior to manual-only pruning (15), while others consider that have benefits like: higher yields, reducing in pruning costs, wine with lower alcohol or berry weights (1). The paper aim is to study the effect of vineyard floor management (tillage, cover crops, herbicides) and pruning works on winegrape yield parameters and quality.

MATERIAL AND METHOD

The research was organized between 2011 and 2015 in Recas vineyards located in the western of Romania, and were applied different floor management and pruning systems. The vineyard, in which the researches were carried out, is 10th years old (in full maturity); the variety chosen for experimentation is one of the most cultivated varieties in Romania - Feteasca Regala. Planting distances were 2.2 meters between rows and 1 meter between vines on row.

The experimental variants were: V_1 – mid-row bare soil and weeds cleared between the vines in the rows with a hand hoe; pruning works and grapes harvested by hand; V_2 – mid-row bare soil with rotary hoe and herbicides under vines rows; pruning works and grapes harvested by hand; V_3 – mid-row bare soil with rotary hoe and herbicides under vines rows; mechanical pruning and harvesting; V_4 - perennial grass strip between the grape rows and rotary tillers under vines rows; pruning works and grapes harvested by

hand; V_5 - perennial grass strip between the grape rows and rotary tillers under vines rows; mechanical pruning and harvesting.

In experimental variants, manual labor was replaced as much as possible with the mechanized labor to can adapt new technological models to the current socio-economic situation, with lowest effects on production and quality.

It was estimated the influence of experimental conditions on the yield and quality of grapes, and for each variant were calculated several economic indicators such as: production value, costs per hectare, gross profit, profitability, cost per kilogram of grapes, costs and benefits associated with the use of machinery; correlations values were calculated between the experimental variants, production values, profit and costs.

Both for production values and production costs, was made an average on years of research; for a better understanding, these average values have been converted into euro according to the current official rate: 1 euro = 4.5 RON.

Production value was calculated by multiplying the grape yield per hectare with average price of grapes per unit (kg), in recent years (0.3 euro / kg). The cost per kilogram was calculated by dividing the costs per hectare to the yield. Profitability was calculated by dividing the total income to the costs of production. It is expressed in euro obtained at 1 Euro investment, namely euro to 100 Euros investment. Economic indicators were calculated based on direct costs as they directly related to the crop technology while indirect expenses are due to taxes.

All data were analyzed using Statistical Analysis System (SAS - version 9.1). Analyses of variance (ANOVAs) were used to test the effects of experimental variants on the vine, soil, yield and production according to a split-block ANOVA model. Duncan's multiple range tests was used to determine significant differences among variants.

Results and discussions

The results are a synthesis of those obtained during research (2011-2015), a period with favorable (2013, 2015), and less favorable years (2014) for grapevine, therefore the average results presented are relevant for Fetească Regala grown in the Recas viticultural area. In Table 1, is presented the influence of five technological systems on grape production and quality.

Regarding the grape yield, V_1 with the highest percentage of manual labor gave the highest yield of 12174 kg/ha. V_2 variant in which manual hoeing was replaced with herbicides gave a slightly lower yield, but without statistical significance.

In V_3, with mid-row bare soil, and mechanized harvesting and green operations, grape yield was lower with almost 1000 kg / ha. In V_4 in which soil tillage was reduced and organic matter from the soil protected, grape yield was lower than control with 1.390 kg/ha. V_5 variant, which is the variant with the lowest percentage of manual labor and the lowest soil tillage, has achieved the smallest yield per hectare.

Concerning yield quality parameters appreciated on sugar content, the differences between the experimental and control variants are less obvious. Control variant recorded the highest sugar content, but the only negative difference statistically significant, was recorded in V_5 variant. Table 2 shows the average values over the 5 years of research for costs related to grape yield, production value and gross profit.

Table 1
Experimental variants influence on grapes production and quality (on average 2011-2015)

Variant	Yield		Sugar content		Significance	
	(kg/ha)	Difference from control (kg/ha)	g/l	Difference from control (g/l)	Yield	Sugar content
V_1 (Control)	12174	-	197	-	-	-
V_2	11946	- 228	193	- 4	-	-
V_3	11232	- 942	192	- 5	0	-
V_4	10784	- 1390	193	- 4	00	-
V5	10650	- 1524	190	- 7	00	0

DF -Degree of freedom	**5%**	**1%**	**0,1%**
Grape yield (kg/ha)	584.7	1172.3	1976.2
Sugar content (g/l)	5.2	8.6	13.9

Manual versus mechanical pruning was studied in a 16 year old vineyard from Portugal by Cruz et al. (4) and during 2008 – 2010 they found that each year the grape yield (t/ha) was higher with at least 5 t/ha in favour of mechanical pruning compared to manual pruning.

Grape quality, pruning systems and labour costs were studied by Bates and Morris (2) in „Concord" cultivar, and they found that only manual pruning had the highest cost per unit while mechanical and manual pruning reduced costs with 56% or $178/acre and only mechanical reduced costs per unit by 80%, both correlate with manual pruning.

Table 2
Experimental variants influence on production costs, production value and gross profit

Variant	Production costs (Euros/ha)	Production values (Euros/ha)	Gross profit (Euros/ha)
V_1 (Control)	1840	3652	1812
V_2	1790	3583	1793
V_3	1450	3369	1919
V_4	1350	3235	1885
V5	1110	3195	2085

Production costs represent only direct costs and VAT, and not include indirect costs and annual depreciation.

The biggest costs were recorded in V_1 (Control) of 1840 Euros/ ha. In variant V_2 replacing manual hoeing on vines row with herbicides has led to reductions in spending by 50 Euros / ha.

In V_3 replacing manual hoeing on vines row with herbicides and mechanical harvesting and green pruning, have reduced costs by 390 Euros / ha.

Production costs in V_4 were with 490 Euros / ha lower by replacing soil tillage and herbicides with permanent grass, maintained by two or three mowing's per year. The

lowest costs per hectare were obtained in V_5, in which soil tillage and herbicides were replaced with permanent grass, mechanical harvesting and green pruning.

Concerning the production value, none of the variants have managed to overcome the control variant. V_4 and V_5 with the lowest production costs registered the smallest production values per hectare of 3232 Euros and 3195 Euros respectively.

Main aim of any kind of economic activity is earning profit, and this financial goal also applies in viticulture. In this respect the highest gross profit (2085 Euros/ha) was realized in V_5, in which mechanical works were combined with less soil tillage.

The variant with the second largest gross profit was V_3, in which were applied undervine mechanical soil cultivation, mechanical harvesting and green pruning.

The gross profit in V_3 was 1919 Euros/ha. In V_4 the gross profit was 1885 Euros/ ha, by decreasing the soil tillage and replacing the manual hoeing on vine row with herbicides. The lowest profit (1812 and 1793 Euros respectively), was obtained in V_1 and V_2, both with the highest rate of manual labor.

In figure 1 is represented the gross profit in all five experimental variants related to production costs and value.

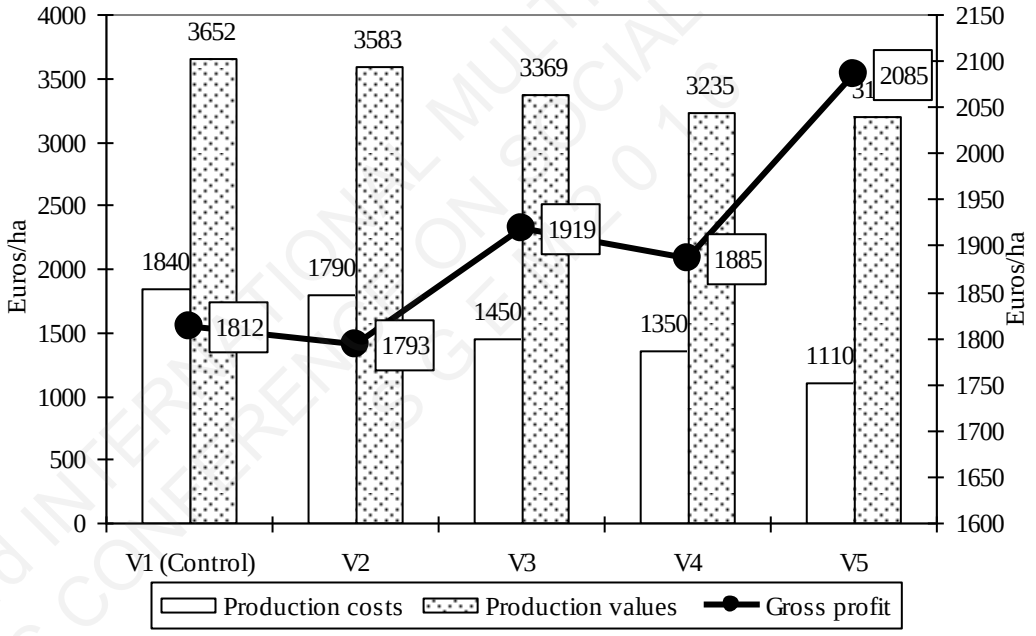


Fig. 1 Experimental variants influence on production costs, production values and gross profit

Mechanical works in grapevine management is not something new. In 1989, Pscheidt and Pearson (10) declare in their paper that growers can obtained monetary savings by mechanical pruning their vineyards, and one grower from western New York estimated his savings at $40.5/ha.

In each country cost of grape production is different. In last decades, the lowest costs for wine production were in Spanish farms (from 2,300 Euro/ha to 3,200 Euro/ha), while Italy, Germany or Australia, produce grape at the highest costs (from 8,000 to 9,900 Euros/ha) (13)

Table 3
Experimental variants influence on economic indicators

Variant	Costs / kg grapes (Euros)	Diminished value of expenses related to mechanization		Profitability index	
		Euro/ha	%	On 1 Euro investment	%
V1 (Control)	0.151	-	-	1.984	198
V2	0.149	50	2.8	2.001	200
V3	0.129	390	21.2	2.322	232
V4	0.125	490	26.7	2.396	239
V5	0.104	730	39.7	2.878	287

Grapes cost per unit (kg), it is an important indicator for establishing the selling price. All experimental variants recorded costs per kilogram, lower than control. The lowest cost was recorded in V_5 in which was applied the most complex mechanical works. In all variants costs per grapes kilo have declined as replacing manual with mechanical labor. Same manner of variants rescheduling was recorded in respect of lowering costs; V_5 with the lowest amount of manual labor recorded lower production costs by 730 Euros/ ha, or by 39.7% respectively, compared to control.

Costs per unit of land and cost of production per kilogram of grapes have influenced the profitability ratios. In all variants, including control variant (with the lowest level of mechanization), profitability ratio was good. Profitability ranged from 198% in control variant to 287% in V_5 (with the highest mechanization level). Soil maintenance, harvesting and green pruning mechanization are technological steps with major impact on profitability.

In many wine producer countries in last decades, overall profitability was very low. With low prices for Sangiovese grape variety (380 Euros/t), a farm in Emilia Romagna (Italy) cover only cash counts (direct and indirect costs, depreciation and salaries), in 2011 (13).

CONCLUSIONS

In Romania, viticulture proved to be a very profitable crop with relatively low direct costs of production and in the same time the grower can get high production values. Unfortunately, the taxes and fiscal policy are less beneficial for grapevine growers and greatly raise the retail price of merchandise, reducing producer's profit.

Labor shortage because of population migration to other European or world regions, has greatly increased the cost of manual labor-only, and imposes the development of new strategies with a highly mechanization. Using cover crops is one of the ways to reduce cost of production in the vineyard. Soil maintenance, harvesting and winter or green pruning are technological steps, which can easily be mechanized, without affecting in a decisive way the quality of the grapes. Costs per unit of land and cost of production per kilogram of grapes have influenced the profitability ratios. Thereby, the mechanical soil

maintenance, harvesting and green pruning are technological steps with a major impact on profitability. Grape growers that prune mechanical their vineyards can reinvest in vineyard or winery a small portion from their savings.

REFERENCES:

[1] Archer E., Van Schalkwyk D., The effect of alternative pruning methods on the viticultural and oenological performance of some wine grape varieties. South African Journal of Enology and Viticulture, vol.28, pp.107-139, 2007.

[2] Bates T., Morris J., Mechanical cane pruning and crop adjustment decreases labor costs and maintains fruit quality in New York 'Concord' grape production**,** Hort Technology, vol. 19, no. 2, pp.247-253, 2009.

[3] Chauhan, B.S., Gill G.S., Preston C., 2006. Tillage system effects on weed ecology, herbicide activity and persistence: A review. Aust. J. Exp. Agric. 46:1557–1570.

[4] Cruz A., Piovene C., Claro A., Rodrigues A., De Castro R., Mechanical pruning on a vertical shoot positioning system in Dão region, In Novello, V Bovio, M. Cavalleto S., (Eds), Proceedings, GiESCO 2011, 17th Interational Symposium, Asti-Alba (CN): Le Progres Agricole et Viticole, pp.575-578, 2011.

[5] Frederikson L., Skinkis P.A., Peachey E., Cover crop and floor management affect weed coverage and density in an establishing Oregon vineyard, HortTechnology, vol. 21, pp. 208–216, 2011.

[6] Dobrei A., Dobrei A.G., Sala F., Nistor E. , Mălăescu M., Dragunescu A. , Cristea T., Research concerning the influence of soil maintenance on financial performance of vineyards, Journal of Horticulture, Forestry and Biotechnology, vol. 18(1), pp.156- 164, 2014.

[7] Dobrei A., Dobrei A.G., Nistor E., Iordanescu O.A., Sala F., Local grapevine germplasm from western of Romania - an alternative to climate change and source of typicity and authenticity, Agriculture and Agricultural Science Procedia, Elsevier, vol. 6, pp. 124-131, 2015.

[8] Guerra B., Steenwerth K., Influence of floor management technique on grapevine growth, disease pressure, and juice and wine composition: a review, American Journal of Enology and Viticulture, vol. 63, pp. 149-164, 2012.

[9] Ingels C.A., Scow K.M., Whisson D.A., Drenovsky R.E., Effects of cover crops on grapevines, yield, juice composition, soil microbial ecology, and gopher activity. Am. J. Enol. Vitic. vol.56, pp.19–29, 2005.

[10] Pscheidt J.W., Pearson R.C., Effect of grapevine training systems and pruning practices on occurrence on phomopsis cane and leaf spot, Plant Disease, vol. 73, no.10, pp. 825 – 828, 1989.

[11] Ripoche, A., Celette F., Cinna J.P., Gary C., 2010. Design of intercrop management plans to fulfill production and environmental objectives in vineyards. Eur. J. Agron. 32:30–39.

[12] Smith, R., Bettiga L., Cahn M., Baumgartner K., Jackson L.E., Bensen T., Vineyard floor management affects soil, plant nutrition, and grape yield and quality. Calif. Agric. vol. 62: (4), pp. 184–190, 2008.

[13] Strohm K., Dirksmeyer W., Garming H., International Analysis of the Profitability of Wine Grape Production, Academy of Wine Business Research, 8th, International Conference, Geisenheim, Germany, Conference Proceedings, ISBN 978-3-00-047628-0, 2014, pp. 83-94.

SCIENTIFIC PAPERS 3rd INTERNATIONAL CONFERENCE 2016 AGRICULTURE FOR LIFE, LIFE FOR AGRICULTURE

[14] Steenwerth, K., K.M. Belina, Cover crops enhance soil organic matter, carbon dynamics and microbiological function in a vineyard agroecosystem. App. Soil Ecol. vol.40, pp. 359–369, 2008.

[15] Tomasi D., Gaiotti F., Sansone L., Lovat L., Marcuzzo P., Belfiore N., Vincenzi S., Matese A., Bonato L., Mechanical pruning, no pruning and manual pruning: effects on grape composition and health status of "Pinot Gris" and "Cabernet-Sauvignon" cultivars in the "Piave" AOC area of Veneto region. Acta Hort., no. 978, pp.317- 326, 2013.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

ANALYTICAL VIEW OF USING PREDICTION MODELS IN CONDITIONS OF ACCOMMODATION FACILITIES IN SLOVAKIA

Ing. Beata Sofrankova, PhD.[1]

PhDr. Svetlana Matkova, PhD.[1]

[1] Faculty of Management, University of Presov in Presov, **Slovakia**

ABSTRACT

At present, the negative developments in the global economy reflected in the financial results and financial position of most enterprises and company management looking for ways to detect as early as possible causes of the deterioration of their financial situation. One way is the application of appropriate models for forecasting financial situation, using information from financial - economic analysis. Prediction models are among the instruments of financial prediction and can help us detect early deterioration of the financial situation. The aim of this paper is to analyze the financial situation of selected Slovak's accommodation facilities using suitable prediction bankruptcy and creditworthy models. The analysis was based on the financial statements of selected accommodation facilities in Slovakia. Another objective was statistical analysis of the connections between selected non-financial criteria and the state of financial health of the analyzed companies. Among non-financial criteria were included legal form, number of employees, class of accommodation and number of beds. The impact of selected non – financial criteria of financial health of accommodation facilities were analyzed using the appropriate statistical methods. The results of analysis will become the focus of our further research aimed at creating a modified of prediction model for accommodation facilities in Slovakia.

Keywords: Financial Indicator, Non – Financial Criteria, Prediction Model, Accommodation facilities

INTRODUCTION

At present, the negative developments in the global economy reflected in the financial results and financial position of most enterprises and company management looking for ways to detect as early as possible causes of the deterioration of their financial situation. One way is the application of appropriate models for forecasting financial situation, using information from financial - economic analysis. There are several models to assess the financial health of companies, which are created from various financial indicators are a tool for early detection of adverse financial developments. Predictive models are among the instruments of financial prediction and divided into creditworthy and bankruptcy.

The essence of creditworthy models is selected financial ratios score entering the individual models. On the basis of a numerical scale, we can determine the level of the financial health of the company. Bankruptcy models are among the mathematics-statistical methods. They have greater representation in comparison with creditworthy models and the difference lies in the fact that the creditworthy models are used on

the significance of individual preference indicators weight, entering into the model and evaluate the financial situation with the possibility of prediction of the financial situation of the enterprise.

Table 1 Prediction models

CREDITWORTHY MODELS	*BANKRUPTCY MODELS*
▪ *ARGENTI MODEL*	▪ *ALTMAN MODEL*
▪ *BALANCE ANALYSIS OF DOUCHA*	▪ *BEERMAN MODEL*
▪ *QUICK TEST*	▪ *FULMER MODEL*
▪ *TAMARI RISK INDEX*	▪ *CH – INDEX*
	▪ *INDEX CREDITWORTHINESS*
	▪ *INDEX IN*
	▪ *SPRINGATE MODEL*
	▪ *TAFFLER MODEL*

Source: own processing by [3], [5], [6], [7], [11], [12].

In this article we will focus on the description of selected creditworthy and bankruptcy models, which will be applied to selected accommodation facilities in Slovakia.

We selected models form the group of creditworthy – **Balance analysis of Doucha** and **Quick Test** and form the group of bankruptcy we applied models **Altman model, Index IN05, Springate model** and **Taffler model.**

CREDITWORTHY MODELS

Balance Analysis of Rudolf Doucha (DBA) is a set of indicators designed to be able to use this analysis in any company regardless of its size. [10] This system was created in the conditions of the Czech Republic and balance analysis is in progress at three levels:

- **Balance Analysis of Doucha I (DBA I)** – Scheme of four basic indicators - stability (A), liquidity (A), activity (A), profitability (R) and based on an overall indicator for the system (C), which is defined as the weighted average of each group,
- **Balance Analysis of Doucha II (DBA II)** – Scheme consists of 17 indicators that are divided into four equal groups of indicators, which were in Balance Analysis I.
- **Balance Analysis of Doucha III (DBA III)** – this scheme is an extension of Bilance Analysis II, it consists of a large amount of indicators from which some of them are modified according to predetermined parameters and includes cash flow report, it recommends to follow the development of the company on the quarterly basis for two years.

Model DBA I [2] is expressed as follows:

DBA I = (2.S + 4.L +1.A + 5.P) / 12

Stability (S) = Equity / Non – current Assets

Liquidity (L) = (Financial Assets +Current receivables)/(2,17 . Short-term debt capital)
Activity (A) = Total Revenues / (2 . Total Liabilities and Equity)
Profitability (P) = (8 . EAT) / Share Capital

Quick Test (QT) (Kralickuv Quicktest) is based on the transformation of individual ratio values of financial indicators for points. The points are assigned according to point scales, which are generally established by expert methods. The advantage is speed and simplicity, but it is only an approximate picture of the financial situation of enterprises. The model consists of four indicators ($QT_1 – QT_4$), the first two indicators of which are focused on the assessment of financial stability and the other two on the assessment of the status of the income of the enterprise.

Quick Test (QT) [8] is expressed as follows:
$QT = [(QT_1 + QT_2)/2 + (QT_3 + QT_4)/2]/2$
QT_1 = Equity /Total Assets
QT_2 = (Total Debt Capital – Financial Assets / Netto Cash flow
QT_3 = EBIT / Total Assets
QT_4 = Netto Cash flow / Total Sales

Table 2 Evaluation for Quick Test

	0 point	1 point	2 points	3 points	4 points
QT1	< 0	0 – 0,1	0,1 – 0,2	0,2 – 0,3	> 0,3
QT2	> 30	12 – 30	5 -12	3 - 5	< 3
QT3	< 0	0 – 0,08	0,08 – 0,12	0,12 – 0,15	> 0,15
QT4	< 0	0 – 0,05	0,05 – 0,08	0,08 – 0,1	> 0,1

Source: processing based on [10], [8].

BANKRUPTCY MODELS

In 1968, E. I. Altman published the first version of the ATLMAN Z - score (AZ1), which was intended for limited companies with publicly traded shares. In 1983, the model was complemented and redesigned for non - traded companies on financial markets (AZ2) and in 1995 created a version for non - production company (AZ3). [1] For the analysis of the Altman Z-Score [1] we have chosen variant of model AZ2.

$AZ2 = 0,717X_1 + 0,847X_2 + 3,107X_3 + 0,42X_4 + 0,998X_5$
X_1 = (Current Assets - Current liabilities) / Total Assets
X_2 = Retained Profits / Total Assets
X_3 = EBIT/ Total Assets
X_4 = Equity/ Liabilities
X_5 = Sales / Total Assets

Inka and Ivan Neumaier [9] are the authors of the model **INDEX IN (IN**), for which they created its modification by 4 (in 1995 - creditor variant IN95, in 1999 - ownership variant IN99, in 2002 - complex variant IN01, in 2005 - modified complex variant IN05). For analysis of the financial situation of selected hotels, there was chosen modification model INDEX IN - model IN05. [11]

$IN05 = 0,13X_1 + 0,04X_2 + 3,97X_3 + 0,21X_4 + 0,09X_5$
X_1 = Total Assets / Debt Capital
X_2 = EBIT / Interest Expense
X_3 = EBIT / Total Assets

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY 2016

X_4 = *Total Revenues / Total Assets*
X_5 = *Current Assets / Short-term debt capital*

Springate model (SM) was based on principle Altman model, originally had 19 ratio indicators and in final form consists of four indicators. Springate model has only one criterion for the evaluation of the financial situation and this is where SM is less than 0,862, then we can expect the some problems in enterprise. [6]

$$\mathbf{SM = 1{,}03X_1 + 3{,}07X_2 + 0{,}66X_3 + 0{,}4X_4}$$

X_1 = *Net Working Capital / Total Assets*
X_2 = *EBIT / Total Assets*
X_3 = *EBT / Liabilities*
X_4 = *Sales / Total Assets*

Taffler model (TM) is consisting of four indicators, which were selected from 90 ratio indicators. If the evaluation financial health by model TM achieves a positive value is a creditworthy enterprise, in the case of negative values is an enterprise in bankruptcy. Model TM moves evaluation as follows: creditworthy undertaking has for TM value higher than 0.3 and enterprise in bankruptcy achieves TM less than 0.2. The evaluation in the interval 0.2 to 0.3 classifies enterprise into a grey zone. [11]

$$\mathbf{TM = 0{,}53X_1 + 0{,}13X_2 + 0{,}18X_3 + 0{,}16X_4}$$
X_1 = *EBT / Short-term Debt Capital*
X_2 = *Current Total Assets / Debt Capital*
X_3 = *Short-term debt capital / Total Assets*
X_4 = *Sales / Total Assets*

Table 3 Evaluation selected prediction models

MODEL/ZONE	*safe zone*	*grey zone*	*distress zone*
DBA I	DBA I > 1	0,5 ≤ DBA I ≤ 1	DBA I < 0,5
QT	QT > 3	1 < QT < 3	QT < 3
AZ2	AZ2 ≥ 2,9	1,23 < AZ2 < 2,9	AZ2 ≤ 1,23
IN05	IN05 ≥ 1,6	0,9 < IN05 < 1,6	IN05 ≤ 0,9
SM	SM > 0,862		SM < 0,862
TM	TM > 0,3	0,2 ≤ TM ≤ 0,3	TM < 0,2

Source: own processing by [4], [6], [7], [12], [14].

MATERIALS AND METHODS

The aim of this paper is to analyse the financial situation of selected Slovak's accommodation facilities using suitable prediction bankruptcy (Balance analysis by Doucha I and Quick Test) and creditworthy models (Altman Z-Score, Index IN05, Springate model and Taffler model).

The basic set consists of companies whose predominant activity was classified according to the statistical classification of economic activities SK NACE Rev. 2 to Section I - Accommodation and catering services and sections 551 - hotel and similar

accommodation. The random selection was created from the basic set which consists of 46 business entities. The assessment base of financial situation of selected accommodation facilities are accounts which we have gained by searching publicly available databases and Commercial Journal accounts of enterprises registered by SOLIDITET, s. r. o. Processing of evaluation financial health has been implemented in MS EXCEL. For analysis were selected 4 non-financial indicators such as the legal form, the class of accommodation, the number of employees and the number of beds in accommodation. By using statistical CHÍ-square test was to verify the existence of contexts between selected non-financial indicators and financial health status evaluated in the programme STATISTICA.

In the line with the main goal the research hypothesis are as follow:

Hypothesis H1: We assume that a relationship exists between the legal form of the company and the state of financial health of enterprises.
Hypothesis H2: We assume that a relationship exists between the classes of accommodation facilities and state of the financial health of enterprises.
Hypothesis H3: We assume that a relationship exists between the number of employees and the state of financial health of enterprises.
Hypothesis H4: We assume that there is a correlation between the number of beds and the state of financial health of enterprises.

Analysis of non-financial criteria

According to the legal forms criteria, enterprises can be divided into two groups - the joint - stock companies and limited liability companies. In the research sample is represented 56.5 % of limited liability companies and 43.5 % of joint stock companies

Table 4 Enterprise classification by size

Companies size categories	*Number of employees*	*Number of enterprises*	*Percentage*
Microenterprise	*4 - 9*	*5*	*10,87*
Small enterprise	*10 - 49*	*22*	*47,83*
Medium enterprise	*50 - 249*	*17*	*36,96*
Large enterprise	*250 - 499*	*2*	*4,35*

Source: authors based on Statistical Office of the Slovak republic

Another non - profit indicator was the class accommodation that structure is given in the table below:

Table 5 Enterprise classification by class of accommodation

Class accommodation 5 star systems	*Number of enterprises*	*Percentage*
*1**	*3*	*6,52*
*2**	*6*	*13,04*
*3**	*15*	*32,61*
*4**	*20*	*43,48*
*5**	*2*	*4,35*

Source: according to selected enterprises on the internet

On the basis of the results obtained by number of beds, the analysis was carried out by European Parliament and Council Regulation (EU) No. 692/2011.

Table 6 The distribution of enterprises by number of bed

Category of size enterprises	*Number of beds*	*Number of enterprises*	*Percentage*
Small	*do 25*	*2*	*4,35*
Medium	*25 - 99*	*11*	*23,91*
Large	*100 - 249*	*23*	*50,00*
	over 250	*10*	*21,74*

Source: according own processing of selected enterprises on the internet

RESULTS AND DISCUSSION

The following article describes the financial health evaluation of selected accommodation facilities by selected prediction models.

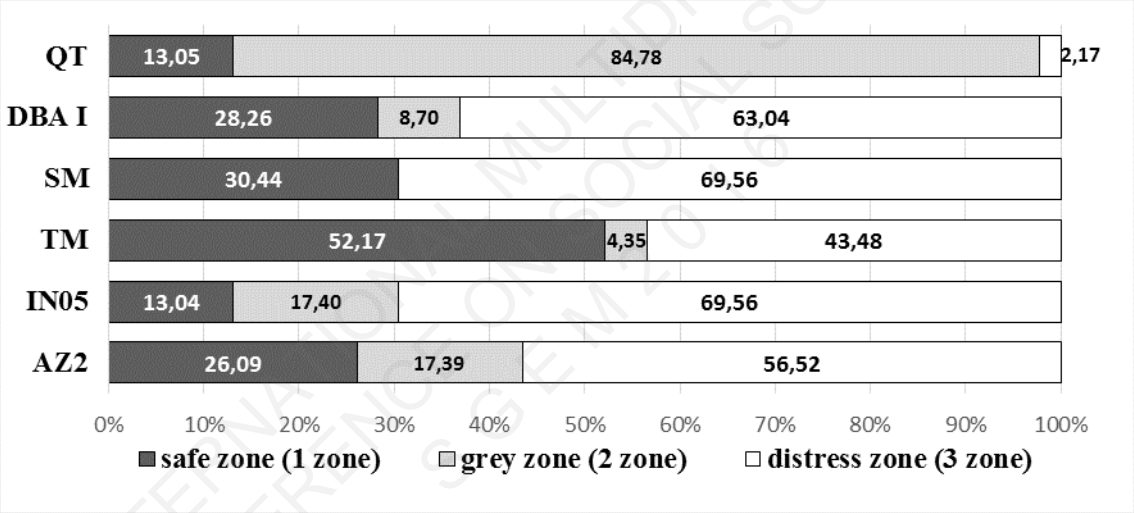


Figure 1 ***Evaluation of financial health by prediction models***
Source: own processing

Quick test rank over 84.78 % of accommodation facilities of indefinite enterprises with non – financial situation included in the grey zone (2 Zone). 13.05 % of enterprises were included into the prosperous group of enterprises (1 Zone), and only 2.17 % of enterprises were included into distress zone. Different assessment of financial health is described by DBA I. Up to 63.04 % of the enterprises belong to the distress zone where businesses are at risk of bankruptcy. The safety zone is 28.26 % of enterprises and 8.7 % of enterprises fall within a grey zone.

In the evaluation of the financial health of selected creditworthy models, we can say that most enterprises (52.17 %) were included in the Safe Zone (Zone 1) by Taffler model, 30.44 % of enterprises fell within that zone by Springate model (SM) and IN05 and the lowest percentage of companies, only 13.04% were enrolled in this zone using a model IN05.

Using the statistical software STATISTICA was to identify context between selected non – financial indicators, in order to verify four assigned hypothesis. The results of statistical CHI – square test are given the next table.

Table 7 Evaluation of hypothesis

Hypothesis	**H1** *legal form*			**H2** *class*			**H3** *number of employees*			**H4** *number of beds*		
Models	***CHI***	***df***	***p***	***CHI***	***df***	***p***	***CHI***	***df***	***p***	***CHI***	***df***	***p***
DBA I	*1,401*	*2*	*0,496*	***17,101***	***8***	***0,029***	*10,146*	*6*	*0,119*	***24,140***	***6***	***0,001***
QT	***10,204***	***2***	***0,006***	*9,565*	*8*	*0,297*	*5,057*	*6*	*0,536*	*9,061*	*6*	*0,170*
AZ2	*2,052*	*2*	*0,358*	***34,306***	***8***	***0,001***	***14,569***	***6***	***0,024***	*10,961*	*6*	*0,090*
IN05	*2,506*	*2*	*0,286*	***33,951***	***8***	***0,001***	*8,960*	*6*	*0,176*	***21,784***	***6***	***0,001***
SM	*1,923*	*1*	*0,166*	***13,797***	***4***	***0,008***	*4,149*	*3*	*0,246*	***15,239***	***3***	***0,002***
TM	*1,681*	*1*	*0,195*	***18,436***	***4***	***0,001***	*3,417*	*3*	*0,332*	***11,812***	***3***	***0,008***

Source: own processing in STATISTICA

A statistically significant relationship between the legal form and the state of financial health (H1) was confirmed only for the Quick Test. Connection between the class of accommodation facilities and state of financial health (H2) was confirmed for five models (DBA I, AZ2, IN05, SM, TM). From six of prediction models were confirmed a statistically significant association between the number of employees and the state of financial health of the selected accommodation (H3) only for model AZ2. For four selected prediction models (DBA I, IN05, SM and TM) has been established statistically significant association between the number of beds and the state of financial health of the selected accommodation. Based on the statistical evaluation of established hypothesis we can say that two hypotheses were confirmed (H2 and H4).

CONCLUSION

Nowadays, the financial analysis of the basic tools of financial management for each company, along with prediction model is a tool for comprehensive assessment of financial condition in order to identify the strengths and weaknesses of the company. It is thus the basis for the right decisions about the future of the company. The aim of this paper was to analyze the financial situation of selected Slovak's accommodation facilities using suitable prediction bankruptcy and creditworthy models. The analysis was based on the financial statements of selected accommodation facilities in Slovakia. Another objective was statistical analysis of the connections between selected non-financial criteria (legal form, class of accommodation facilities, number of employees and number of beds) and the state of financial health of the analysed companies. Based on the results of statistical research, we recommend include two non-financial criteria – number of beds and class of accommodation facilities along with modification prediction models for accommodation facilities, which we consider as important indicators typical for the group of enterprises offering accommodation facilities.

ACKNOWLEDGEMENTS

This article is one of outputs of project VEGA 1/0791/16 "Modern approaches to improving enterprise performance and competitiveness using the innovative model - Enterprise Performance Model to streamline Management Decision-Making Processes".

REFERENCES

[1] ALTMAN, E. I. 2012. *The Use of Credit Scoring Models and the Importance of a Credit Culture.* [online]. [cit. 2012-02-01] Available at: http://people.stern.nyu.edu/ealtman/3-%20CopCrScoringModels.pdf
[2] DOUCHA, R., 1996. Finanční analýza podniku. Praktické aplikace. Praha: ISBN 80-902111-2-7.
[3] HORVÁTHOVÁ, J., BEDNÁROVÁ, Ľ., 2012. Finančná analýza a finančné plánovanie. Prešov: Bookman, s. r. o. ISBN 978-80-89568-32-1.
[4] JENČOVÁ, S., 2014. Finančno – ekonomická analýza podnikateľských subjektov. Prešov: Grafotlač Prešov, s. r. o. ISBN 978-80-8165-051-2.
[5] KISEĽÁKOVÁ, D., JENČOVÁ, S., ČVERHOVÁ, M., 2012. Manažérske financie podnikateľských subjektov. Prešov: Grafotlač Prešov, s. r. o. ISBN 978-80-89568-08-6.
[6] KOTULIČ, R. et al., 2010. Finančná analýza podniku. Bratislava: Iura Edition, spol. s. r. o. ISBN 978-80-8078-342-6.
[7] KNÁPKOVÁ, A., PAVELKOVÁ, D., 2010. Finanční analýza: Komplexní průvodce s příklady. Praha: Grada Publishing, a. s. ISBN 978-80-247-3349-4.
[8] MARINIČ, P., 2008. Plánovaní a tvorba hodnoty firmy. Praha: Grada Publishing, a. s. ISBN 978-80-247-2432-4.
[9] NEUMAIEROVÁ, I., NEUMAIER, I., 2005. Index IN05. In: *European Financial Systems: Proceedings of the International Scientific Conference*. Brno: Masaryk University in Brno. p. 143-146. Available at: http://is.muni.cz/do/1456/sborniky/2005/evropske-financni-systemy-2005.pdf.
[10] RŮČKOVÁ, P., 2011. Finanční analýza metódy, ukazatele, využití v praxi. Praha: Grada Publishing, a. s. ISBN 978-80-247-3916-8.
[11] VOCHOZKA, M. 2011. Metódy komplexního hodnocení podniku. Praha: Grada Publishing, a. s. ISBN 978-80-247-3647-1.
[12] ZALAI, K. et al., 2010. Finančno – ekonomická analýza podniku. Bratislava: Sprint dva. ISBN 978-80-89393-15-2.
[13] StatSoft, Inc. (2013). STATISTICA (data analysis software system), version 12. www.statsoft.com.
[14] ŠOFRANKOVÁ, B., 2013. Zhodnotenie stavu a vývoja finančnej situácie ubytovacích zariadení pomocou predikčných modelov. Prešov: Bookmann s. r. o. ISBN 978-80-8165-027-7.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

ANTI-CRISIS MANAGEMENT OF THE SOCIO-ECONOMIC SYSTEMS

Professor Parkhomchuck Marina,

Professor Golovin Alexey,

Assistant Professor Golovin Artem,

South-West State University, **Russia**

ABSTRACT

This paper offers technical approaches of business rationalization of model of anti-crisis management as purposeful system aimed at detection and prevention of crisis situations, determination of paths of effective economic development of social and economic systems based on priority of internal environment factors changing under the influence of external conditions.

Keywords: anti-crisis management; crisis situations; external environment of organizations; effectiveness of economic stability.

Changes in economic and political environment of Russian economy under the influence of globalization process and instability of world economy resulted in necessity of adaptation – manufacturing of competitive (in terms of price and quality) products which meet the international standards; promotion of economic security; increase in quality of life, etc.

Abovementioned conditions resulted in troubles in raw manufacturing enterprises of sugar industry, and it is objective reason for research due to the following: smooth process cycle and complete plant capacity utilization require production plants to be provided by domestic raw material; increase in effective production of beet sugar raw material facilitates the development of other sectors of national economy; governmental, social and political importance of final products optimally compatible in terms of process cycles (sugar, bakery and confectionery products, dairy), employment and quality of life.

Problem solution results in necessity of rationalization of anti-crisis management system as purposeful process of detection and prevention of crisis situations, determination of paths of increasing of stability of economic development based on internal environment adaptation under the influence of external international environment.

Theoretical and practical aspects of anti-crisis management at the different social and economic levels were studied by foreign researchers – D. Aguilera, M. Pearson, K. Mishra, I. Mitroff, L. K. Harrigan, J. Caponigro, etc. [1-4] and Russian scientists – E.P. Zharkovskaya, B.E. Brodsky, A.A. Belyaev, E.M. Korotkov, etc. [5-6]. However, direct influence of external economic and political factors and international environment complicate management issues, requiring actualization and improved methods for solving.

It is reasonable to configure the anti-crisis management in the light of the detection and prevention of crisis situations, ascertaining the possibilities of effective economic development of social and economic systems based on changes of internal factor priorities under the influence of external environment [7].

This paper offer the following priorities of factors for the anti-crisis management:

– internal: purposes and tasks; institutional and management structure; technology; competitive economic capacity; economic resources and human capital; differentiation and integration; organizational behavior of the staff; organizational culture; economic, legal and social responsibility of the organization;

– external factors of direct influence: legislation and governmental bodies; state of the economy; technologies and process environment; suppliers; customers; international policy and impact factors; competitors; indirect influence: political and economic changes; scientific, technical and technologic progress; market environment; social and cultural changes; international events and relations.

Employee behavior against external factors of direct influence determines "image" of the organization [8]. According to researches, raw manufacturing enterprises of sugar industry in Kursk region are of second phase of sales orientation – inadequate adaptation to external changes in the form of "rudimentary" enterprise. A comprehensive approach is needed to configure the anti-crisis management and reach "marketing orientation" phase – effective enterprise and use of market relations [9].

This paper describes the proprietary scheme of development and implementation of program of stabilization of effective anti-crisis management based on coordination of economic interests of business entities and the government in the light of changes of external factors.

Proposed program is based on use of actual possibilities and configuration of economic strategy of stable anti-crisis management based on achievement of certain goals and interests of all participants in implementation of this process.

More specifically, increase in production means the following:

– for the government – handling an import substitution problem, job creation, provision of the industry with the raw materials, creation of stable food market, etc.;

– for customers – provision of the domestic manufacturing with competitive (in terms of price and quality) products, stabilization of living, increase in quality of life, etc.;

– for raw manufacturing enterprises of sugar industry – arrangement of sustainable development conditions by means of own funding sources.

Program of stabilization of anti-crisis management provides for the following elements:

– product stewardship – development of rules and techniques of examination and creation of product and raw material markets;

– pricing – monitoring of behaviors in relation to market environment, price competition, changes of demand and supply, etc.;

– interaction with manufacturing resource market offers the possibility to choose preferred suppliers;

– investment activity for the development of production based on retooling and modernization, costs optimization, etc.;

– stimulation of staff's orientation during handling strategic missions and objective fulfillment, social responsibility;

– prevention of insolvency (bankruptcy) through a tracking of crisis situations.

Model of anti-crisis management and stabilizing of company development is based on comprehensive assessment of business state with determination of type, level and size of crisis in order to choose the neutralization method [10].

Various business state assessments of raw manufacturing enterprises of sugar industry in Kursk region for crisis and bankruptcy demonstrated the following.

Financial solvency in terms of balance structure – current liquidity is 26% less than regulatory value, deficiency of own circulating assets increased to 86 % indicating lack of real possibility to restore the solvency in such conditions.

W. Beaver's three-parameter system (Beaver's coefficient, current liquidity, economic profitability) – 2nd group, "5 years before the bankruptcy"; two-parameter estimation (financial leverage and asset coverage with net working capital) – 3rd group, "1 year before the bankruptcy".

US two-factor model based on assessment of current liquidity and leverage ratio – bankruptcy is unlikely.

E. Altman's model revealed very high bankruptcy probability, i. e. complex index of five-factor model is less than regulatory value (up to 1,8) and equals 0,88. Such situation is characterized as "deep financial crisis".

Russian parameter-based technique (absolute liquidity, "critical estimation", current liquidity, current asset to total asset ratio, asset coverage, capitalization, financial independency and stability) diagnosed 4th class with instable business state and risky partner communications.

Final estimation of the business state is the following: high bankruptcy probability and deep financial crisis.

Russian production management system is costly and characterized by low efficiency of administrative work and incorrect recognition of the external factors. Impact analysis for industrial-grade sugar beet revealed that profit has decreased by RUB 580 billion (price rise resulted in that the profit increased by RUB 601 billion, but falling-off in sales and cost development decreased it by RUB 981 and 200 billion, correspondingly).

This situation can be improved by internal economic and administrative measures: divestiture and creation of stable economic growth model based on increased use of basic and circulating assets, asset management, business activity, revenue and profit maximization [11].

Program of economic stabilization and anti-crisis business state normalization should be implemented step-by-step according to internal mechanisms.

1. Short-term (1-2 years, immediate) phase – deep financial and economic estimation of business state in the light of property type: size and quality of the economic capacity (large, medium, small); property state; identification of crisis type and level (accidental, expected, destructive, mild, short-term, long-term, etc.); bankruptcy probability.

Then it is necessary to develop stabilization measures aimed at structure optimization, increase in production and sales, increase in revenue through rational and effective use of economic capacity, resource-saving factors (technical and process, organizational, social and economic, etc.). The purpose of this step is economic and financial

stabilization through yield income which is sufficient for current operations, debt coverage, corporate recovery and financial stability. At this step, bankruptcy threat is delayed.

2. Middle-term (3-5 years, tactical) phase – restoration of economic stability and business state based on development and implementation of production and management development and growth model using own funding sources. In fact, financial balance model (between possible generation and obligatory consumption of own financial resources through increase in profit invested in increments of current and non-current assets) is developed. It makes restoration of sustainable development possible on the principles of self-financing. Therefore, such development model can be considered as optimal.

3. Long-term (7-10 years, strategic) phase – development of the model of economic growth stability, providing competitive recovery through the measures aimed at long-term maintenance of achieved financial balance. Financial stabilization phase is considered to be successful if increments in economic growth rate correspond to increment in market value in prospect.

Methodical tools of creation of anti-crisis organizational structure of management for raw manufacturing enterprises of sugar industry in Kursk region offer the program and middle-term (3-5 years) tactical phase of economic rehabilitation (Fig. 1).

Program of anti-crisis financial rehabilitation and economic stabilization by means of internal mechanisms

1. Optimization of production volume and sales	2. Optimization of cost value, revenue and sales profit	3. Reorganization of enterprise management system	4. Reorganization of providing system and production distribution
optimal ratio between basic assets and current assets	rational use of material resources	creation of modern management	procurement
implementation of modern manufacturing processes	cost optimization for labor and time	rationalization of management structure	improvement of production distribution
technical production development	workplace and shop-floor discipline	optimization of management expenses	contract and legal relations
rational resource use	staff training	increase in effectiveness of administrative work	increased marketing effectiveness
implementation of international product quality standards	manufacturing structure optimization	motivation of managing staff	creation of reliable sales network
increased productivity and performance	breakeven production	increased HR policy effectiveness	selling cost optimization

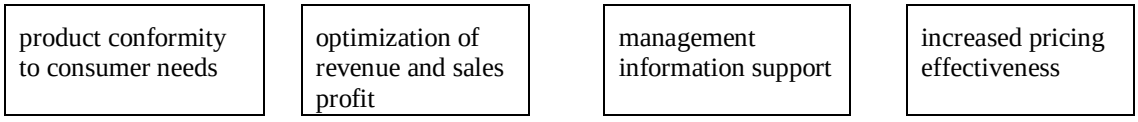


Fig. 1. Flow chart of anti-crisis enterprise management

This paper offers proprietary system of effects caused by implementation of measures aimed at creation of the anti-crisis management. This system is integrated system of criteria and parameters aimed at reducing the business risks. Economic effectiveness of proposed anti-crisis management system was calculated for three groups of parameters in order to determine risk class and total economic stability estimation (Table 1).

Table 1

Comprehensive economic assessment of the measures aimed at stabilization of effective anti-crisis enterprise management

Parameter	2015	2018	Index, unit fractions
Effectiveness of manufacturing control			
Return on investment for land, RUB thousand per 100 ha:	1435	2737	1,91
- revenue	446	1198	2,68
- yield gross	271	794	2,93
- profit			
Labor efficiency, RUB thousand per 1 employee:	828	1579	1,91
- revenue	257	691	2,69
- yield gross	156	458	2,93
- profit			
Return on investment for key assets, based on, RUB:	0,36	0,69	1,92
- revenue	0,11	0,30	2,73
- yield gross	0,07	0,20	2,86
- profit	0,23	0,44	1,93
Profitability (cost recovery), unit fractions	0,03	0,09	3,00
Return on assets, unit fractions	0,12	0,35	2,92
Stability of economic growth, unit fractions			
Overall performance rate	-	-	2,53
Financial state			
Financial solvency, unit fractions			

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
SGEM2016
3rd INTERNATIONAL MULTIDISCIPLINARY

Absolute liquidity ratio (≥0,1-0,7)	0,16	0,38	2,37
Quick ratio (opt. 1,0)	0,76	1,02	1,34
Current liquidity ratio (opt. 2,5-3,0)	1,49	2,51	1,68
Current asset to total asset ratio (≥0,5)	0,41	0,61	1,49
Average solvency level	-	-	1,72
Financial stability, unit fractions			
Capitalization ratio (≤ 1,5)	3,30	1,51	1,54
Utilization factor of own funding sources (opt. ≥0,5)	-0,86	0,28	1,02
Equity to total assets (≥0,4-0,6)	0,23	0,42	1,83
Equity plus long-term debt to total assets ratio (≥0,6)	0,71	0,78	1,10
Average financial stability level	31,11	64,42	2,07
Risk class	4th	3rd	-
Overall economic stability level	-	-	2,11

Calculations demonstrated that total resultative production management indicators increased 2,53-fold. Land use area, manpower in full employment, rationally used and optimal fixed capital assets remain constant.

Financial state assessment revealed the possibility of solvency increment by 72%. Other assessments revealed the possibility of bringing to regulatory limitations with optimal functioning.

During development, the main issue was coverage with own funding source (in 2015, deficiency was 86% and tended to grow [12]). A task was set to bring this parameter to positive value (56% of optimal value) by means of profit and decreased growth of property assets (equity). Capitalization level and economic independence level will exceed the regulatory values, and financial stability will rise by 10% (30% above the regulatory value).

In general, measures aimed at the creation of the effective anti-crisis management revealed the possibility of 2,11-fold growth by means of own funding sources (profit) and full use of internal mechanisms. Further development and qualitative economic growth require additional investment from external sources.

CONCLUSION

Proposed methodology of business rationalization of anti-crisis management as purposeful system makes it possible to identify and prevent the crises and determine the paths of effective economic development of social and economic systems based on priority of internal environment factors changing under the influence of external conditions as well as internal rational resource use mechanisms.

This approach is characterized by the following advantages: information availability and comprehensiveness if applied to social and economic systems.

REFERENCES

[1.] Aguilera, D. (1998). Crisis intervention: Theory and methodology (8th ed.). St. Louis, MO: Mosby.

[2.] Pearson M., Clair A., Misra K., Mitroff I. Managing the unthinkable (crisis management) // Organizational Dynamics. 1997. V. 26. № 2.

[3.] Mitroff I.I., Pearson C.M., Harrigan L.K. The essential guide to managing corporate crisis. N.Y., 1996.

[4.] Caponigro J.R. The crisis counselor: a step-by-step guide to managing a business. Chicago, 2000.

[5.] E.P. Zharkovskaya. Anti-crisis management / E.P. Zharkovskaya, B.E. Brodsky.– M.: Omega, 2011. – 358 p.

[6.] A.A. Belyaev. Anti-crisis management: tertiary student book / A.A. Belyaev, E.M. Korotkov. – M.: UNITY-DANA, 2013. – 319 p.

[7.] A.A. Golovin. Theoretical justification of development of self-reliance of Russia [text] / A.A. Golovin // Fundamental researches. – 2015. – №11 (part 1). – P. 127-132.

[8.] A.A. Golovin. Special aspects of risk assessment in use of goal-oriented enterprise management system / A.A. Golovin // South-West State University newsletter. – 2011. – №6-1 (39). – P. 125-127.

[9.] A.A. Golovin., I.P. Shubnaya. Methodological aspects of regional cluster creation / A.A. Golovin., I.P. Shubnaya // State and society: yesterday, today, tomorrow. 'Economics' series. – 2014. – №9(2). – P. 56-62.

[10.] M.A. Parkhomchuk. Development of a strategy of human resources management in the region / M.A. Parkhomchuk // South-West State University newsletter. – 2011. – № 6-1. – P. 72-76.

[11.] M.A. Parkhomchuk, A.Yu. Zhang-Seng. // Fundamental researches. – 2015. – № 6-2. – P. 415-419.

[12.] M. Parkhomchuk. Staff motivation of crisis management / M. Parkhomchuk // Science and humanity. – 2014. – №6. – C. 139-145.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

ASPECTS OF CHANGE OF AN ECOLOGICAL SITUATION AND THEIR INTERRELATION WITH CONDITION OF LABOUR RESOURCES

Phd Andrey Sergeevich Sheviakin

South-West State University, **Russia**

ABSTRACT

In article discusses the influence of environmental conditions on health and lifespan of people in modern society, also by studying the number of cases of cancer represented by the assumption of low efficiency of the traditional approaches to environmental security, which does not consider many factors of dangerous influence on people. The aim of the study is identification of interrelation between an ecological situation and cancer cases. An attempt was made to identify the factors of influence aren't traditionally relating to ecological indicators. In article also discusses constantly increasing number of devices of a wireless communication. General conservation of key environmental indicators in the country is indirect evidence that problems in this sphere is not being up to the end of the study. Conclusion is that a lot of wireless equipment is the serious destructive factor for human health and in particular the number of canser cases. Nowdays governments of different countries spend a lot of money for variable projects in the field of ecology, but in many cases these projects and measures have no result, because a huge number of different technical equipment made a great harmful influence.

Keywords: manpower, ecological indicators, diseases, wireless equipment.

INTRODUCTION

Nowdays people all over the world pay a great attention to the ecological problems. Manufactures must be not only powerful and profitable, but ecologically pure. That's why gradual development of economy sets new requirements to the training of labour resources. It's actually to find some features that's help people from other countries live without so much harm to the nature.

Nowdays people all over the world pay a great attention to the ecological problems. Manufactures must be not only powerful and profitable, but ecologically pure. That's why gradual development of economy sets new requirements to the training of labour resources. Only well educated specialists can provide ecologically pure development of Russian economy. In this situation we can see hot discussion about the future of national educational system – system of formation of a labour force. Specialists don't like the haste in training skilled workers – we fully imitate American and European schemes.

Unfortunately our educational administration don't try to adapt foreign methods and systems to Russian conditions and people. And after all of it we always ask seditious question: "Why can't we use our natural recourses so effective and

ecologically pure as in economically developed countries?" It's actually to find some features that's help people from other countries live without so much harm to the nature.

MATERIALS AND METHODS

The execution of the work was carried out with the using of different scientifical methods. In particular: comparative method, methods of analysis and synthesis, statistical method, etc. It allowed to study the practice of environmental impact on human health and labour resources and attempt to assess cost-effectiveness in the field of ecology.

RESULTS AND DISCUSSION

In recent years the extremely actual direction of development of society is nature protection activity. A lot of attention is paid to protection of rare animals, reproduction of forests and city gardening. From year to year the volume of the financial resources allocated for environmental protection also increase.

Of course, people may use only peaceful to the nature technologies. These terms and comprehension of necessity to be cautious with ecology make people's mentality very kind and attentive to the nature and ecological problems.

Table 1 – Costs of environmental protection across the Russian Federation

Indicators	2003	2005	2007	2009	2011	2012	2013	2014
Volume of costs of environmental protection, bln. rubles	173,8	233,9	295,2	343,3	412,1	445,8	479,4	536,3
Volume of costs of environmental protection as a percentage to GDP	1,3	1,1	0,9	0,9	0,8	0,7	0,7	0,8

In 2003 it was spent 173,8 billion rubles that made about 1,3% of GDP, and in 2014 already 536,3 billion rubles. And though in structure of GDP the share decreased to 0,8%, in general the growth by 3 times is observed.

Modern people's needs contribute to increase of productivity of labor activity and the rhythm of life, which entails the necessity of introduction and development of new technologies such as mobile phones, wireless Internet and other modern equipment, which use increases the level of influence of various radiations and fields on the person. These effects are not studied up to the end, but there are quite specific trends that clearly indicate an increase in the load on the human body. In this regard it looks actual to analyze the changing of dynamics in the number of patients with first time in life established diagnosis of a malignant new growth [1].

For example, Japanese traditionally have a few of natural resources and it bring up very good feature of their characters – careful attitude to their nature and ecology. And, first of all, in spite of different characters eastern people as western one give a great attention to preservation of ecology. Especially, it's very actual for eastern countries, because a lot of people sometimes live at a small territory. Shortage of natural resources brought up in the eastern people and in system of forming labour force necessity of respect and careful attitude to the nature and ecology.

Unfortunately, in Russia it was like some harmful tradition to use resources without thoughts about the future. As a result we have a lot of cities with horror ecological situation. And nobody know when can we cross a side of ecological disaster. But in Russia the main attention was given to the results, to the achievement of the purposes, but not to the price of these wins. That's why Russian people traditionally don't think about nature and ecology.

Of course, the main factor of pollution in Russia is economic activity of people. However, the situation is compounded by the fact that Russian territory is polluted not only by the inner sources but also from outside. The environmental situation in Russia is constantly deteriorates due to the negative influence of anthropogenic pollution from neighbor countries [2].

Due to the flat nature of the European part of our country, it is open to all winds. As a result, polluted air from the Western and Central Europe enters to the Russian territory, as well as from other countries such as: Ukraine, Belarus, Estonia, Latvia, Lithuania, Norway, Finland, etc. For example, from the territories of Ukraine, Poland and Germany on the Western part of Russia every year falls more than 1000000 tons of sulphur and 500000 tons of oxidized nitrogen.

Adversely affect to the air quality of our country and wind with industrial emissions from the Ukraine. Of course, these emissions increasingly effect the environment of Belarus and Estonia too.

To the condition of atmosphere of Siberia adversely effect the migration of polluted air from industrial regions of Kazakhstan. A serious danger for the ecological situation of Russia is shifting with the winds from Central Asia.

A number of researches shows that modern gadgets have no influence to human health. First of all, this position is supported by researches conducted by the major producers and suppliers of equipment. At the same time, some experts agree that the modern anthropogenic environment, especially characteristic for large megalopolises, has a negative impact on human health [3].

In the conditions of the formed deficiency of a manpower in the Russian economy it is extremely important to study and identify the factors of premature mortality of employable population at the present stage.

The huge contribution to death rate of the population is made by oncological diseases, in particular they take the second place after the cardiovascular diseases. In this regard it is important to analyze the dynamics of oncological diseases rates and also to compare the key indicators for different regions of the country. Dynamics of morbidity with the first time in life diagnosis of a malignant new growth is given in figure 1.

Figure 1 illustrates the extremely negative trend of constant growth in the number of diseased, so during the studied period the growth was over 15%. The main problem in this sphere is that the huge amounts of money allocated for fight against oncological diseases due to the lack of highly effective treatment and prevention go only for fight against consequences and early detection of the disease. At the present stage of development of medicine there are no tools for regulation this indicator [4].\

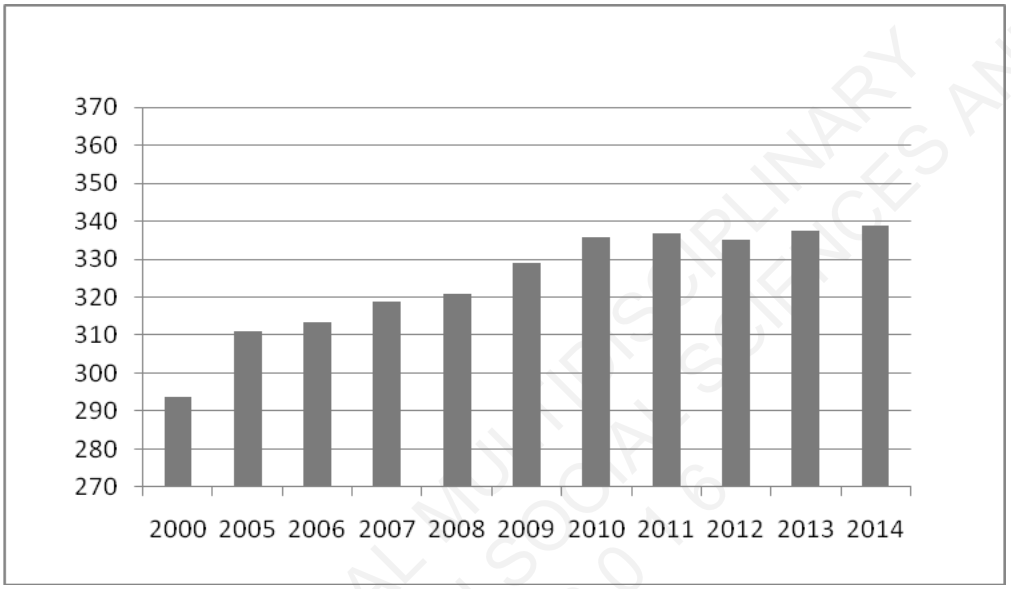


Figure 1 – Morbidity with the first time in life diagnosis of a malignant new growth per 100 thousand population of the Russian Federation

The special concern is the fact that some main indicators of the ecological situation in the most part of the regions of the country get better recently. In comparison with the end of the 1980th years harmful air emissions in the in the Russian Federation decreased approximately twice. In the table 2 shows information of the former Ministry of natural resources of the Russian Federation and since 2006 information of Rosprirodnadzor and Rostekhnadzor.

Table 2 – Emissions of air pollutants from stationary and mobile sources, thousand tons

Indicator	2000	2003	2005	2007	2010	2011	2012	2013	2014
Emissions of atmospheric pollutants, thousand tons	32301	34652	35835	35532	32353	32628	32469	32063	31228

Information from the table 2 shows that in recent years there is no growth of emissions in the atmosphere, moreover there is a small reduction of their number for 13% in 2014 in comparison with 2005. The most active growth of quantity of oncological diseases accounts for the first half of the 2000th years.

At the same time began the mass distribution of a wireless communication in Russia. First of all it was mobile phones. Also emissions in the atmosphere increased. Further emissions in the atmosphere started decreasing, but the quantity of oncological diseases continued to grow lower rates [5].

CONCLUSION

Now continuous growth of number of the used devices of a wireless communication is observed, the network of base stations of the telecommunication companies extends. A lot of these stations are located in close proximity to the places of human habitation. According to Roskomnadzor of the Russian Federation in 2015 the number of base stations in Russia exceeded 400 thousand. At the same time for the last 3-4 years growth was about 100% and their number continues to increase rapidly.

And, of course, we must bring up the careful attention to our nature and ecology, not only at work, but in daily life to – for example, put litter only into garbage urn.

The creation of progressive and competitive system of forming labour resources will make it possible to get good results in economy and in development of the whole society in the future. It'll help us to make development of our economy ecologically pure. Non-standard approach to people and to solving problems which is based on age-long peculiarities of Russian people – we must adapt our mentality to the reality of modern world and it's necessity to give attention for saving wild nature – this is especially important to our country with very rich nature.

Disappointing conclusion is that the high costs for urban greening and improvement of the environmental situation are in many aspects depreciated by use of a huge number of wireless equipment which radiation is considered almost harmless. But equipment producers and service providers hold back possible consequences of its use. Finally it leads to the noticeable increase of quantity of diseases of malignant new growths and increase mortality from them. This in turn causes huge damage to the human capital and economic capacity of the country in general. Operation of different producers of modern equipment give big sum of money for countries by taxes and other payments, they also have lobby to promote their products. But people must compare it with losses from ecological problems and harmful influence to labour resources.

REFERENCES

[1] Minakova I. V. To the question of increase of efficiency of management of socio-economic development of the russian regions, Economy and society, 2015, № 3-2(16), pp 346-350

[2] Korzhova G.I. & Suslikova O.A. & Kovarda V.V. & Tsukanova N.E. Manpower of kursk region as the base of the sustainable development of municipal district asymmetry (evidence from kursk region), SGEM International Multidisciplinary

Scientific Conferences on SOCIAL SCIENCES and ARTS Proceedings, 2014, pp 487-492;

[3] Shevyakin A.S. & Kovarda V.V. The analysis of the modern regional economy, In the world of scientific discovery, 2011, pp 549-559

[4] Minakova I.V. & Bukreeva T.N. & Kovarda V.V. Determination of the optimal investing variant in innovative project, World Applied Sciences Journal, 2013, V.7, pp 838-843

[5] Katyhin A.I. & Barbysheva G.I. Analysis of the development of health of Kursk region, Delta science, 2016, № 1, pp 97-106

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

ASPECTS OF SMOOTHING OF SPATIAL POLARIZATION IN REGION ECONOMY

Assoc. Prof. Dr. Alfiya Zinovyeva
Assoc. Prof. Dr. Svetlana Shabalina

Kazan Federal University, **Russia**

ABSTRACT

The article describes the basic concepts related to the process of spatial polarization in the economy of regions of Russia. We analyzed the main factors contributing to the spatial smoothing of economic polarization in the region. Specifically considered successful world experience reduce spatial disparities in the country through the development of the tourism industry.

Keywords: economic area, the tourist industry, smoothing the spatial polarization of economic

1. Introduction

The concept of "economic space" forms the starting representation of the territory, is the basis for the phenomenon of spatial polarization and the main definitions of the regional economy.

In modern scientific literature can be found a large number of definitions of "economic space" concepts can be found in the modern scientific literature. The most optimal, our opinion is the following: economic space - is a rich area, accommodating a plurality of objects and the relationships between them: the settlements, industry, economic development and recreation areas, transport and utility networks. Each region has its internal space and an external space [1].

The spatial organization of the economic system of Russia with a variety of resources and climatic conditions, with the growing scale and complexity of the economy cause the objective necessity of the study and further streamline its regional structure, under which is commonly understood as a relatively isolated geographically and production of education and their relationship in a holistic economic complex.

2. Theory

Reasons for the polarization of Russian economic space in our view lies in the fact that the macroeconomic system in competitive markets, the law of the average rate of profit, which expresses the tendency to produce equal quantities of return on invested capital is equal.Причиныполяризацииэкономическогопространства Россиипонашемумнениюзаключаютсявтом,
чтовмакроэкономическойсистеменаконкурентныхрынкахдействуетзаконсреднейнормы прибыли,
выражающийтенденциюкполучениюравнойвеличиныприбылинаравныйавансированный капитал.

surplus value / advanced capital = 100% profit rate, (1)

As a consequence, part of the surplus value created by labor-intensive industries (with a low organic composition of capital), is assigned to capital (with a high organic composition). This

law reinforces the industrialized regions, where the focus capital-intensive sectors of the economy and slows economic growth in backward. However, after analyzing all the statistics you can easily make sure that it is the regions, where the focus capital-intensive sectors of the economy, are in the most difficult situation

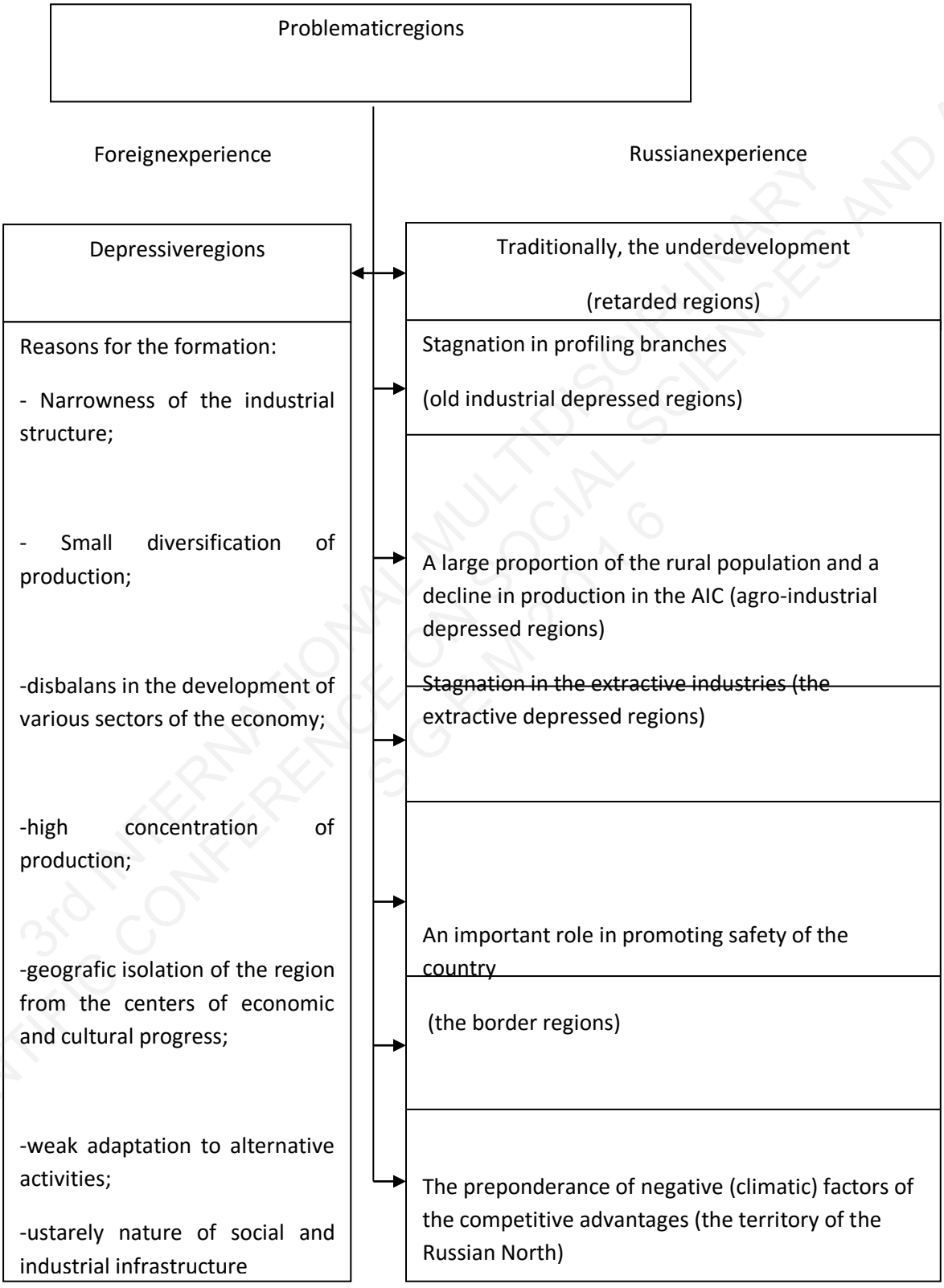


Fig.1. Typology and the cause of the of problem regions in the foreign and domestic experience.

Also in the regional economy it is traditionally accepted to allocate objective and subjective factors influencing the spatial polarization regions. The objective factors influencing the spatial polarization include: natural and geographical disparities between the regions of the country, the availability of economic resources development, technological specificity and specialization of production areas, the extent of its economic of isolation, infrastructure development. Subjective factors enhancing the spatial polarization are the determinants of institutional, infrastructure and functionally-orientation organization, i.e. the type of political and territorial structure and character of the distribution of power and economic of authority, tradition and practice of etatism, the presence and position of major corporate structures. [2].

We would like to note that the appearance of of a large number crisis regions, the so-called areas with "specific developmental disorders" (with acute social, economic, political, cultural and environmental problems), amplifying spatial polarization, and in addition to the factors discussed above have a significant impact:

- the devastating impact of natural or technological disasters (eg, technological catastrophe in Fukushima in Japan, which occurred as a result of the strong earthquake that has led to the the fact that there is deactivated the seventh part of of her land);
- large-scale socio-political conflicts (for example, military operations against terrorist extremist Muslim groups in Syria with the participation of the Russian Air Force, have resulted to an escalation of relations between Russia and Turkey. In 2015, one of the sanctions measures against Russia to Turkey, a ban on tourist exchanges and charter flights, which will undoubtedly have a negative impact on the tourist season in 2016 on the coast of Anatalya);
- current level of production and downs of life, causing the destruction of the accumulated economic potential and considerable dimensions of the forced labor migration (post-crisis response to negative developments in the Middle East, a huge flow of forced migrants into the territory of the EU, the terrorist attacks in Paris and Belgium).

In our view the list of factors influencing the amplification spatial polarization is much wider. According to the authors, one of these factors exercising significant (significant) effect on the increasing polarization of the economic space of Russia is the process of globalization. We believe that the changes taking place in Russia today are atomic component of the globalization process, i.e. "A reflection of the specific transitions and transformations that are experiencing now the world in general» [3].

Would like to mention that an important factor of the globalization process, which may have an impact on the amplification or in front of smoothing the spatial polarization can be attributed constant expansion the global tourism market. According to the forecast of development of tourism in the world, compiled by the World Tourism Organization (UNWTO) global tourist arrivals in 2020 could reach 1.56 billion. People, of which 1.18 billion. Tourists will travel within the their regions.Ежедневномировойтуризмдает 2,4млрд. долларовСША. It is quite obvious that the development of the tourism industry causes the that is directly proportional to the economic benefits derived from the sale of the tourist product, increasing, increases the level of competition, and as a result, the spatial polarization between the tourist market participants. According to the authors, for smoothing the spatial polarization must be considered that the creation of attractive tourism product is the first and most important objective of the tourism industry. Keep in mind that the tourist

pays does not hotel accommodation, not a new sensations and getting to know with the unknown; not a steak or a hamburger in a restaurant, and comfort, attention, relaxing ambiance. Therefore, the creation of a tourist product begins with a study of its consumer qualities and properties, to identify the most attractive aspects for tourists. They are reference points in the development and implementation of the tourism product.

The problems spatial polarization in regional development is is not pure Russian. In Western scholarship economists regional experts annually held considerable amount of research dedicated to the problem of smoothing the spatial polarization, for example L.Slokombe (L. Slocombe) considers the problems of territorial inequality in the UK for example, Scotland, England and Wales, and K. Jansen (C. Jensen) [4] analyzes the spatial development of the eastern and western regions of Sweden. This is one of the conclusions Janson seems to us interesting enough: the researcher proposes to divide large territorial units (regions) into multiple smaller sub-regions, so, in my opinion, increases the level of manageability, helping to reduce spatial polarization level.

Table 1.

External and internal factors of territorial development

Domestic	External
Natural - climatic conditions, availability of natural resources, etc... Population - demographic structure, population dynamics, internal migration flows, level of education, etc.. Economic - the existing structure of the economy with the release of the dominant industries, the part of small and medium sized businesses, the part of the service and information sectors in the economy andect.. Financial - Occupancy of the territory's budget, the existence and size of the budget deficit, the basic orientation costs (social orientation, etc.).	Nearby areas - development of their economies, the intensity of the economic, cultural and other relations with them, etc .; The influx of foreign investment. External migratory movements. Both direct and indirect state support of area - the creation of programs of development of territories and the macro-regions, the formation of free economic zones and industrial parks, transfers, special programs, budget investments and credits, financial guarantees, financial support to regional sectoral industrial complexes and large enterprises, etc.

In theory, regional economy described a significant number of methods, instruments and ways of smoothing the spatial polarization, but not all of the described methods of leveling its consequences has the practice of implementation and positive results. Shall consider the most considerable, in our view, examples of foreign experience in smoothing the spatial polarization, provided the development of the tourism industry.

3. Statistic

United States - one of the most progressive countries in the world, part of the top three socio-economic indicators. However, the US as well as Russia concerned about the spatial polarization. For example, the states of North and South Dakota have long been considered among the most "depressed" regions of America, as virtually had no population or economic

activity,[1]as practically had no population or economic activity.[2]However, the transition of these states from the labor-intensive activities to a comprehensive industry allowed to bring these territories to the forefront. For example, in North and South Dakota are actively developing various types of tourism: sports (on the territory of both states are allowed to freely carrying and possession of weapons, almost every second inhabitant is an avid hunter), cultural, educational (for example, in the town of Mitchell works "The world's only Corn Palace" - a building sheathed corn cobs and leaves.Обшивкаобразуетразнообразныепатриотическиекартинынатемуколонизации.Inside the building - gift-shops and the like concert hall); sightseeing and historical (tourist attraction Mount Rushmore National Memorial, in its granite rock carved a giant relief height of 18.6 meters, which is sculpted portraits of four US presidents: George Washington, Thomas Jefferson, Theodore Roosevelt and Abraham Lincoln). In this case both the state belong to the central tourist and recreational zone of the USA, which attracts the lowest number of tourists, so most of the territories of these states engaged in agriculture, has no major cities and as a result almost no interesting tourist objects display.

We consider it necessary to consider further the tourism industry of the United States, since the development of tourism, of course, contributes to smoothing the effects of spatial polarization due to the receipt of significant profits from the sale of tourist products, creating jobs, improving local infrastructure, etc. The United States is in second place after Europe in terms of the development of the tourism industry and is prepared by the industry the highest in the world arrived at states account for about 25% of the volume of international tourism (annually they visit about 45 million. Tourists). Here in America, as in Europe, the main stream is inland tourism (tourist exchange between the United States and Canada, as well as between the US and Mexico). In the US, the world's largest network of the hotel industry, transport industry, which also contributes to the development of domestic tourism. The center of attraction of tourist flows due to the presence on its territory a large number of tourist and recreational resources are: the City of New York, Washington, Los Angeles, San Francisco, Philadelphia; California, Texas, Florida, California and Hawaii. . Every year more than 150 million Americans travel on the continent, including: cars - 90%; planes - 7%, train - 3% [5].

The tourist boom has led to the fact that a lot of work on the identification and improvement of the most attractive places for recreation, unique natural objects and landscapes done in the United States, included in the tourist routes; a special network of highways that allows states to cross in all directions, so that tourists have the opportunity to see the most interesting parts of America. The federal government, states and local authorities to meet tourist demand, actively organized parks, campgrounds, national tourism and recreation zones, etc. In parallel, formed new kinds of production to ensure the needs of the tourists a variety of equipment and special vehicles, and so on. All of this, of course, contributed to the reduction of spatial polarization between states.

In the United States it has the largest number of the world's entertainment theme parks, special tourist areas that attract huge number of tourists from around the world. Forexample, inOrlandoFloridaarefunctioning.:

– Walt Disney World Resort - a year on average is visited by 50 million tourists.. It consists of four theme parks, each of which can be regarded as an independent park:

[1] 46 and 47 place on th population density of the USA.South Dakota– 4,1humans per km^2.NorthDakota – 3,6humansperkm^2 (on November 2009).

[2]Is traditionally the main profitable economic sector in these states was agriculture.

Magic Kingdom (the most visited park in the world) - More than 15 million people..per year, Epcot - up to 10 million people.. per year, Disney's Hollywood Studios - about 10 million people.. per year, Disney's Animal Kingdom - 10 million people.. in year; two water parks: Typhoon Lagoon - about 2 million people.. a year, Blizzard Beach - about 2 million people.. in year; as well as 23 thematic hotel, numerous shops, cafes, restaurants and other entertainment venues.Universal Orlando Resort (самыйсовременныйразвлекательныйцентрирабочаякиностудия – всреднемвгодпосещаютболее 10 млн. туристов.

– Sea World (the largest amusement park in the world, representing the marine fauna) - an average of a year to attend the 6 million tourists..

In Los Angeles, state of California located:

– Disneyland Park (the amusement park of "Walt Disney" area of about 135 hectares) - an average of a year visited by about 15 million tourists.. The composition of the Disneyland Park also includes the following parks and themed areas: Disney Park's California Adventure - is visited annually by more than 5 million people, thematic areas - Main Street, USA, Adventureland, Frontierland, Fantasyland, Tomorrowland, New Orleans Square, Critter Country, Mickey's.. Toontown - visited annually by about 10 million people.Universal Studios Hollywood - the most popular a working film studio, located in Universal City Theme Park and Universal Studios (area of the park - 110 hectares) - an average of a year visited by about 5 million tourists.[6].

Also, as a way to of attracting large tourist flows can highlight the creation of special gambling zones. In the US, official playing area with highly developed infrastructure located today in Las Vegas, Reno, Carson City (Nevada); Atlantic City (NJ) - is second only to Las Vegas gambling among US cities; Jefferson County (West Virginia)[3]; in addition, casinos on Indian reservations (more than 300 casino) operate throughout the country; There are also floating casino, part of which is located along the Mississippi River and its tributaries, and the major seaports regularly go cruise ships with casinos on board. In the United States has the largest number of gambling zones in the world.

A positive for the region's experience in creating the special tourist and recreational zones with rapidly developing hotel management is also widely known. As an example, Turkey, on the economic development which greatly affected the tourism industry; when the level of unemployment in the country is 10-15%, about half the population is employed in the tourism industry, which consequently becomes a key component of economic policy.In this connection we note Antalia coast length of about 1,000 km, a rich variety of tourist and recreational resources, which the Turks themselves call "Turquoise Coast", "White Sea" or the "Turkish Riviera".Active development of the tourism industry in Turkey since the early 1990s has led to the fact that the whole coast was intensively built up hotel complexes (prevailing category 4 and 5 stars). Today Antalia coast - "Mecca" of the Turkish tourism - the number of hotels and bed-place is first place in Turkey, and the flow of tourists in the season up to 10 million people.. Since the beginning of the XXI century the number of rooms in the region is almost tripled, while the population of the region thanks to grew a tenfold [7]. At the same time all the tourist centers of Turkey demonstrate a higher quality of life than other regions, which demonstrates the effectiveness of the chosen economic development instrument.

[3]Since June 2010, a national referendum state officially permitted gambling: poker, roulette, etc. - http://casino.ru/community/topic/view?t=838.

4. CONCLUSION

Thus, the world economy is globalizing - the essence of the spatial polarization. All this leads to the asymmetry of the economic space and the emergence of so-called "growth points", stagnant regions and "depressed areas".

By itself the development of tourist infrastructure in stagnant or "depressive" region is an effective instrument for smoothing the spatial polarization, not only by creating better terms for business development. One of only construction of tourist infrastructure provides the emergence of new jobs, the inflow of taxes to the local treasury, which, as a consequence, leads to improved quality of life in the region and increase rate of economic growth [8].

In our opinion, the position of some subjects of the federation with the "specific deviations in development" has every chance of revitalization if Russia takes a mainstream position in world markets of high-tech industries: nanotechnology, arms, aerospace, nuclear industry, energy-saving technologies, the development of the tourism industry and others [9].Most of the "depressed" and stagnating Russian regions can produce output on a trajectory of stable economic progress-house by encouraging the development of small businesses, improve the local investment environment, the search for new markets that can easily be accomplished through the development of the tourism industry.

5. REFERENCES

1. .ZinovyevaA.A.Some Aspects of Regional Development in Terms of Spatial Polarization // Today and Tomorrow of the Russian Economy. Scientific-Analytical Collection. 2012. №. 53. – P. 161-163.
2. .Zinovyeva A.A. The Problem of Smoothing of Spatial Polarization in the Regional Economy // Problems of Modern Economics. 2011. №4 (40). – P. 253-258.
3. .Zinovyeva A.A. The Development of Regional Management by Smoothing of Spatial Polarization // Asian Social Science; Vol. 11, №. 11; 2015.P. 252-256.
4. See, for example, Slocombe L. Housing and english regionalism. – http://www.regional-studies-assoc.ac.uk/events/abstract.htm; Jensen C. Creating subregions within the region. The region of VastraGotaland seeks its Stability. – http://www.regional-studies-assoc.ac.uk/events/abstract.htm
5. Web Site- http://northamerik.ru/rekreaciya_i_turizm
6. entertaining parkshttp://usatourvip.com/parks.php
7. State Institute of statistics (Ankara, Turkey) – http://www.die.gov.tr
8. Shabalina S. A., 2009. Zoning of the territory of the Republic of Tatarstan for national and international tourism. Scientific notes of Kazan University. Earth sciences series, pp: 263-271
9. Shabalina S.A., Rubtzov V.A., PratchenkoO.V. Differentiation of the Territory of Tatarstan Republic into Zones Due to their Significance for Domestic and National and International Tourism//Mediterranean Journal of Social Scienses, Volume 5, No.24, November 2014. Rome, Italy, 2014. pp.398-403

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

ASPECTS REGARDING THE INTERLINKAGE BETWEEN ENVIRONMENT AND PRUDENTIAL RULES OF THE BANKING AND IT SYSTEMS

Adriana-Nicoleta TĂLPEANU

Florin-Cătălin ENACHE

The Bucharest University of Economic Studies, Bucharest, **Romania**

ABSTRACT

Considering the worldwide environmental changes over the last years, we are analysing in this paper different aspects of the interlinkage between environment and the current prudential rules of the banking and IT systems.

In the first part, we consider the general environmental aspects as classification of indicators, risks and the main international environmental standards.

In the second part, we describe the general aspects of the prudential rules on the banking and IT systems. We then highlight the history of IT and banks and we continue by providing information regarding the main prudential regulations on the banking area as the Basel Accords and on the IT area, considering the green computing legislation.

In the third part, we explore different ideas for a better interlinkage between the environment, IT and banking systems, considering the Banking Environment Initiative, Investment Leaders Group and the Green IT approaches and certifications. In addition, we propose different improvements in order to achieve a better interconnection between the environment, IT and banking systems.

In conclusion, we summarise the main points of the paper, focusing on the proposals highlighted in the paper and reflecting on the limitations and the changes to overcome them in the future.

Keywords: IT system, environment, prudential regulations, banking system, Basel, green IT

INTRODUCTION

Before starting the paper, it is important to ask ourselves the following 2 basic questions: "What is actually the environment?" and "What 'IT' and 'bank' really mean?"

Based on the information found in the Collins English Dictionary, the word 'environment' has an overall increase usage starting 1908 and its official definition is:

"1. external conditions or surroundings, especially those in which people live or work

2. (ecology) the external surroundings in which a plant or animal lives, which tend to influence its development and behaviour [13]".

The word "IT" is the abbreviation for "Information Technology" syntagma and its official definition is:

"The technology of the production, storage, and communication of information using computers and microelectronics [13]".

The word "bank" has its origins in Italian "banca" bench, moneychanger's table, of Germanic origin and its official definition is:

"1. an institution offering certain financial services, such as the safekeeping of money, conversion of domestic into and from foreign currencies, lending of money at interest, and acceptance of bills of exchange

2. the building used by such an institution

3. a small container used at home for keeping money [13]".

Now, understanding all the above official definitions, it is not that hard to realise that man is the interlinkage factor between all three worlds, being able to influence all of them.

Therefore, in this paper we would like to understand better not only the general environmental aspects but also the general IT and banking ones. In addition, we would like to assess the current status of the interlinkage between all three worlds and to propose new ones, considering mostly the prudential rules on the banking systems and the IT area.

1. MORE ABOUT THE GENERAL ENVIRONMENTAL ASPECTS AS INDICATORS, RISKS AND STANDARDS

The environment is a set of interrelationships which was organized and improved the operating mechanisms during time, starting from the geological, morphological, biological ones. It began to be altered, degraded, and artificialized since demographic time until today. The coexistence of these times cannot be denied, especially considering the fact that the economic and social times were the most obvious and costly changes impacting the functioning and the balance of the environmental component interactions. The human needs have diversified and amplified, exercising impacts, sometimes with irreversible effects on the original natural environment. In this context, the environment can be considered as a natural aggregate with different components that act directly or indirectly on the living organisms and on the human activities, more and more diversified.

The man, in his roles as a part of the environmental system and also as a beneficiary of it, was treating at the beginning the environment with indifference, but later, being impacted more and more by the environmental changes caused by himself, he started to try to understand the environment and to assess how much the environment can change.

Environmental risks and indicators

During the last decades, in the specialty literature more and more information started to appear about the indicators, risks and environmental standards.

In Romania, for example, according to the Environmental Protection Law, the environment is considered as a "set of conditions and natural elements of the Earth: air, water, subsoil, landscape features, all layers of the atmosphere, all organic and inorganic matter, as living beings, natural systems in interaction, containing all items listed above, including material and spiritual values, quality of life and conditions that may affect the health and welfare of man [15]". In addition, considering that the risks are varied and can be transmitted to humans via different channels, environmental risk may be perceived as "a risk to the environment and a risk to the organization [2]".

Considering the criteria at organization level, we may have indicators based on the area of applicability, as: physical indicators, business management indicators, impact indicators, specific indicators; type of measured environmental performance, as: indicators of the environmental policy, indicators of the environmental management system, relative indicators of processes, products and services, aggregate indicators from eco-balance analysis, indicators of environmental state; requirement stakeholders, as: the requested indicators, necessary indicators; typology of the answer to questions, as descriptive indicators, performance indicators, efficiency indicators, indicators for total welfare; the organization's environmental performance; environmental performance like management performance indicators - indicators for implementation of policies and programs, for compliance, for financial performance, for community relations-, operational performance indicators - indicators for materials, for energy, for services that support organizational activities, for physical utilities and equipment, for supply and delivery of products, for services provided by the organization, for waste, for emission, indicators for status (state, quality) of the environment - indicators for air, for water, for soil, for flora, for fauna, for human beings, for aesthetics, for heritage and for culture.

Considering the criteria at the top level of the organization, we may have the concept of DFSR model which stands for "Driving Force-State-Response", as: the driving force indicators, indicators for the status and for the response; the concept of PSR model which stands for "Pressure-State-Report", as: indicators for environmental pressure, indicators for the environmental state (quality, conditions) and indicators for society's response; the stages of the life cycle of a product/ an installation, as: indicators for design, for execution, for operation, for maintenance, for rehabilitation and for decommissioning; and interaction cause and effect, as: sectorial indicators and indicators of the results [1].

Environmental standards

From the environmental standards perspective, nowadays exist various bodies, institutions and international organizations such as the European Environment Agency, OCDE, UNEP, CERES, ONU or Eurostat that have different actions to support the establishment of environmental indicators, relevant to national and global level.

The most important standards are the International Organization for Standardization (ISO) established for the first time in 1946 and the Eco-Management and The European Audit Scheme (EMAS) from 1995.

The International Organization for Standardization (ISO) standards are covering different types of issues as: environmental management systems, environmental auditing, evaluation of human community's protection against negative impact of industrial activities, classification in terms of environmental policy, life cycle assessment of products and services. Going further in the details, the main standards that are part of the 14000 ISO family are: "ISO 14001: 2005 for Environmental Management Systems. Requirements and utilization guideline."; "SR EN ISO 14004: 2005 for Environmental Management Systems. Guideline on principles, systems and application techniques."; "SR EN ISO 14015: 2005 for Environmental assessment of the site. Guidelines for the environmental assessment of the site."; "SR EN ISO 14040: 2007 for Environmental Management. Life cycle assessment. Principles and framework"[14].

The above standards are defining models that can be implemented by an organization for different external and internal purposes, providing tools to be able to perform a real assessment for the organization compliance.

An example of the tools is the European environmental management tool (EMAS) created to help organizations to continuously improve their environmental performance by integrating the concept of sustainable development.

MORE ABOUT THE GENERAL ASPECTS OF PRUDENTIAL RULES ON THE BANKING AND IT SYSTEMS

History of IT and banks

From the first recorded bank in the world, Taula de la Ciudad, which opened in Barcelona in 1401, to the current known banks, the services provided by banks developed considerably. The Bank Taula de la Ciudad was founded as a treasury resource for the Catalonian government. Even if the bank is on record as the first official bank in the world, the practice of banking has been traced back for several centuries [8].

The history of banks begins with the first prototype banks of merchants of the ancient world, which made grain loans to farmers and traders who carried goods between cities. This began around 2000 BC in Assyria and Babylonia. After that, in the ancient Greece and during the Roman Empire, lenders based in temples made loans and added two important innovations: they accepted deposits and changed money. Archaeology from this period in ancient China and India also shows evidence of money lending activity.

The banking development spreads from northern Italy throughout the Holy Roman Empire, and to northern Europe in the 15th and 16th century. Another important point in time is the development of the important innovations that took place in the 17th century, in Amsterdam, during the Dutch Republic, and in the 18th century, in London. Of course, the development heavily continues with the innovations in telecommunications and computing, in the 20th century, when the size of the banks and the geographical coverage increase, due to the development of the operations' side of the banks. During the well-known financial crisis from 2007–2008, all the banks were affected, some of them more than others, causing a specific attention to the banking regulations in the upcoming years.

On the IT side, even if usually most observers prefer and are expected to discuss about what is coming and not about what happened, we would like to highlight at least the three most important events in the IT history. The first event may be considered the document "First Draft of a Report on the EDVAC" published by John Von Neumann end of June 1945, consisting of the first documented discussion of the stored program concept and the blueprint for computer architecture to this day [9]. It is also called "the technological basis for the worldwide computer industry [3]". The second important event may be considered the giving birth of the Ethernet, by Bob Metcalfe, in 1973, at the Xerox Palo Alto Research Center (PARC). The third event is in 1989, when Tim Berners-Lee circulated "Information management: A proposal" at CERN in which he outlined a global hypertext system.

Banking and IT regulations

All types of banks, being part of the banking system, have to comply with the banking regulations. It can be distinguished three classes of banking regulations: economic

regulation, prudential regulation and monetary regulation. What we will deepen further is the prudential or prevented regulation, which is designed "to ensure efficient allocation of resources, to minimize the risks assumed by banks and to ensure stability and financial soundness of individual banks and of the banking system as a whole [4]".

On the IT side, the regulation topic become more and more discussed during the recent years due to the huge development of the IT world.

Basel Banking Accords and other banking regulation

Nowadays, the most important international banking regulations are the Basel Accords. These accords are published in Basel, Switzerland, by the Bank for International Settlements BIS in Basel, which is the central body in charge to develop and standardize banking regulations.

Basel I was the first accord adopted in 1988 and had the objective to improve the equity of internationally active banks by establishing a relation between equity and risk-weighted assets. Thus, Basel I proposed a standard methodology for calculating the equity and two solvability indicators to ensure compliance with the minimum coverage of risky assets (net exposure) through the bank capital. AT the end, it was concluded that the first indicator is enough for satisfying the minimum level of the solvability ratio 1 and the net exposure was calculated based on the credit risk, considering four risk categories (0%, 20%, 50% and 100%), applied according to the category of considered assets [7].

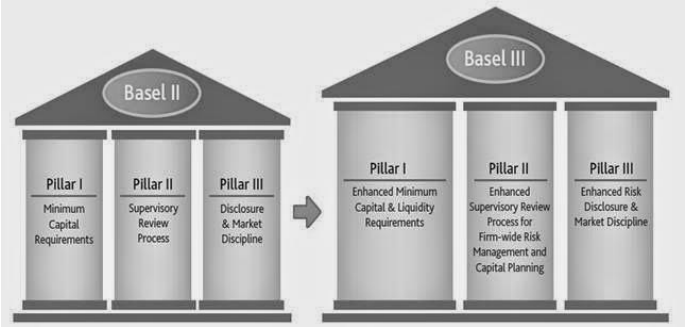
Basel II was adopted in 2004 and had the objective to cover various complains followed by Basel I. This accord contains changes to supervisory, regulatory and international cooperation between various authorities, his objectives being organised in three pillars: Pilar 1, Pilar 2 and Pilar 3 [4].

Pillar 1, also referred as "Minimum Capital Requirements", contains minimum capital requirements for credit risk, market risk and operational risk.

Pillar 2, also referred as "Supervisory Review Process", covers a qualitative approach about prudential requirements through the supervisory process. In addition to the risk defined in the Basel I, in Basel II the following risks are covered: the liquidity risk, residual risk, strategic risk, reputational risk, concentration risk and interest rate risk for exposures which are not in the trading book.

Pillar 3, also referred as "Market discipline", offers to the shareholders and the investors the possibility to monitor more effectively the bank management, because it requires to the banks to develop a set of detailed reporting requirements for the supervisory authority and for the public.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION MULTIDISCIPLINARITY IN ECONOMICS AND BUSINESS SCIENCES AND ARTS SEMA 10



(Source: [6])

Figure 1: Comparison between Basel II and Basel III

Basel III was issued as a result of the well-known global financial crisis, from 2007 and is improving several aspects of Basel II, a visual comparison being visible in the Figure 1. This accord requires from banks to have more equity of a superior quality, in order to be prepared to the future crisis, using Capital "Requirements Directive CRD IV" and "Capital Requirements Regulation CRR". In addition, this accord defines a minimum leverage of 3% and two mandatory liquidity ratios: the rate of immediate liquidity and the long-term liquidity ratio. It is also enhancing the supervisory review process for firm-wide risk management and capital planning and the risk disclosure and the market discipline.

2.IDEAS FOR A BETTER INTERLINKAGE BETWEEN ENVIRONMENT AND PRUDENTIAL RULES OF THE BANKING AND IT SYSTEMS

Banking Environmental Initiative

In 2010, The Chief Executives of some of the world's largest banks created the Banking Environment Initiative (BEI) and lunch it at IMC, in Geneva. His scope is to lead the banking industry in collectively directing capital towards environmentally and socially sustainable economic development. For the foundation of BEI, a landscape mapping was created in order to identify the need for a fresh approach. Between 2012 and 2013, the ideas were tested and it was developed and refined the BEI's model of change that can be seen below, in the Figure 2, creating trial partnerships with commodity and energy sectors. Starting 2014, the execution of the initiative started, by launching the work on products, standards and regulation. Based on this different bridges were created in order to have a faster-growth economies and new customer partnerships.



(Source: [12])

Figure 2: BEI's Model of change

Until now 11 leading banks joined the initiative, headquartered across USA, Europe, ASIA and Australia: Barclays, BNP Paribas, BNY Mellon, Deutsche Bank, Goldman Sachs, Lloyds Banking Group, Northern Trust, RBS- The Royal Bank of Scotland, Santander, Standard Chartered, and Westpac.

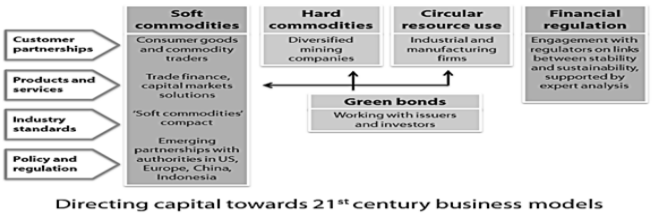
The basis of the Banking Environment Initiative's vision is the idea that banks work for their clients and an initiative like this will only work if it is aligned with their interests and vice versa. Therefore, BEI achieves its mission by focusing on topics where industry-wide action is needed, working in partnership with its customer base by bringing independent thinking to bear on the issues and through the active leadership of its Chief Executives [11].

Currently, the Banking Environment Initiative has 2 work streams: "Soft commodities" and "Financial regulation".

The 'Soft Commodities' Compact is a unique, client-led initiative that aims to mobilise the banking industry to help transform soft commodity supply chains, thereby helping corporate clients to achieve zero net deforestation by 2020. In order to achieve this scope, the banks from the BEI formed an alliance with the Consumer Goods Forum (CGF) and together should investigate what it would mean to align the banking industry's services with the CGF's 2010 resolution. The banks committed to 2 main points: financing the transformation of supply chain and raising industry-wide standards. The first one, financing the transformation of supply chain, means that the banks will use all reasonable endeavours to work with CGF supply chains to explore how they can finance the growth of the markets producing palm oil, timber products, soy and beef to the CGF's required zero net deforestation standards in ways appropriate to their individual business models. When CGF member companies identify suppliers needing access to finance to make the transition to the CGF's required standards, Compact banks will endeavour to work with both parties to test appropriate financing mechanisms, including pre-export finance approaches. The second commitment, raising industry-wide standards, means the Compact banks will review the provision of their services with the procurement policies being implemented by the CGF and align those services where possible to reinforce the development of new market norms. [12].

At the beginning of 2015, the leaders of BEI reviewed the strategy in order to establish how the group might expand its agenda based on the learning to date on what has been successful about its partnership-based, solution-driven model of change. The output was to create 3 new areas: Circular resource use, Green bonds and Hard commodities.

An overview of the BEI Programme may be seen below in the Figure 3.



(Source: [11])

Figure 3: BEI's Programme overview

Investment Leaders Group

The Investment Leaders Group (ILG) was conceived in 2013, by the University of Cambridge Institute for Sustainability Leadership (CISL) and Natixis Asset Management, and supported by financial economists at the Cambridge Judge Business School. The Investment Leaders Group comprises Allianz Global Investors, Aviva Investors, First State Investments, Loomis Sayles, Natixis Asset Management, Nordea, Old Mutual, PensionDenmark, Standard Life, TIAA-CREF Asset Management and Zurich Insurance Group. The motivations of the members varies from contributing positively to society, to enhancing returns and mitigating long-term risks to economic stability, all of them willing to improve the impact that their decisions are creating on the environment, economy and society [12].

Currently the programme is structured in 3 work streams: Vision, Impact and Risk. The Vision stream comprises of a foundational report on the value of responsible investment, which was delivered in June 2014, and a communication tool for building consensus on the importance of integrating social and environmental issues in investment decisions as a function of fiduciary responsibility, tool provided in March 2015. The Impact stream has the scope to create a model investment mandate which should encourage the long-term investment management that takes social and environmental impact and risks into account, model expected in May 2016.The Risk stream should provide an analytical tool to assess the impact on portfolio value of future carbon regulation, focusing on the most sensitive industries and geographies, tool provided in November 2015 [11].

Green IT Approaches and Certifications

The Organisation for Economic Co-operation and Development (OECD) has published a survey of over 90 government and industry initiatives on "Green ICTs", i.e. information and communication technologies, the environment and climate change. The report concludes that initiatives tend to concentrate on the greening ICTs themselves rather than on their actual implementation to tackle global warming and environmental degradation. In general, only 20% of initiatives have measurable targets, with government programs tending to include targets more frequently than business associations [11].

Data center facilities are heavy consumers of energy, accounting for between 1.1% and 1.5% of the world's total energy use in 2010. The U.S. Department of Energy estimates that data center facilities consume up to 100 to 200 times more energy than standard office buildings [10].

Energy efficient data centres design should address all of the energy use aspects included in a data centres: from the IT equipment to the HVAC equipment to the actual location, configuration and construction of the building.

The U.S. Department of Energy specifies five primary areas on which to focus energy efficient data centre design best practices [5]:

- Information technology (IT) systems
- Environmental conditions
- Air management

- Cooling systems
- Electrical systems

This consequently leads to a hardware/software approach towards Green IT, making the consumer conscious about computing needs and optimized programming techniques.

Other proposals for a better interconnection

From our perspective, the overall things can be improved in order to have a stronger linkage between environment and IT and banking systems.

One of the proposals is to increase the general awareness about the currently strong links known between all 3, referring here not only to the banking and IT leaders, but also to their employees, and why not, to all countries' leaders and all countries' people. In this way everybody will be aware about the impact of different actions resulted from the IT and banking systems- and not only- towards environment, all persons being correctly informed and conscious of the results of their actions.

All previous achievements may be made using proper marketing and communication tools. For example, the frequency of the BEI Forum can be increased from once per year to more times per year, but at least 2 times, with a definitely more international broader audience. In addition, would be good to have some information campaigns in every country of the world, via different traditional and new media channels as publications, television, radio, billboards, postal service, websites, blogs, social media, e-mail, etc.

For the short term perspective, in case the IT and banking companies cannot actively contribute in the immediate period to different environmental actions because of different reasons as resource deficit, etc., they can at least be aware about the latest reports on the market in order to include the latest findings in their future strategy. For example, the results of the reports provided by the Cambridge Institute for Sustainability Leadership should be known by every bank.

Another idea to be applicable as fast as possible is to create in every bank and IT company a special unit responsible for the environment management. In order to give the proper importance to the new unit, from our perspective, in the organizational chart, the unit responsible should report directly to the Holding board of the banking and IT companies.

The main role of the unit should be to integrate environmental protection and ecological sustainability into the daily business activities, taking responsibilities as:

- Being the corporate interface for environmental activities and promoting environmental awareness
- Taking the lead on environmental issues and representing the company in national and international meetings
- Being the first point of contact for the environmental matters in the company
- Developing annual programmes based on the latest researches
- Coordinating internally the agreement of the environmental programmes with all company's departments
- Planning and holding environmental team meetings
- Organising training courses internally in order to increase the employees' environmental awareness

- Performing the necessary activities in the area of environmental legal compliance

Adopting such a separate department, the banking and IT companies will accept their social responsibility and will actively work to serve as an example that doing business and protecting the environment are not mutually exclusive.

In addition, the content of some already existing IT and banking regulations and initiatives should be extended. For example, from our perspective, the scope of the Banking Environment Initiative may be enriched. One of the extends may be applied to the commodities' list, that may consider in the future also other commodities as other type of meat (chicken, horse, turkey, etc.) or other types of banking services. Another improvement can be to come with clear defined new financing solutions that support the transformation of businesses in relevant soft commodity supply chains away from driving deforestation.

Another proposal is referring to the coverage. The mandatory IT and banking regulations should be applicable worldwide, not only to some regions, as Europe. The regulators should team up and think more and more broader, to the entire world, leaving the silo thinking behind, considering that the impacts will be only initially on the local level and after that the impact may be propagated to the entire world. Therefore, in order to combat the destroying of the environment at least the Banking and IT leaders should be in strong contact to the environmental leaders, conceiving all together long term strategies, not only short term ones, considering only local regions.

CONCLUSION

Considering the facts presented in the paper, the environment, the IT and the banking systems should not be seen as single independent entities and the strong existing interlinkage between all of them should be considered. Currently, there are already existing a few regulations that are connecting the environment with the IT and the banking systems and some initiatives are planned for the upcoming years, but the maturity is yet not that high.

Therefore, from our perspective, the overall situation may and should be improved.

The general awareness about the already known existing impacts may be increased, not only of the banking and IT leaders, but also of their employees, and why not, of all countries' leaders and all countries' people. The idea behind such a scope is to be sure that all persons are correctly informed and conscious of the results of their actions. Of course, everything can be achieved using the proper marketing and communication tools, not forgetting the recently appeared ones as websites, blogs, social media -Facebook, Twitter, etc., in order to be sure that all age categories are covered.

The content of the current IT and banking regulations can definitely be enriched with different environmental aspects. For example, several parts of the Banking Environment Initiative can have several parts extended, as the commodities' list and new financing solutions for the relevant soft commodities supply.

In addition, the IT and banking companies should have a dedicated department for the environment management with the goal of integrating the environmental protection and ecological sustainability into the daily business activities.

Another important point of the paper is to have mandatory environmental enriched IT and banking regulations applicable worldwide, not only to some regions or countries as it is happening today. In this way, the regulators will be challenged to not think in silos anymore, on a short term, and to adopt a broader view applicable for a long term period, because everything is connected and the environmental impacts are affecting the entire world.

REFERENCES

[1]Anghelache, C. (2011). Managementul riscului de mediu - prioritate economică și socială, *Economie teoretică și aplicată*, 3(556), 80-92.

[2]Babut, G., Moraru, R. (2002). Environmental risk characterization principles. *In: Proceedings of the 6th Conference on Environmental and Mineral Proceedings*, VSB-TU Ostrava, Czech Republic, 17-21.

[3]Campbell-Kelly, M., & Aspray, I. (2004). *Computer: A History Of The Information Machine (Sloan Technology).* Westview Press

[4]Dardac, N., Moinescu, B. (2007). *Politici monetare și tehnici bancare.* Note de curs.

[5]Murugesan, S. (2008). Harnessing Green IT: Principles and Practices. *IEEE IT Professional*, 24-33.

[6]Srivastava, A. (2016). *BASEL NORMS - Explained in Simple Language, <http://www.derivativesinvesting.net* >. [15 January 2016].

[7]Tarullo, D. K. (2008). *Banking on Basel: The Future of International Financial Regulation.* Peterson Institute for International Economics.

[8]Van Dillen, J.G. (1964). *History of the principal public banks.*Frank Cass& CO LTD.

[9]Von Neumann, J. (1945). First Draft of a Report on the EDVAC. *Contract No. W-670-ORD-4926 between the United States Army Ordnance Department and the University of Pennsylvania*.

[10]*** (2011). *Best Practices Guide for Energy-Efficient Data Center Design*. National Renewable Energy Laboratory for the U.S. Department of Energy- Federal Energy Management Program, <http://energy.gov/sites/prod/files/2013/10/f3/eedatacenter bestpractices.pdf>. [12 January 2016].

[11]*** (2016). Cambridge Institut for Sustainability Leadership, <http://www.cisl.cam.ac.uk >. [10 January 2016].

[12]*** (2016). Cambridge Institut for Sustainability Leadership, The Banking Environment Initiative (BEI) & the Consumer Goods Forum (CGF)'s – *'Soft Commodities' Compact,* <http://www.cisl.cam.ac.uk >. [19 January 2016].

[13]*** (2015). *Collins English Dictionary*. HarperCollins UK, <http://www.collinsdictionary.com/dictionary/english>. [14 November 2015].

[14]*** (2009). *Familia ISO 14000 – sisteme de management al mediului.* Asociația de Standardizare din România, <https://standardizare.wordpress.com/2009/03/09/familia-iso-14000/>. [10 December 2015].

[15]*** (2006). Legea protecţiei mediului.265/2006. *Monitorul Oficial*. Parlamentul României.

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

BILATERAL TRADE AND CURRENCY UNION: EVIDENCE FROM THE EUROZONE

PhD Student Danusia Vamvu

Prof. Dumitru Miron

Prof. Paul Miclăuș

PhD Student Anca Tamaș

The Bucharest University of Economic Studies, Faculty of Economics and International Affairs, **Romania**

ABSTRACT

Due to the financial crisis that has already revealed many of the shortcomings of the Eurozone, it has become clear that keeping the Eurozone together has its costs and that they may be larger than previously expected. The question arising now is whether these costs can still be justified by the benefits that come with the currency union. While many of the benefits such as greater unity, stability and influence in a geopolitical sense are hard to quantify, previous research suggests that adopting a common currency also has more tangible advantages such as lower inflation and increased bilateral trade among member countries. This paper focuses on quantifying those benefits and finding a causal effect between joining a currency union and an increase in bilateral trade. In this paper we undertake a difference-in-differences analysis to answer a simple question: what happened to the trade of the new member countries after their entry into the Eurozone relative to the counterfactual approximated by the rest of the EU members who did not join during the relevant time period? The importance and difficulty of finding a convincing group of control countries led us to examine what happened to bilateral trade of some of the most recent Eurozone joiners, more specifically those joining after 2004. We used a conventional gravity approach for the main regression and the results fall within the range of previous estimates for the effect of joining the Eurozone on bilateral trade. More precisely, we have found that trade between the new member countries and their Eurozone partners has gone up by around 8% to 10% whereas the trade with non-Eurozone countries has not changed.

Keywords: Rose effect, common currency, trade, gravity model, monetary union.

INTRODUCTION

The creation of the Eurozone still represents both an immense political and symbolic step towards an integrated Europe. It is, at the same time, the world's largest economic experiment in the sense that it clearly opens new ways to understanding how using the same currency can affect the economic activity of the countries that are part of a currency union. In this paper I will focus solely on the trade creating effect of a common currency.

For the last few years, however, there have been quite a few important events that put, quite reasonably, the long-term viability of the Eurozone under question, with an

increasing number of euro skeptics pointing out that the costs that come with joining the Eurozone are larger than previously expected.

The financial turmoil that surrounds some of the Eurozone members for the past years (such as fiscal problems in Greece, Ireland and Portugal) have indeed shifted focus to its negative aspects by pointing out many of the shortcomings of the Eurozone in the detriment of quantifying the potential benefits that could arise from joining it.

Now, since these costs are becoming more and more evident lately, it is sensible to question whether they can be justified by the benefits that come with joining a currency union in general and the Eurozone in particular. Even though some of the benefits that are presumed to come with joining a common currency union cannot be quantified, there are a few tangible important benefits and the trade creating effect is one of them.

This paper reviews the evidence on the trade links of currency union throughout 1999-2015 and its main aim is to separate out the effects of currency unions on bilateral trade from all other factors that influence trade between two countries.

The departing point in studying the effect of common currencies on trade (also known as the Rose effect) lies in Andrew K. Rose's seminal work [1]. Rose used a large cross-country panel data set of 33,903 bilateral trade observations for 186 countries to estimate a naive gravity equation. His innovative touch refers to the inclusion of a dummy for currency union status. Rose's results show that two countries with the same currency trade almost three times more than comparable countries with their own currencies. The results were quite high to be believed and the literature that followed can be considered "the Rose vine" since it focused on finding reasons to back up or not Rose [1] unbelievably large results. The results that followed Rose [1], however, almost unanimously support the hypothesis that joining a common currency union does indeed boost trade among its members, but at a smaller scale while concerns about omitted variables, causality, endogeneity and multicollinearity remain. Subsequent literature has also proved that Rose's [1] results are simply overestimates, including Glick and Rose paper [2] that covers the period 1948-1997. When throwing in pair-specific dummies, the Rose effect drops dramatically from 1.3 to 0.65 which translates into percentage Rose effects of respectively, 267% and 92%. The diminished Rose effect is both statistically significant and economically reasonable.

Therefore, another important aim of this paper is to achieve statistically reliable estimates for the trade-creating effect of a currency union in general and for the euro in particular. Even though, just as in Rose's paper [1], this paper contains a large number of deficiencies which may distort the results, it can be used for many purposes such as to identify the underpinning factors that might bias the results.

There are three main weaknesses for the model I ran: omitted variables (biases stemming from omitted variables that are pro-trade and correlated with the CU dummy); reverse causality (big bilateral trade flows cause a common currency rather than vice versa); endogeneity. As Jakelga [3] correctly points out, there are a few more drawbacks to this analysis that should make our results be interpreted with caution. I am referring to the fact that we might have measured the short-term Rose effect rather than the long-term Rose effect since some trade specialists estimate that half of the long-run Rose effect of 38.6% would be achieved in seven years while Glick and Rose [1] find that it might take up to 30 years to witness the peak of the Rose Effect and to fully grasp the entire magnitude of the trade creating effect of the Eurozone.

Using the latest data and best empirical methodology, we confirm the previous literature results that the euro has boosted trade significantly, with the aggregate impact being in the range of 8% to 10%.

The second main contribution of the paper was to go an extra step towards addressing the above mentioned problems by examining what happened to the bilateral trade of the most recent Eurozone members – Slovenia, Malta, Cyprus, Slovakia, Estonia and Latvia (henceforth "the joiners") which joined between 2007 and 2014. We use a double difference-in-differences (henceforth DiD) approach in the sense that we look at joiners' trade with both their Eurozone and non-Eurozone partners from the EU-27[1].

The remainder of the paper is organized as follows: Section 2 provides a review of the existing literature, Section 3 describes the data and discusses the methodology used in this paper, Section 4 presents the results and Section 5 concludes.

LITERATURE REVIEW

The "Rose effect literature" had its departing point with Rose's work [1]. We should immediately point out that the econometric techniques as well as the data itself used in this paper can easily be shown to contain a large number of deficiencies which distorts the estimates but reproducing the basic first findings is useful for illustrative purposes and it enables us to better identify the sources of the likely biases. The paper exploits a large dataset of 33,903 bilateral trade observations spanning five different years (1970, 1975, 1980, 1985 and 1990) to estimate a conventional gravity equation. Andy Rose's innovative approach was to include a dummy for currency union status which is equal to one if the country pair is using the same currency. The pooled sample estimate (which should give us a long-term measure of the Rose effect) is 1.21. This coefficient estimate implies, *ceteris paribus*, that countries that use a common currency trade three times as much as countries using different currencies ($e^{1.21} \approx 3.35$). In other words, a currency union boosts trade by 235%. The startling results that both exchange rate stability and a common currency were powerful stimulants to trade seemed to be robust. However, the impossibly large triple effect obtained by Andy Rose generated a huge response with trade economists finding that joining a common currency union does indeed boost trade with other members of the union but the magnitude is a lot lower than what Rose estimated and there is much effort on understanding the precise channels through which the euro in affecting trade. Some argue that the euro boosted trade inside the Eurozone since it lowered the relative price of traded goods coming from the Eurozone, whereas others, like Baldwin [4], consider that the euro induced firms to export a wider range of their products to the Eurozone. Therefore, it was a matter of newly trade goods rather than stimulating the existing goods trade.

Throughout the Rose literature there are four main criticisms that apply to Rose's paper [1]: omitting variables that are pro-trade and correlated with the currency union dummy biases the estimate upwards; reverse causality - big bilateral trade flows cause a common currency rather than vice versa, so the high estimate reflects the impact of

[1]Please note that the Eurozone (European Monetary Union, EMU) is a monetary union and the EU (European Union) is a political union.

trade on currency union formation not the other way round; model misspecification and the fact that most of the common currency pairs in Andy Rose's sample involved nations that were very small and very poor and these factors might have biased the results further.

The first paper that applies the techniques employed by Andy Rose to the Eurozone is, to my knowledge, Micco et al. [5]. The main results obtained by Micco et al. [5] are estimates done with pair fixed effects on the EU15 sample for the 1992 to 2002 period. They found a Rose effect of 6% applying an estimation strategy that can be thought of as a difference-in-differences estimate. Flam and Nordstrom [6] introduced a number of innovations that corrected some of the standard econometric mistakes in the literature[2].

Flam [7] remains one of the most up-to-date literature summaries in this field and the most easily to follow. His concluding remarks were a Rose effect of between 10% to 30% between Euro countries and a 5% to 15% Rose effect between Euro and non-Euro countries between 2002 and 2006 compared with 1995-1998 period and compared with trade between non-euro countries. Also, a good reference in this field is Baldwin's paper [8] where one can find the main works for both non-Eurozone currency unions and for the Eurozone's Rose effect. His concluding remarks suggest that aggregate trade was boosted by only 2% for the 1995-2006 time period.

THE DATA SET AND METHODOLOGY

We included 27 EU countries which led to 351 country pairs with monthly data raging January 1999 until December 2015 leading to a total of 120,124 complete bilateral trade observations. We ran the following augmented gravity equation:

$$\ln(trade_{ijt}) = \beta_0 + \beta_1 * joiners_{it} + \beta_2 * \ln PGDP_{ijt} + \beta_3 * 1yearbeforejoining_{it} + \beta_4 BORDERij + \beta_5 DISTANCE_{ij} + \alpha ij + \delta_t + \varepsilon \quad (2)$$

Table 1. An explanation of each variable and list of sources

Variable, explanation	Source
ln(trade) is the log of the trade of country pair *i* and *j* in month *t*; it is computed as an average between imports of country A from country B and exports of country B to country A	Exports: Eurostat (monthly frequency) CPI: International Financial Statistics, IMF
joiners is equal to 1 for country *i* after it joins the Eurozone and 0 otherwise (only applies to the new members)	Slovenia – 01.01.2007, Cyprus and Malta – 01.01.2008, Slovakia – 01.01.2009, Estonia – 01.01.2011, Latvia – 01.01.2014
1yearbeforejoining is equal to 1 for country *i* one year before it joins the Eurozone and 0 otherwise (also applies to new members only)	Slovenia – 01.01.2006, Cyprus and Malta – 01.01.2007, Slovakia – 01.01.2008, Estonia –

[2] They avoided the silver medal mistake by using uni-directional bilateral trade flows and the gold medal mistake and some of the omitted-variable mistakes by including pair fixed effects.

	01.01.2010, Latvia – 01.01.2013
lnPGDP is the log of the product of the two countries' nominal GDP in quarter *t*	GDP: Eurostat (quarterly frequency)
BORDER - Binary variable which equals 1 if country *i* and country *j* share a land border	World Bank
DISTANCE - Distance measured in kilometres between country *i* and country *j*	World Bank
α is a dummy for country pair *i* and *j*	
δ is a dummy for month *t*	

Following Jagelka [3] approach, we used the above mentioned regression to estimate the effect of joining a common currency union on bilateral trade using a double difference-in-differences approach: firstly we examined the trade of the treatment group or the joiners (Slovakia, Slovenia, Malta, Cyprus, Estonia and Latvia) and of the control group (the rest of the EU countries) with Eurozone partners and, secondly, with non-Eurozone partners.

We chose this methodology because it seems to be the best practice in using the gravity equation to estimate the trade creating effect of a common currency. We also avoided many of the mistakes pointed out by Baldwin [4] such as using the nominal GDP of the countries in combination with time dummies as suggested by him. Also, I limit my general sample to EU-27, not taking into account Croatia which was a member of the EU only for two years and does not provide for a good control country. This should better estimate the Euro Rose effect since it helps better control for the impact of EU membership on the currency union dummy.

Using terminology that comes from medical studies, one group of trade pairs gets "treated", hence the "treatment group" (the 6 joiners), while the control group (the rest of the European Union members which do not join the Eurozone) of pairs gets a placebo. In this case, "the treatment" refers to joining the Eurozone, whereas the placebo is the non-membership of the Eurozone.

Using the gravity model to control for observable differences between the control group and the treatment group, the estimate tells us by how much bilateral trade increased in the 'treatment' group relative to the rise in the 'control' group. This is called difference-in-differences, since it compares the before-and-after difference for the treatment group to the before-and-after difference for the control group.

Table 2, below, shows that, for each observation (monthly bilateral trade), one should calculate the difference before and after joining the Eurozone for both groups (Δ**Trade**$_1$ and Δ**Trade**$_2$) and, then, the difference between these differences ($\Delta\Delta$**Trade)**. Only when the evolution of the trade registered in the control group represents the normal evolution of trade and the control group is chosen so that is it affected by the same factors that influence the treatment group, the difference-in-differences can successfully isolate solely the effect of the treatment (the effect of joining the Eurozone) on the

treatment group**.** Table 3 shows that the DiD analysis can be applied by using a gravity equation.

	Before joining Eurozone	After joining Eurozone	Difference
Treatment group (joiners)	$Trade_{1,1}$	$Trade_{1,2}$	$\Delta Trade_1 = Trade_{1,2} - Trade_{1,1}$
Control group	$Trade_{2,1}$	$Trade_{2,2}$	$\Delta Trade_2 = Trade_{2,2} - Trade_{2,1}$
			$\Delta\Delta Trade = Trade_2 - Trade_2$

Figure 1: Mathematically written difference-in-differences technique

	Before joining Eurozone	After joining Eurozone	Difference
Treatment group (joiners)	$Trade_{1,1} = \beta_0 + \beta_1$	$Trade_{1,2} = \beta_0 + \beta_1 + \beta_2 + \beta_3$	$\Delta Trade_1 = \beta_2 + \beta_3$
Control group	$Trade_{2,1} = \beta_0$	$Trade_{2,2} = \beta_0 + \beta_2$	$\Delta Trade_2 = \beta_2$
			$\Delta\Delta Trade = \beta_3$

Figure 2: Econometrically written difference-in-differences technique

MAIN RESULTS

Simply put, DiD helps answer the question: What happened to the trade of the joiners after joining the Eurozone relative to the counterfactual approximated by the rest of the EU members who did not join during the relevant time period? The answer to this question must be of great relevance to the new potential joiners of the Eurozone such as Romania.

Our sample consists of countries that are members of the EU-27, which provides for both a somewhat more reliable, yet sufficiently large, control group. Regarding the joiners, they have a few interesting characteristics which make them more comparable with the potential new members, hence the results that we obtain should be of a higher relevance to countries such as Romania when deciding whether to join the Eurozone or not. For example, they are more similar in size to potential new members than the original members of the Eurozone. There isn't, to my knowledge, any paper as of yet to include all new joiners up until 2014 since this is the furthest year we can use in order for the DiD to work best.

The joiners' properties convinced us that the DiD analysis is indeed the best approach mainly because they joined the Eurozone almost a decade after the original members and they did so at different times, also they are surrounded by similar countries which did not change their Eurozone status during the relevant time period and, thus, we could find more easily a strong control group.

Indeed, the main struggles with the DiD methodology include the selection of a convincing control group of countries, as well as finding a corresponding time window around the event.

In our case, one of the main challenges in using the DiD approach is the difficulty of finding a control group that is as comparable as possible to the treatment group as far as

unobservable factors are concerned. To illustrate our point, try and find an equivalent of Portugal or Spain that is a member of the EU but did not join the Eurozone at the same time Spain or Portugal did. Fortunately for my paper, finding a good proxy for Slovakia might prove a bit easier. Slovakia joined the Eurozone, whereas the Czech Republic did not. Although there are still important differences between the two countries, we cannot think of a better control country: they used to be the same country; they have similar sizes population wise, similar languages, they joined the EU at the same time.

We used difference-in-differences technique by creating different symmetrical time windows[3] corresponding to each of the joining moments of the treatment group and the results are presented in Table 4. It can easily be concluded that, even though the coefficient on *joiners* for trade with Eurozone partners (last column from Table 4) is significant at 10% and translates into an Euro Rose Effect of roughly 10%, the Eurozone did not bost trade with non-Eurozone members($e^{0.021}$=2% increase in trade and statistically insignificant). Regarding the regressions associated with symmetrical time windows around the different moments when the treatment countries did join the Eurozone, the Euro Rose effect ranges from merely 1% to as high as 8,4% and it tends to get slightly higher the longer the treatment country is an Eurozone member.

Table 2. Main regressions and results

	Slovenia	**Cyprus & Malta**	**Slovakia**	**Estonia**	**Latvia**	**Non-EMU**	**EMU**
	2004-2009	**2004-2011**	**2004-2013**	**2006-'15**	**2013-'15**	**1999-2015**	**1999-2015**
joiners	0.076* (0.041)	0.077* (0.044)	0.081* (0.038)	0.078* (0.039)	0.011 (0.065)	0.021 (0.074)	0.093* (0.054)
1yearbeforejoining	0.076* (0.033)	0.076* (0.029)	0.080* (0.031)	0.075* (0.049)	0.010* (0.046)	0.018 (0.057)	0.081* (0.049)
lncombined GDP	0.799*** (0.016)	0.801*** (0.014)	0.757*** (0.011)	0.765*** (0.009)	0.722*** (0.009)	0.772*** (0.016)	0.745*** (0.018)
Border	0.396* (0.221)	0.305 (0.197)	0.758*** (0.17)	0.936*** (0.127)	1.124*** (0.11)	0.805*** (0.132)	0.825*** (0.061)
Distance	-0.986*** (0.051)	-1.003*** (0.047)	-0.969*** (0.037)	-1.128*** (0.027)	-1.173*** (0.024)	-1.246*** (0.026)	-1.127*** (0.013)
R^2	0.91	0.91	0.92	0.93	0.63	0.98	0.98

* significant at 10%
** significant at 5%
***significant at 1%
Note: Robust standard errors in parentheses
Constant terms as well as year dummies are not reported

[3] Slovenia joined the Eurozone at 01.01.2007 and the EU in 2004 which is why we considered 2004-2009 the most relevant time window; Cyprus and Malta joined the Eurozone at 01.01.2008 and the EU in 2004, which is why we considered 2004-2011 the most relevant time window; Slovakia joined the Eurozone at 01.01.2009 and the EU in 2004, which is why we considered 2004-2013 the most relevant time window; Estonia joined the Eurozone at 01.01.2011 and the EU in 2004, which is why we considered 2006-2015 the only relevant time window; Latvia joined the Eurozone at 01.01.2014 and the EU in 2004, which is why we considered 2013-2015 the only relevant time window.

CONCLUSIONS

It is safe to say that the results fall within the range of previous estimates for the effect of joining the Eurozone on trade. We confirm the findings of Jagelka [3] who points out that the trade with non-Eurozone partners has not been influenced by joining the Eurozone. However, trade between the new member countries and their Eurozone partners has gone up by around 10% as a result of joining the Eurozone. Is it safe to generalize this result to Romania when joining the Eurozone? Not likely! We estimate that there will be necessary at least 5 years to pass after a new member joins the Eurozone in order for that country to reach a maximum of 8% for the Euro Rose effect.

REFERENCES

[1] Rose A., One Money, One Market: Estimating the Effect of Common Currencies on Trade, Economic Policy, Vol. 15 Issue 30,pp.7-46, 2000.
[2] Glick R., Rose A., Does a Currency union affect Trade? The Time Series Evidence, NBER Working Paper No. 8396, 2001.
[3] Jagelka T., Bilateral Trade and the Eurozone: Evidence from New Member Countries, The World Economy, 2013.
[4] Baldwin R., The Euro's Trade Effects, European Central Bank Working Paper No. 594, 2006.
[5] Micco A., Stein E., Ordonez G., The currency Union Effect on Trade: Early Evidence from EMU", Inter-American Development Bank, 2003.
[6] Flam H., Nordstrom H., Trade Volume Effects of the Euro: Aggregate and Sector Estimates, 2003.
[7] Flam H., The Impact of the Euro on International Trade and Investment: A Survey of Theoretical and Empirical Evidence, SIEPS, 2009.
[8] Baldwin R. et al., Study on the Impact of the Euro on Trade and Foreign Direct Investment, Economic Papers 321, 2008.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
SGEM 2016

BIOENERGY PRODUCTION FOR SUSTAINABLE RURAL DEVELOPMENT: LATVIA'S CASE

Assoc. Prof. Dr. Ligita Melece[1]

Dr. Agnese Krieviņa[1]

[1] Institute of Agricultural Resources and Economics, **Latvia**

ABSTRACT

Production of bioenergy (especially biomass) has emerged as a major issue in renewable energy policy, rural development and natural resource management. Bioenergy is widely believed to have among the largest employment potential of the renewable energy sector, particularly in the rural areas. The aim of research, presented in the paper, is to evaluate the impact of subsidies and support measures, *inter alia*, sub-measures, under Rural Development Programme (RDP) 2007-2013 for encouraging bioenergy production on sustainable rural development. For example, to assess job creation and preserved work places; to evaluate further sustainability regarding the principles and framework of latest European Union legislation and guidelines in the sphere of renewables. The appropriate qualitative and quantitative research methods have been used in the process of study, using the data from different databases. Only impact in the primary sector and several activities in the secondary sector (e.g. chipping, operation of pellet mills, operation of biogas plants etc.) have been evaluated. The main socio-economic impacts, such as the establishing enterprises (e.g. biogas plants), creation of new jobs, have been investigated. The support under RDP for encouraging entrepreneurship and diversification into non-agricultural activities have been granted for existing enterprises (i.e. microenterprises), agricultural farms and for founding and development of new enterprises. The findings of research show that there are both the benefits and shortcomings or some negative effects. Despite the support for the bioenergy projects, having provided new jobs and retaining the existing ones in rural areas, the cost of new jobs is comparatively high. The sub-measure of RDP 2007-2013 "Support for energy production from agricultural and forestry biomass" is the least effective (i.e. capital intensive) from the point of view of creating jobs. On the other hand, the sub-measure "Support for creation and development of micro-enterprises" is most productive in terms of net job creation (the average amount of investment per job created is the smallest).

Keywords: bioenergy, rural, subsidies, socio-economic impact.

INTRODUCTION

In recent years there has been an increasingly greater focus on rural development, as well as the recognition of the fact that rural economy is not confined to agriculture; it rather encompasses the entire rural area, its population, economic activities, infrastructure and natural resources [1].

While agriculture has an important role in shaping rural landscapes in many OECD countries, its weight in rural economies is often low and declining [2]. Productivity increases in agriculture have driven the dramatic decline in agricultural employment across European Union (EU) and developed (OECD) countries. Currently, less than 10% of the rural workforce is employed in agriculture. Even accounting for the

considerable increase in productivity, agriculture's share of gross value added (GVA) remains low. The GVA of agriculture as a percentage of the total GDP has been steadily declining. The exceptional increase of agricultural productivity over the last few decades means that the modern supply chain for commodity production includes relatively low number of agricultural producers or farmers and that there is increasing concentration of production in relatively few rural places. Decline in agricultural employment has been compounded recently by falling public sector employment, which in many cases had been the main source of job growth in rural areas. The drivers of economic change, such as globalisation and technological change are expected to continue the general transition towards employment in services and the knowledge economy, particularly green and circular economy [3], [4].

For EU countries the transformation from agriculture and other primary industries in the tertiary sector is a key challenge. It is widely recognized on international, regional (EU) level, as well by scholars, researchers and experts, that the diversification of agri-food production and the creation of new innovative business activities, including non-farm, in the rural areas is important tool for sustainable development. Davis [5] argued that the rural non-farm economy should be seen as components of a growth strategy of rural territories, particularly in the countries in transition, *inter alia*, Latvia.

The EU has assigned an important role to energy generation from biomass, among renewable energy sources (RES). Biomass is one of the RES already available for climate change mitigation and is regarded one key option for reducing dependency on imported fuels in the EU. OECD [6] stresses that an increasing number of studies put forward the large potential for job creation associated with the expansion of RES. Likewise; the European Renewable Energy Council argues that the EU target for the share of renewables in total energy consumption to attain 20% in 2020 could create more than 2 million jobs [6].

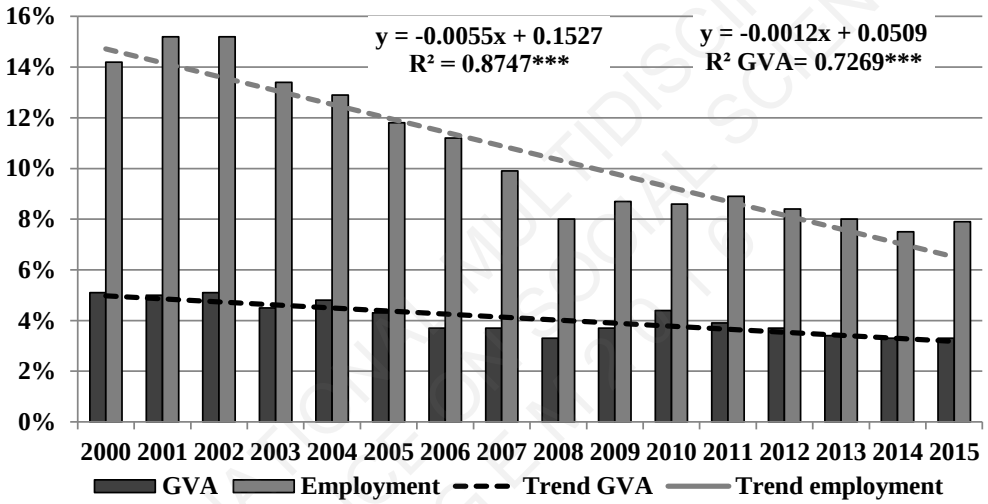
Considering the above mentioned, the aim of research presented in this paper is to evaluate the impact of subsidies and support measures, *inter alia*, sub-measures, under Rural Development Programme (RDP) 2007-2013 for encouraging bioenergy production on sustainable rural development. The main socio-economic impacts, such as establishing enterprises (e.g. micro-enterprises, biogas plants), creation of new jobs, are investigated.

The principal **materials** used for the studies are as follows: different sources of literature, e.g. scholars' articles, research papers and the reports of foreign and Latvian researchers, and institutions (e.g. international, EU, particularly EC, and governmental); published and unpublished data from Central Statistical Bureau of Latvia (CSB) [7], data from Statistical Office of European Union (Eurostat) databases [8], as well as data from the unpublished database of Rural Support Service (RSS) and Lursoft (data bases of enterprises). The data on labour status were obtained from database of CSB, which is based on Labour Force Survey of Latvia in line with the methodology (acquired from persons aged 15–74). To ensure that data are internationally comparable, part of employment indicators are calculated also on age group 15–64. Internationally, age 15–64 years is working age, and it is used by Eurostat and International Labour Organisation, thus key economic indicators are published by CSB on two age groups: 15–64 years and 15–74 years. In our research we have used the data on age group 15-64 years. The appropriate qualitative and quantitative research **methods** have been used in

the process of study: monographic; content analysis and synthesis, data grouping, correlation and linear regression, logical and abstract constructive, expert, etc.

RESULTS AND DISSCUSSIONS

In Latvia, similarly to the EU Member States and other developed countries, the role and importance of primary (agricultural) sector (agriculture, livestock, forestry, fishing and hunting) has decreased. The contribution of the agricultural sector to the gross added value (GVA) and share of employment in the sector has significantly declined in Latvia in the period from 2000 to 2015 (Fig. 1). In 2000 the 14.2% of the employment in agricultural sector had generated 5.1% of the GVA of the Latvia's economy (at an approximate productivity rate of 0.36 GVA points for one percentage point of employment), but in 2015 7.9% of Latvia's agricultural employees had generated 3.3% of the GVA (equivalent to 0.42 percentage points for one percentage point of employment).



Source: authors' calculations based on [7]

Fig. 1. Trends of total gross value added (GVA) and employment of agricultural sector in Latvia, 2000-2015

Comparing the trends of GVA of various agricultural sector activities in Latvia from 2000 to 2013, the GVA have declined significantly for crop and animal production, hunting and related service activities, as well as fishing and aquaculture (Table 1).

Table 1. Trends of GVA of agricultural, forestry and fishing activities in Latvia, 2000-2013

Activity	Equation of regression	Coefficient of determination
Crop & animal production, hunting & related service activities	y = -0.1262x + 3.4033***	R^2 = 0.8511
Forestry and logging	y = 0.0145x + 1.4484	R^2 = 0.0548
Fishing and aquaculture	y = -0.0101x + 0.2473*	R^2 = 0.2142

Source: authors' calculations based on [7]

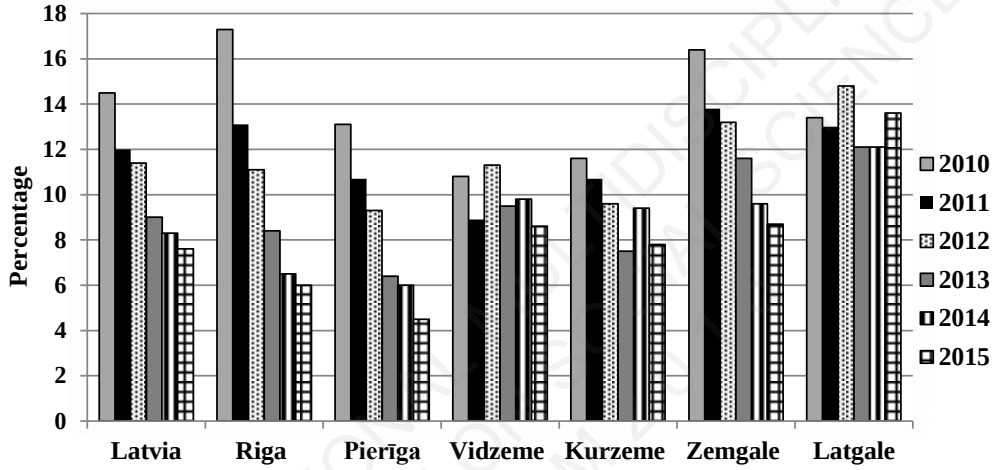
Analysing the long-term two-decade (1996-2015) trend of the unemployment rate in Latvia, and in urban and rural areas, the results (Table 2) show that the rate has declined in Latvia (average) and urban areas. On the other hand, in rural areas the rate has risen; and the rising long-term trend is significant (Table 2). According to the data of CSB of Latvia, the unemployment rate in rural area of Latvia was 12.0% in 2015, compared to 8.9% in urban areas.

Table 2. Trend of unemployment rate in Latvia and in urban and rural area, 1996-2015

Territory/area	Equation of regression	Coefficient of determination
Latvia (average)	y = -0.071x + 10.155	R^2 = 0.0223
Urban	y = -0.1956x + 12.234	R^2 = 0.1249
Rural	y = 0.2115x + 5.4642**	R^2 = 0.247

Source: authors' calculations based on [7]

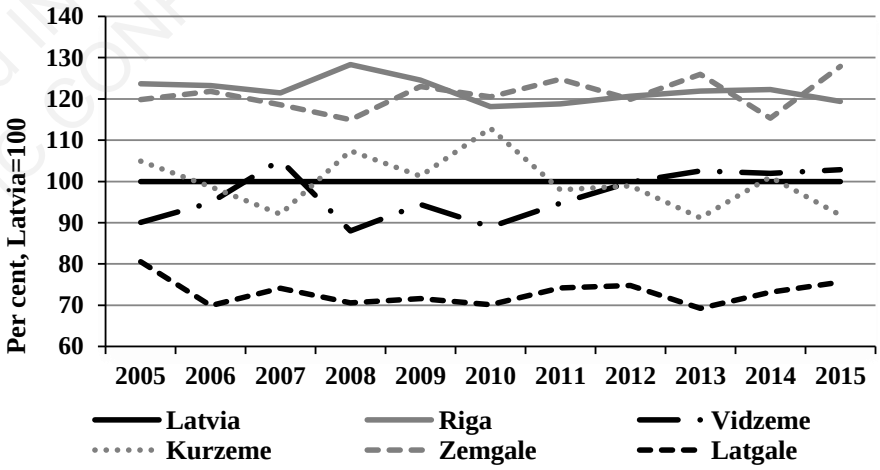
Starting from 2012, the unemployment rate in rural area has been higher than in urban area. The results of comparing the dynamics or changes of the unemployment rate in Latvia and its regions in the period from 2010 to 2015 show that despite the different EU and national level support measures, the unemployment rate is high in the least developed Latvia's regions (Fig. 2). Moreover, the unemployment rate in Latgale region has increased in 2015, compared to the previous year.



Source: authors' calculations based on [7]

Fig. 2. Unemployment rate (%) in Latvia (average) and its statistical regions, 2010-2015

The lagging regions, especially Kurzeme and Latgale, have not only the highest rates or shares of unemployment, but also significantly lower wages and salaries in agricultural sector (Fig. 3).



Source: authors' calculations based on [7]

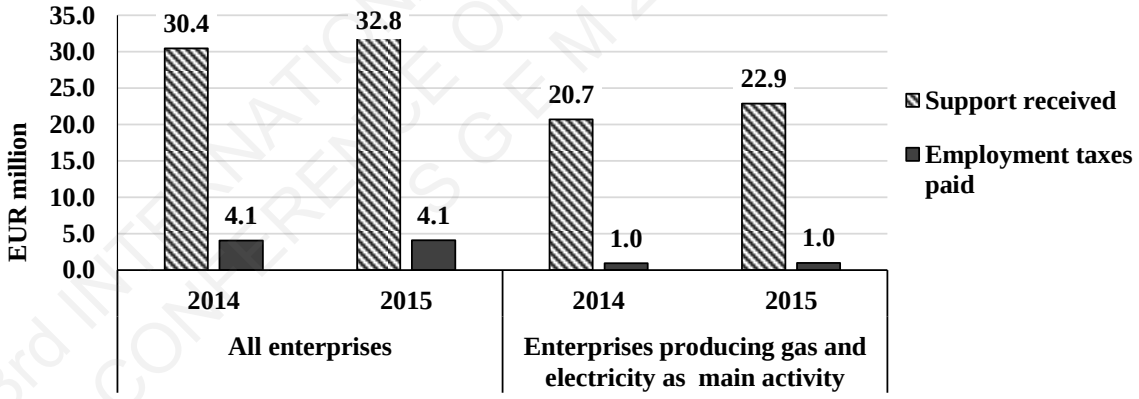
Fig. 3. Average monthly wages and salaries (Latvia = 100%) in agriculture, forestry and fishing by statistical region of Latvia, 2005-2015

The Latvia's RDP 2007-2013 focused on three major objectives: 1) Increasing the competitiveness of the agricultural sector through support for restructuring; 2) Enhancing the environment and countryside through support for land management; and 3) Enhancing the quality of life in rural areas and promoting diversification of economic activities through measures targeting encouraging entrepreneurship activities of both: agricultural activities and non-agricultural or non-farm activities [9].

In 2015, there were 58 biogas plants in Latvia, which produced electricity and received feed-in tariffs [10]. Majority of biogas plants in Latvia are agricultural biomass plants, most of which have been established by the investment support within RDP 2007-2013.

In total, the public funding of EUR 48.1 million was granted to 40 enterprises to establish cogeneration biogas plants for bioelectricity production mostly for sales, with the investment support per recipient reaching almost EUR 1.2 million (Fig. 4). The total support received by these plants for the sold bioelectricity amounted to EUR 32.8 million in 2015 (Fig. 4), which is about EUR 821 thousand per enterprise.

In its turn, the total employment taxes paid by these enterprises (except 5 family farms whose data are not available) were EUR 4.1 million in 2015 (EUR 118 thousand per enterprise). Out of these enterprises, the amount of employment taxes paid by enterprises with gas and electricity production being their principal activity (24 enterprises) was about EUR 1.0 million (EUR 42 thousand per enterprise). To have a rough assumption about the possible number of employees in the bioelectricity generating enterprises - the approximate annual employment tax burden of one employee having the average gross salary in private sector in Latvia was about EUR 5,225 in 2015.



Source: authors' calculations based on data [7], [10], [11] and Lursoft

Fig. 4. Support for sold electricity received and employment taxes paid by enterprises having established biogas plants within RDP 2007-2013

In total, the public funding of EUR 48.1 million was granted to 40 enterprises to establish cogeneration biogas plants for bioelectricity production mostly for sales, with the investment support per recipient reaching almost EUR 1.2 million.

According to the reported data by the investment support recipients, there were 101 new jobs created as the result of the implementation of biogas plant projects (Table 3). Compared to other RDP 2007-2013 projects related to the facilitation to the development of the production of bioenergy, the contribution of biogas production to new job creation has been the most expensive – almost EUR 450 thou per created job.

About 141 new jobs have been created by projects developing the production of solid biomass, with the public support being about 10 times less than of biogas projects. Also, the average costs of the creation of one working place in all rural economy diversification measures (except biogas plants) was about EUR 49 thousand.

Table 3. Number of projects, funds, created jobs and value of created job by NACE activity under RDP 2007-2013 (Axes 3 measures)

NACE	NACE code	No of projects	Funds paid, thou EUR	Created jobs	EUR thou / job
Raising of other animals	01.49	31	1226	25	49
Silviculture and other forestry activities	02.10	21	101	2	51
Logging	02.20	29	1240	33	38
Support services to forestry	02.40	58	419	6	70
Sawmilling and planing of wood	16.10	82	4209	138	31
Manufacture of other builders' carpentry and joinery	16.23	42	1482	49	30
Manufacture of wooden containers	16.24	23	862	17	51
Manufacture of other products of wood	16.29	37	1480	56	26
Electricity, gas, steam and air conditioning supply	35	41	45391	101	449
Production of electricity	35.11	16	1431	10	143
Maintenance and repair of motor vehicles	45.2	70	1907	67	28
Accommodation	55	227	5716	147	39
Restaurants and mobile food service activities	56.20	12	454	16	28
Landscape service activities	81.30	28	1041	22	47
Fuel	various	113	6206	141	44

Source: authors' calculations based on data of RSS and [11]

The result of evaluation (Table 4) shows that major share or proportion of measures and sub-measures under Axes 3, which was utilized in RDP 2007-2013 in Latvia, were oriented on the bioenergy development.

Table 4. The share of subsidies paid under RDP 2007-2013 by Axes 3 measure and sub-measure (%)

RDP Measure/ sub-measure		%
312/21	Production of energy from biomass	44.7%
312/2	Diversification into non-agricultural activities of agricultural enterprises	24.0%
312/1	Support and development of microenterprises	10.6%
312/11	Diversification agricultural activities of agricultural enterprises	8.9%
313	Encouragement of tourism activities	5.6%
312/3	Production of fuel in microenterprises	4.7%
312/12	Production of fuel derived from agricultural and forestry in an existing agricultural enterprises*	1.4%

*except production of biogas and its transformation into thermal energy

Source: authors' calculations based on data of RSS and [11]

Berndes and Hansson [4] concluded that large-scale bioenergy production may contribute substantially to creating jobs in rural areas in many EU countries. But, based on the comparison with the total employment in industry, it is stressed that the potential contribution from bioenergy is only a few percent.

CONCLUSIONS

The subsidies for encouraging entrepreneurship and diversification into non-agricultural activities have been granted for existing microenterprises, agricultural farms and for founding and development of new microenterprises. The highest number of the supported fuelwood projects has been implemented in the least developed region of Latvia - Latgale region. Despite the support to the bioenergy projects, particularly biogas plants, having stimulated the creation of new jobs and helping to retain the existing ones in Latvian rural area, the cost of a created job is higher than predicted by rules for projects focusing on job creation in Latvia. When it comes to the public costs per working place created or retained, employment opportunities have been costly.

Further it has to be noted, that apart from the European Agricultural Guarantee Fund (EAGF) and EAFRD, other policies and national schemes are directly and indirectly targeting employment in rural areas, thus it is difficult to trace newly created and safeguarded jobs.

On an EU level it is recognized that the measures could be more cost-effective, in the sense that the amount of funding could be scaled down without markedly reducing the results achieved [12], [13]. Moreover, it is noted that the most cost-effective measure is the cheapest - the provision of advice and guidance to businesses; it is equally the case that financial instruments could be more cost-effective for its utilization to fund an additional investment [14].

ACKNOWLEDGEMENTS

This research has been funded by the National Research Programme „Innovation and Sustainable Development" (SUSTINNO) and by the Latvian Council of Science (Grant Project No 448/2012).

REFERENCES

[1] Rusali, M., Socio-Economic Resources and Structures for the Sustainable Development of Rural Economy, Agricultural Economics and Rural Development, New Series, Year VI, no. 2, pp. 199–216, 2009.

[2] OECD, The New Rural Paradigm: Policies and Governance, OECD Rural Policy Reviews, Paris: OECD Publishing, 2006.

[3] OECD, Green Growth Studies Green Growth Indicators for Agriculture: A Preliminary Assessment. Paris: OECD Publishing, 2014.

[4] Berndes, G., Hansson, J., Bioenergy expansion in the EU: Cost-effective climate change mitigation, employment creation and reduced dependency on imported fuels. Energy Policy, 35 (12), pp. 5965–5979, 2007.

[5] Davis, J., Rural non-farm livelihoods in transition economies: emerging issues and policies, Journal of Agricultural and Development Economics, Vol. 3, No. 2, pp. 180-224, 2006.

[6] OECD, Towards Green Growth, OECD Green Growth Studies, Paris: OECD Publishing, 2011.

[7] Central Statistical Bureau (CSB) of Latvia, Statistics Database, Available at: http://www.csb.gov.lv/en/dati/statistics-database-30501.html.

[8] Eurostat, Database. Available at: http://ec.europa.eu/eurostat/data/database.

[9] Rural Development Programme for Latvia 2007–2013. Available at: http://enrd.ec.europa.eu/enrd-static/country/latvia/en/latvia_en.html

[10] LR Ekonomikas ministrija, Atjaunojamā enerģija un koģenerācija. Available at: https://www.em.gov.lv/lv/nozares_politika/atjaunojama_energija_un_kogeneracija/statistika_un_petijumi/

[11] Veveris, A., Hazners, J., Ekonomikas dažādošanas pasākumu izpēte laukos, Lauku attīstības programma 2007-2013, Riga: LVAEI, 2014.

[12] European Commission (EC), Investment for jobs and growth, Promoting development and good governance in EU regions and cities, Sixth report on economic, social and territorial cohesion, Luxembourg: Publications Office of the European Union, 2014.

[13] European Commission (EC), A View on Employment, Growth and Innovation in Rural Areas, SWD(2012) 44 final, Commission Staff Working Document, Brussels, 7.3.2012.

[14] Schuh, B., Gorny, H., Kaucic, J., Kirchmayr-Novak, S., Vigani, M., Powell, J., Hawketts, J.E. The role of the EU's Common Agricultural Policy in creating rural jobs. Brussels: European Union, 2016.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016 3rd INTERNATIONAL MULTIDISCIPLINARY

BRASOV TOURISM DESTINATION PROFILING,

IN THE CONTEXT OF SUSTAINABLE TOURISM DEVELOPMENT

Assist. Prof Diana FORIS[1],

Assoc. Prof Ruxandra-Gabriela ALBU[2],

Assoc. Prof Ioana-Bianca CHIȚU[2],

Prof. Tiberiu FORIS[2],

Assoc Prof Codruța-Adina BĂLTESCU[2]

[1] Faculty of Food and Tourism, Transilvania University of Brasov, **Romania**

[2] Faculty of Economic Sciences and Business Administration, Transilvania University of Brasov, **Romania**

ABSTRACT

The main purpose of this paper is to establish the Brasov tourist destination profile, in the context of sustainable development. The paper takes into account the European Tourism Indicators System (ETIS) which provides a guide for using indicators that involves the following steps: Raising Awareness, Creating a Destination Profile, Forming a Stakeholder Working Group (SWG), Establishing Roles and Responsibilities, Collecting and Record Data, Analysing Results, Enabling On-going Development and Continuous Improvement Flow. Destination profiling provides an overview of the destination and stakeholders and is helpful in the process of data collection. The European Tourism Indicators System version proposed in the paper is adapted for the characteristics of the Brasov tourism destination. In conclusion, Brasov County is an important tourism destination, well known at national and international level for its natural and manmade resources, for its diversified structure of the tourism sector and for the high quality of the tourism services.

Keywords: tourism destination, sustainable development, ETIS, destination profile

INTRODUCTION AND RESEARCH METHODOLOGY

In the classic opinion, by "travel destination" one may understand a country, a region within a country, a city, a village or a resort [4, pg.26] or the place or geographical space where a visitor or a tourist stops either for one night, or for a certain period of time or the final point of tourists' vacations [5, pg. 67]. The travel destination consists both in a tangible, physical destination localized geographically, and in an intangible socio-cultural entity, represented through its inhabitants/employees, with its traditions, habits, life style, culture and social relations [2, pg. 594].

The European Tourism Indicators System (ETIS) was created in order to support the management of travel destinations and it is a tool which monitors, manages and improves their sustainable tourism development. ETIS was developed by the European Union and consists of a set of indicators and a set of data that provide together information, monitor the travel destination performance and support the process of making viable decisions from ecological, political, cultural and social perspectives [6].

The system is flexible, the basic principle being that both the responsibility of a travel destination and the ownership and right to make decisions shall be divided within a group consisting of all actors (from the public and private sectors) that may influence its development and proposes the performance of the following steps in order to create the conditions for a sustainable tourism development: to increase the awareness, to create a destination profile, to set a work group of the interested parties (WGIP), to define the roles and responsibilities, to collect and record data, to analyze the results, to assure permanent development and improvement. Profiling a travel destination represents one of the main steps to be performed in order to set a strategy for sustainable tourism development. The synthetic presentation of the profile of Brasov destination included in this paper was drawn up using the components indicated by ETIS, adapted to the characteristics of the assessed destination. Profiling the destination provides an overall image of the destination and for the interested parties represents a real support within the process of data collection.

FINDING RESULTS - THE PROFILE OF BRASOV DESTINATION

Located in the center of the country, in the South-West of Transylvania, the destination under study has an area of 5,363 km², i.e. 2.2% out of the country's area, and the population density is of 111 inhabitants/km². The territory of Brasov, a place with a long Romanian history, mentioned within the records of 13th and 14 centuries also as an administrative unit, has deep roots in the past. The first marks of habitation of the city date back from the Stone Age (Neolithic), and starting from the Bronze Age we have the archaeological attestation as well [1]. The county of Brasov is located at the junction of three large natural units: Eastern Carpathians, Meridional Carpathians and Transylvania Plateau, where from a significant complexity and diversity in the geological and geomorphological features, reflected into the climate, waters, soils, flora and fauna [1].

The county of Brasov has a temperate continental climate. The multi-annual average air temperature is 7.6ºC, the maximum absolute temperature being 37ºC in the month of August [1]. Brasov destination is characterized by a well expressed altitude flora display, but with obvious local contrasts related to the regional particularities. The fauna of the county of Brasov divides depending on the major forms of relief and on environment, terrestrial and aquatic. Rare species populate especially the forms of high relief covered by forests. Out of all fauna-specific items, mammals present the highest cynegetic and scientific interest.

According to the data of Population and Housing Census of 2011, the stable population of the county of Brasov is of 549,217 inhabitants, out of which 72.3% in the urban area and 27.7% in the rural one [7].

Today, Brasov county economy is diverse, with strong accents in the field of industry. Within the county of Brasov developed the automotive industry, the metal processing industry, the chemical industry, pharmaceutics, wood industry, food industry, but also the fields of constructions, transportation and services.

Natural Tourism Potential. Very few regions in the country reunite such a large diversity of landscapes, geological and paleontological formations, valuable elements of flora and fauna as the county of Brasov. Here we have 32 protected areas, and also an impressive number of natural monuments, 82 species of plants and numerous species of animals protected by law. The surface of protected areas is 29,071.08 ha, representing around 7% out of the surface of the county of Brasov.

Anthropic Tourism Potential. The county of Brasov comprises various attractions of tourist interest for both Romanian and foreign tourists, for long and medium stays, as well as for weekends. The Middle Age represents the flourishing times for the area of Brasov. Fortresses, parts of walls, fortified churches from those times still stand even today. This is an important tourism resource, which shall be valued to its full potential. The monuments from Brasov area are characterized by richness and diversity, by age and continuity.

The varied natural and anthropic tourism potential of the county of Brasov generates different forms of tourism: mountain tourism (winter sports, hiking, relaxation, speological tourism, climbing, scientific knowledge etc.); business tourism; cultural-historic tourism; rural and agritourism; sport tourism; leisure tourism; religious tourism; event tourism; health tourism; adventure tourism; ecotourism; transit tourism; science tourism on different topics; gastronomic tourism; local community based tourism.

Tourism Infrastructure Analysis for Brasov Tourism Destination. Brasov destination represents an important tourism center, know both in Romania and abroad, due to its natural and anthropic resources, and also to a varied structure in terms of tourism offer and a high level of services. The tourism offers elements, i.e. the natural and anthropic resources, are capitalized through the technical and material base of tourism (tourism specific infrastructure), part of which are the accommodation, food and leisure units networks.

The county of Brasov has a wide range of accommodation units, succeeding thus to address to all types of tourists. Table 1 presents the evolution of the number of accommodation units and their structure depending on the main types of accommodation.

Table 1. The evolution of the number of accommodation units in the county of Brasov, structured on types of units (2005-2015)

Category	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total, from which	403	489	471	493	482	474	526	646	750	787	886
Hotels	42	52	50	57	60	65	79	89	101	112	123
Hostels	3	4	4	3	3	5	7	14	19	23	26
Motels	11	11	9	9	6	6	8	11	11	8	9
Villas	46	51	42	39	37	36	39	58	80	79	87
Lodges	13	17	13	14	13	19	22	21	28	28	33
Tourist boarding houses	107	135	137	153	155	155	176	185	217	226	250
Agritourist boarding houses	155	193	200	206	198	177	186	260	286	299	347
Other units	26	26	16	12	10	11	9	8	8	12	11

Source: The National Statistics Institute, Tempo Online database (http://statistici.insse.ro/shop/, accessed on June 05, 2016)



Figure 1. The evolution of the number of units depending on the main types of tourism accommodation in the county of Braşov, during 2005-2015

As it can be seen in figure 1, the total number of the tourist housing units in the county of Brasov increased by 120% during the period of time under analysis. Considering the types of structures, the number of hotels increased by 193%, that of hostels by 767% (being actually the type of accommodation unit which registered the most dynamic evolution during 2005-2015), and tourist and agritourist boarding houses (together) registered an increase by 127.8%. The financial crisis affected the evolution of the number of accommodation units in the county of Brasov as well, the most touched being the agritourist boarding houses and villas, the number of which decreased (they were closed) during the times of economic and financial instability (2009-2010), returning gradually on a positive trend (they were reopened) between 2011 and 2015.

Food-Specific Tourist Units. According to the information provided by the National Authority for Tourism, the county of Brasov houses 594 classified public food units, out of which 80.6% are located in the urban area and only 19.4% in the rural one. According to the same source, within the destination under analysis there are 56,914 places in the classified public food units, out of which 83.1% are located in the urban area and only 16.9% in the rural one [9, *processed based on data available on the National Authority for Tourism website, http://turism.gov.ro/informatii-publice*].

An obvious feature of the food unit network in the county of Brasov is given by *the presence of a wide range of food units*, able to meet a various sphere of needs. Thus, as the figure (2) indicates, the restaurants represent 62.8% out of the number of units and 78.6% out of the number of food places, the bars represent 16.0% out of the number of units and 30.8% out of the number of places, while fast food units represent 5.4% out of the number of units and 6.4% out of the number of table places.

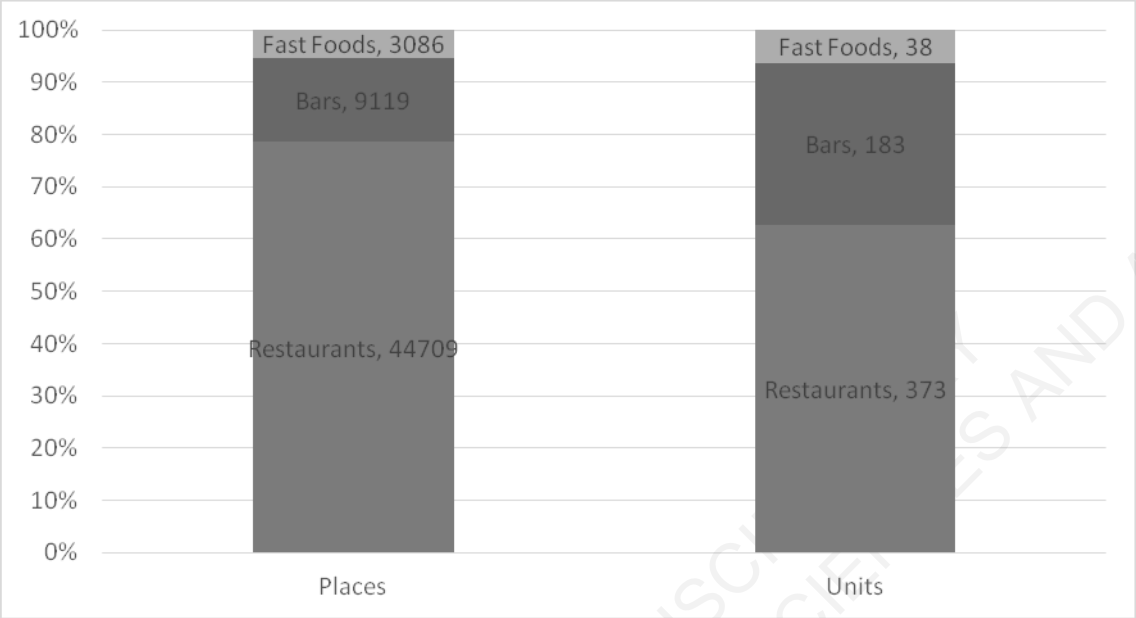


Figure 2. The distribution of the number of public food places in the county of Brasov, divided on structure types
Source: processed based on data available on the National Authority for Tourism website, http://turism.gov.ro/informatii-publice/, accessed on February 18, 2015

Leisure-Specific Tourist Units. The leisure sector is essential when it comes to meeting the tourists needs, fact which confers it the status of main part of tourist offer. Leisure infrastructure development in the county of Brasov complies with the requirements of increasing the destinations/resorts attractiveness. Moreover, for some of the county's localities, leisure is the main mean of tourist offer individualization and product variation. Performing leisure activities implies the existence of certain proper and extremely varied equipment, part of them being provided within different accommodation units, while other being organized at the level of travel destinations, being managed by stand-alone units. During the past years, the leisure infrastructure faced an increasingly level of development. We got swimming pools, cyclotourism routes, ski slopes (that imply: cable-transport facilities, snow guns, floodlit skiing, ski slope maintenance equipment), mini-golf courses, tennis and paint-ball courts, equitation, theme parks and so on. Furthermore, there are numerous private gyms for workout and fitness, and the high interest for martial arts led to the establishment of new gyms. We may thus conclude that the county of Brasov has a relatively varied offer of leisure forms and units.

When it comes to practicing winter sports, the county of Brasov is one of the best equipped areas in Romania. In Poiana Brasov, Predeal, Pârâul Rece, Moieciu and Bran there are 22 ski slopes, with a total length of the skiing area of around 27 km, that may be used, depending on the weather conditions, from December till March.

According to the official website of the National Authority for Tourism in Romania, in the county of Brasov there are 121 certified mountain hiking routes, spread within the seven mountain massifs located in the county's area [10, *processed based on data available on the website of the National Authority for Tourism in Romania, http://turism.gov.ro/informatii-publice*]. In the county of Brasov there is one covered

Olympic-size skating rink (in the city of Brasov), and another one in Poiana Brasov. During every cold season there are small-sized skating rinks arranged both in the city of Brasov, and in other destinations where the tourism activity is concentrated in winter (for instance, Râșnov).

Although it is not a travel destination with a climate proper for water sports, the county of Brasov has an Olympic-size swimming pool (at the sports hall in the city of Brasov), and also several leisure centers fitted with their own pools (Paradisul Acvatic, Garden Club, Aqua Parc, Leisure Center and Olimpia Pool in the city of Brasov).

Tourist Info Points. There are 5 tourist info points within the county of Brasov [1]. The *purpose* of such a center of information consists in meeting and informing the tourists in respect of the local tourism offer, in promoting globally the destination, in taking part to the local and regional tourism policy, as well as in coordinating the tourism stakeholders.

The Analysis of Tourism Activity carried out within the Accommodation Units in the County of Brasov

The level of use in case of infrastructure may be projected by analyzing the tourism activity carried out. In this respect, two important indicators that show the tourism demand will be analyzed: tourist *arrivals* within the accommodation units and the *average length of stay*.

Table 2. Tourist Evolution and Structure housed within the Accommodation Units in the County of Brasov, during 2005-2015

Total arrivals, out of which	**448,147**	**484,044**	**556,789**	**581,961**	**451,683**	**510,196**	**642,829**	**737,810**	**834,979**	**865,689**	**997,601**
Romanians	359,259	401,307	452,559	480,400	376,716	422,133	538,327	626,917	711,440	727,244	**839,344**
share of total (%)	80.2	82.9	81.3	82.6	83.4	82.7	83.7	85.0	85.2	84	**84.1**
Foreigners	88,888	82,737	104,230	101,561	74,967	88,063	104,502	110,893	123,539	138,445	**158,257**
share of total (%)	**19.8**	**17.1**	**18.7**	**17.4**	**16.6**	**17.3**	**16.3**	**15.0**	**14.8**	**16**	**15.9**

Source: The National Statistics Institute, Tempo Online database (http://statistici.insse.ro/shop/, accessed on June 05, 2016)

For the period under analysis we may note a ***general trend of increase in case of tourists being housed,*** by more than 122.6% in 2015 as compared to 2005. 2009 was the only year when a decrease by 22% of tourists was registered as compared to the previous year, mark of the financial crisis effects over the tourism field in Brasov. In 2015, as compared to 2014, the number of arrivals registered in the tourist housing units

in the county of Brasov increased by 15.2%. During 2009-2015, the number of foreign tourists increased by 111%.

The travel destination of the county of Brasov, heterogeneous in respect of the tourism offer, fails in retaining the tourist for more than 2-2.4 days, the average duration being constant at this level during the entire period under analysis. Although the county has resorts and tourist areas where visitors could stay for more than two days, this aspect is not reflected in the existing statistic data.

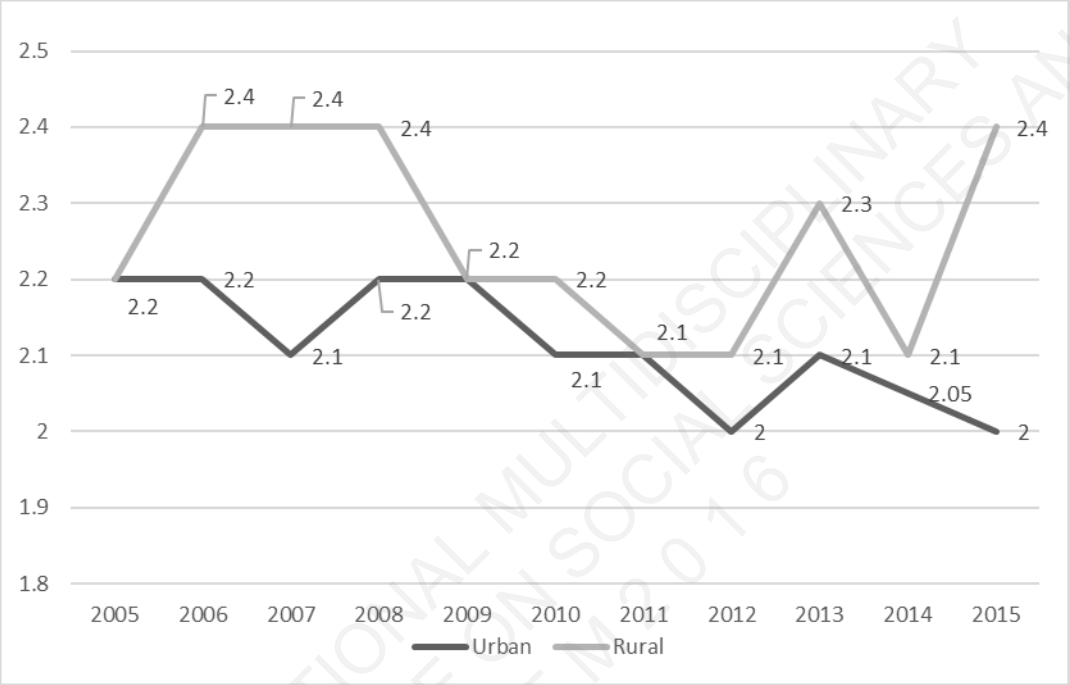


Figure 3. Evolution of the Average Length of Stay in the Urban and Rural Travel Destinations in the County of Brasov
Source: The National Statistics Institute, Tempo Online database (http://statistici.insse.ro/shop/, accessed on June 05, 2016)

CONCLUSIONS

The main motivations that highlight the utility of monitoring the travel destination aim the sustainable tourism development. Out of these we shall mention: improvement of information necessary within the decision making process; efficiency in managing the risks; setting a hierarchy in case of measure projects; setting certain standards of performance; more acceptance and support from the community; improvement of visitors' experience; improvement of financial results/cost reduction. Collecting data for a wide range of matters, relevant in case of tourism impact on the local economy, community and environment, will help the destinations to have a clear image over what is actually going on within the monitored destination [1, pg. 175].

The profile of the travel destination under study combines the following elements: Brasov is an important tourism center characterized by plenty of natural and anthropic resources, and also by a varied structure in terms of tourism offer; the varied natural and anthropic tourism potential of the Brasov destination generates different forms of tourism that offer the possibility to satisfy a wide range of tourists; the leisure infrastructure registered a high development within the destination under study. New

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

swimming pools, cyclotourism routes, ski slopes appeared, there are numerous private gyms for workout and fitness. Currently, the destination of Brasov has a relatively varied offer of leisure forms and units. When it comes to practicing winter sports, the destination is one of the best equipped areas in Romania; the concentration of the tourist attractions in certain areas of the county of Brasov is reflected in the way in which the tourist arrivals were distributed on the main travel destinations; for the period under analysis one may note a general trend of increase in case of tourists being housed, but the travel destination of Brasov, heterogeneous in respect of the tourism offer, fails in retaining the tourist for more than 2-2.4 days, the average duration being constant at this level during the entire period under analysis.

Ritchie [3, pg.9] considers that a destination without a sustainable development cannot become competitive. A rigorous setting of the destination's profile, taking into account all offer and demand features, creates the conditions so that the destination become competitive, avoiding this way the non-profitable investments. Moreover, an accurate profiling of the Brasov destination may provide it with undoubted benefits in the economic, ecologic and social fields.

Acknowledgements

The research presented in this paper is supported by the Romanian Executive Unit for Financing Higher Education, Research, Development and Innovation, the Joint Applied Research Projects PN-II-PT-PCCA-2013-4, under the contract no. 324/2014.

REFERENCES

[1] Brătucu, G., Ispas, A., Chițu, I., Cismaru, L., Albu, R.G., Dincă, G., Băltescu, C., Foris, D., Demeter, T., Simon, T., Tudorache, D.M., Musteață, P.M., Fratu, D.A., Gliga, I.I., Chicomban, M., Județul Brașov-Profilul Destinației turistice, Editura Universității Transilvania din Brașov, Brașov, 2015.

[2] Reid, R.D. et al., Hospitality Marketing Management, Ed. John Wiley and Sons, 2009, p.594.

[3] Ritchie, J.R.B., Crouch, G.I., The competitive destination: a sustainable tourism perspective, Ed. CABI, 2003, p.9.

[4] Rotariu, I, Dezvoltarea destinației turistice, Editura Alma Mater, Sibiu, 2007, p.26.

[5] Stăncioiu, A. F., Strategii de marketing în turism, Editura Economica, Bucuresti, 2002, p. 67 .

[6] European Comission "The European Tourism Indicator System, TOOLKIT, For Sustainable Destinations", 2013, ISBN 978-92-79-29339-9.

[7] http://www.recensamantromania.ro/rezultate-2/, accessed on June, 04, 2016

[8] INS, bază de date Tempo Online (http://statistici.insse.ro/shop/), accessed on June 04, 2016

[9] http://turism.gov.ro/informatii-publice/, accessed on February 18, 2015

[10] http://turism.gov.ro/informatii-publice/, accessed on November 24, 2014

CITIES COMPETE FOR INVESTMENTS: WHOSE CONDITIONS ARE MORE ATTRACTIVE?

Assoc. Prof. Dr. Irina Glebova [1]

Assoc. Prof. Dr. Ruslan Galiakhmetov [2]

Assoc. Prof. Dr. Dmitriy Yurkov[3]

[1] Kazan (Volga region) Federal University, **Russia**

[2] Kazan (Volga region) Federal University, **Russia**

[3]Northern (Arctic) Federal University named. M. V. Lomonosov, **Russia**

ABSTRACT

In a decentralized environment, cities start to fiercely compete for financial resources and investments necessary for development. Management of investment attractiveness is aimed at creating favorable conditions for investors through the development of local investment potential and reduction of investment risks. At the moment, the management of investment attractiveness undertaken by Russian cities is not systematic and requires a deeper analysis. The article provides a comprehensive analysis of the main components of investment attractiveness of the Russian million-cities. In particular, the analysis of investment activities considered changes in the amount of investments and their concentration during the period of 2002-2013. For the purpose of comparative analysis, the cities were ranked according to the amount of fixed capital investments and the amount of fixed capital investments per capita. To estimate investment potential and investment risks of the cities, the authors proposed and calculated respective integrated indicators. The results were represented in a two-dimensional matrix of investment attractiveness of the Russian million-cities.

Keywords: investment attractiveness, investment potential, investment risks, urban management

INTRODUCTION

Management of investment attractiveness is aimed at creating favorable conditions for investors through the development of local investment potential and reduction of investment risks.

An analysis of the available knowledge about the management of investment attractiveness reveals that a great attention is paid to the assessment of investment attractiveness and the use of management practices at the regional and national levels [1], whereas the regulation of investment processes at the local level has its own peculiarities and requires further investigation [2]. At the moment, the management of investment attractiveness undertaken by Russian cities is not systematic and, in most cases, does not account for all relevant features of urban development. In this case effective urban management will stimulate the development of the city, its budget revenues and attractiveness [3,4].

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE SOCIAL SCIENCES AND ARTS

The investments are more effective in the cities, which are able to establish more favorable conditions for investors [5].Therefore, to make a well-grounded decision, for potential investors it is crucial to undertake an adequate assessment and forecast of local investment attractiveness.The conceptual bases for studying and managing investment activity were developed by a number of international scholars, such as William Sharpe, Gordon J. Alexander, Jeffrey W Bailey, G. Fraser-Sampson and others [6,7,8].

Despite the existence of different methods for evaluating investment attractiveness, their principles are more or less uniform and contain similar stages of evaluation [9]. Significant differences in the research methods and results are associated with the preferences of different authors for particular indicators to be included in their analysis.

The object of research for this study are cities with more than million inhabitants (million-cities) in Russia. The article provides a comprehensive analysis of the most important components of investment attractiveness of the Russian million-cities [10].

The evaluation of investment attractiveness of the million-cities in Russia was based on the analysis of the following components: investment activities; investment potential (integrated indicator); and investment risk (integrated indicator).To compute the abovementioned investment activities and integrated indicators, we have used the partial (integrated) criteria, computational and analytical indicators.

In particular, to compute the integrated indicator for investment potential we have used partial indicators grouped into the following five clusters:

1) demographic potential: the natural increase in population per 1000 people(in %), the healthcare index (calculated using World Economic Forum methodology that accounts for morbidity, infant mortality, life expectancy, and the adequacy of the financing of the sector);

2) labor potential: the share of working-age population in the total population (in %); the share of people below working-age in the total population (in %); the expenses of the city budget for education per capita (in rubles); the growth and decline in population due to migration;

3) consumption potential: the retail trade turnover per capita (in rubles); the volume of paid services per capita (in rubles); the average monthly nominal accrued wages (in rubles); the amount of work performed by the activity "construction" per capita (in rubles); the average cost of apartments (rubles per 1 sq.m.);

4) financial potential: the budget expenditures per capita (in rubles); the net financial results per enterpris(in %);

5) institutional (market) potential: the number of companies and organizations per 1000 people; the retail space per capita.

To compute the integrated indicator for investment risk we have used the following indicators: the share of unprofitable enterprises and organizations, the number of reported crimes per 100 thousand people; the number of registered crimes under Art. 291 of the Criminal Code, "Giving bribe" per 100 thousand people; the number of registered crimes under Art. 290 of the Criminal Code "Taking bribe" per 100 thousand people. The selection of partial indicators was among other criteria determined by the availability of statistical data at the local level.

Since the base indicator X is associated with integrated indicator by monotonic increasing dependence, the standardized variables (for investment potential and investment risk) are calculated using the following formula:

$$\tilde{x} = \frac{x - x_{\min}}{x_{\max} - x_{\min}},$$

where $x_{\min}$ is the lowest value of the base indicator and $x_{\max}$ is the highest value of the base indicator.Thus, after the standardization the range of possible values of the indicators is limited to the [0,1] interval. For a comparative analysis of the investment activities in the million-cities, we use the amount of fixed capital investments and the amount of fixed capital investments per capita as the main indicators. Further in the paper, we report our findings based on the analysis of the investment activities undertaken by Russian million-cities.To characterize heterogeneity of the investment activities among the studied cities (i.e. differences in the relative amounts of attracted capital investments) we have applied the following modified version of a Herfindahl-Hirschman index, commonly used to assess the monopolization of the market:

$$HHI = \sum_{j=1}^{k} \left(\frac{i_j}{I} * 100\right)^2,$$

where k is the number of investigated cities; i_j - investment in the j-th city; I - the total amount of fixed capital investments attributable to all cities, included in the analysis. The dynamics of the index is shown in Figure 1



Dynamics of the Herfindahl-Hirschman index[1]

In theory, the Herfindahl-Hirschman index can take the maximum value of 10000, if all investments are concentrated in a single city. The minimum value corresponds to a uniform distribution and may be equal to 769,2 (10000/13). As reported in Figure 1, the

[1] Source: Authors' calculations based on data

value of the index for the period of 2002-2013 ranges from 812 to 948. Therefore, we find that there is a relatively uniform distribution of investment resources between the million-cities in Russia. However, it is necessary to highlight that in 2005 the city of Kazan has the highest concentration of fixed capital investments (389,6) for the period of 2002-2013. Moreover, in 2005 the Herfindahl-Hirschman index reaches its highest value for the whole investigated period - 948. Since 2005 the value of the index starts to fall and reaches its minimum value in 2008 – 812.

After 2008, the index begins to grow reaching a local maximum of 893 in 2011 (the highest concentration of fixed capital investments is reported in Ekaterinburg and Kazan). Then the index starts to decline and in 2013 reaches the value of 812, which also corresponds to the local minimum in 2008. In 2013, there are three leader cities in term of the amount of fixed capital investments, namely, Ekaterinburg, Kazan and Perm. However, the gap between these three leaders and the other cities is not very large. During the studied period, Volgograd displays the lowest concentration of fixed capital investments.Given the changes in the Herfindahl-Hirschman index, we can assume that these changes are associated with the changes in overall economic conditions due to the impact of the economic crisis. Therefore, the reduction in the index can primarily be explained by the decline in economic activity in the cities with the highest concentration of fixed capital investments. All considered million-cities are also administrative centers of their respective regions. Being “growth points” for their regions, these cities make a significant contribution to their economic development. Specific weights of the million-cities in the amount of fixed capital investments in their respective regions are reported in Figure 2.

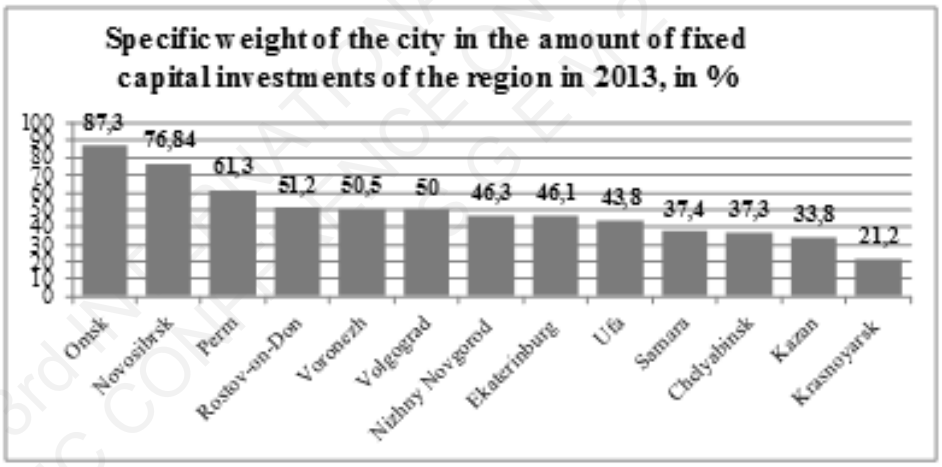


Figure 2. Specific weight of the million-cities in the amount of fixed capital investments of the respective region

The highest variation in the specific weights is reported for the city of Novosibirsk with the values ranging from 53,3% in 2003 to 81,2 in 2010. In 2013, the specific weight of Novosibirsk equals to 76,8%. In Omsk, the values range from 67,6% in 2002 to 87,9% in 2009; and the weight equals to 87,3% in 2013. Instead, Perm has a medium variation ranging from 53,8% in 2003 to 63,9% in 2008. The city of Voronezh, on average, accounts for about 65% of the amount of fixed capital investments of the region.

In Kazan, after a sharp reduction of the specific weight of investments by about a half in 2006 (as compared to 2005), the value remains in the interval between 32,8% and 43,9%. Similarly, Ufa has its values ranging from 34,0% in 2003 to in 46,2% in 2009. In Nizhny Novgorod, the values of the specific weigh range from 34,2% in 2008 to 57,6% in 2007. Samara, Chelyabinsk, and Krasnoyarsk do not display strong variations in the specific weights with the average values about 40,7%, 37,1%, and 26,3%, respectively. Finally, in Rostov-on-Don the value ranged from 48,7% in 2003 to 51,2% in 2013.

For the regions with the highest concentration of fixed capital investments in the million-cities, we can assume that either these regions do not devote enough attention to the development of the rest of their municipalities or (and) local authorities themselves perform a mediocre job in enhancing investment activities on their territories. On the contrary, relatively low specific weights suggest for a uniform development of the municipalities in the region. Moreover, the sudden downward changes in the index sometimes can be explained by a completion of major programs and projects in the million-cities or in other parts of the region.

Table 1 reports the results of the ranking of million-cities in terms of investment risk and investment potential.

Table 1. Ranking of million-cities on investment risk and investment potential[2]

City	**Integrated indicator of investment risk**	**Ranking of investment risk (descending)**	**Integrated indicator of investment potential**	**Ranking of investment potential**
Volgograd	2,32	1	0,26	12
Chelyabinsk	2,05	2	0,39	8
Perm	2	3	0,45	7
Krasnoyarsk	1,98	4	0,50	5
Novosibirsk	1,86	5	0,54	4
Omsk	1,56	6	0,20	13
Kazan	1,55	7	0,58	3
Ekaterinburg	1,26	8	0,62	2
Nizhny Novgorod	1,2	9	0,38	9
Samara	1,18	10	0,36	11
Voronezh	0,93	11	0,37	10
Rostov-on-Don	0,73	12	0,46	6
Ufa	0,28	13	0,71	1

[2] Source: Authors' calculations based on data

In order to compare the million-cities, these integrated indicators of investment potential and investment risk can be displayed on a two-dimensional matrix (see Figure 3).

On the matrix, the numbers reported in the parenthesis are the rankings of the million-cities according to the amount of fixed capital investments and the amount of fixed capital investments per capita, respectively.

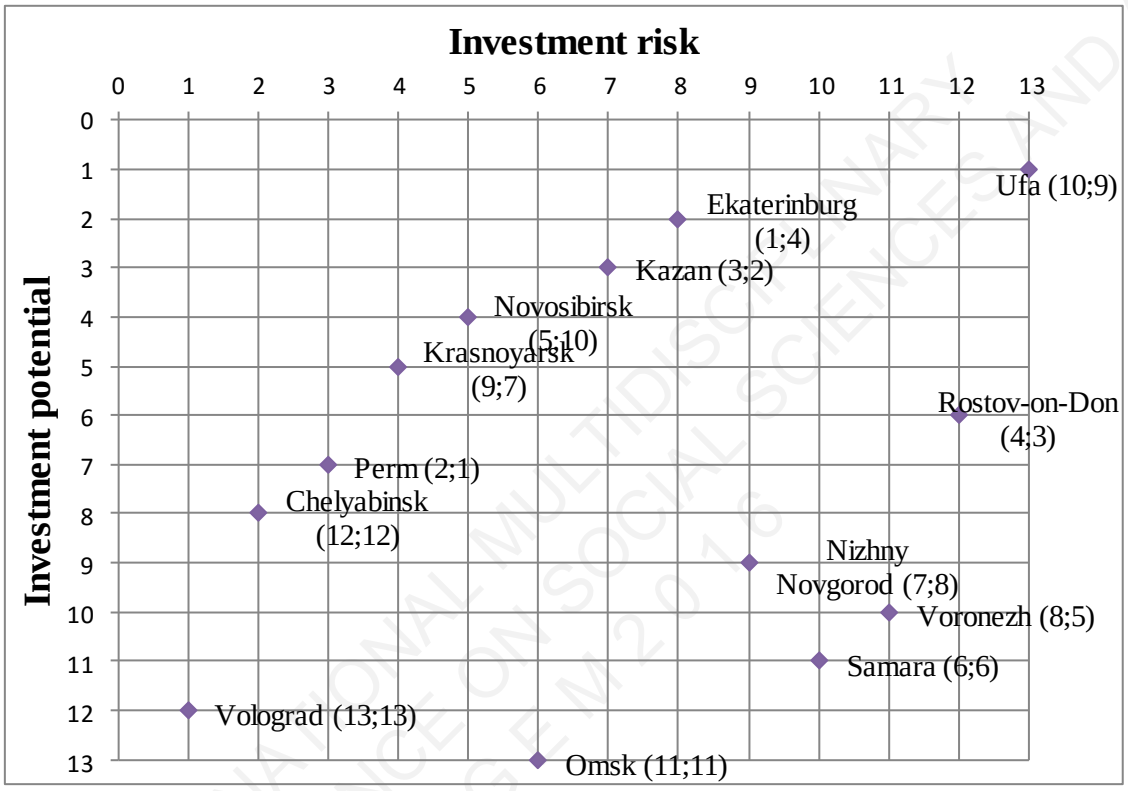


Figure 3. Two-dimensional matrix of investment attractiveness of the Russian million-cities[3]

The results reported on the two-dimensional matrix have the following implications: (see Figure 3):
- maximum investment potential and minimum investment risk are in the city of Ufa;
- high investment potential and medium investment risk are in Ekaterinburg, Kazan, and Novosibirsk;
- medium investment potential and high investment risk are in Chelyabinsk, Krasnoyarsk, and Perm;
- medium investment potential and medium investment risk are in Nizhny Novgorod;
- low investment potential and low investment risk are in Samara and Voronezh;
- low investment potential and maximum investment risk are in Volgograd;
- minimum investment potential and medium investment risk are in Omsk.

Figure 3 reveals that, despite its high investment potential and low investment risk rankings, the city of Ufa displays a relatively low performance in terms of investment

[3] Source: Authors' calculations based on data

activity as compared to other million-cities. As expected, Chelyabinsk, Nizhny Novgorod, Voronezh, Volgograd and Omsk, which are ranked in the 8-13 positions in terms of investment potential, also perform poorly in terms of investment activity. However, Voronezh is ranked 5th in terms of the amount of fixed capital investments per capita. Despite its low investment potential ranking, Samara is in the middle of the cohort in terms of investment activity.

Moreover, despite its 7th position in the investment potential ranking, the city of Perm takes the 1st and 2nd positions in terms of components of investment activity (i.e. the amount of fixed capital investments and the amount of fixed capital investments per capita). On the contrary, Krasnoyarsk with its 5th position on the investment potential ranking and 4th position on the investment risk ranking takes only the 9th position on the amount of fixed capital investments and 7th position on the amount of fixed capital investments per capita. Finally, Novosibirsk with its high investment potential and medium investment risk rankings took only 10th position on the amount of fixed capital investments per capita.

The results of the analysis suggest that the investment attractiveness of the city is affected by a wide range of factors. Moreover, since each million-city also represents an administrative center of its region, the great regulating effect is provided by regional authorities, including mechanisms of financial support. The investment attractiveness of the city is also affected by its individual characteristics, such as a comparative advantage in tourism or in certain industry.

Therefore, for the successful implementation of municipal programs, it is important to determine the right indicators measuring the achievement of program objectives and directly monitor the program implementation.

Our study also has revealed that instruments and mechanisms, laid down by federal legislation to establish favorable conditions for developing investment activities in the municipalities, are not really effective and sufficient in improving investment attractiveness of the cities. A lot depends on regional authorities (e.g. regional implementation of a “one-stop-shop” principle for investment projects) and on municipal authorities that decide whether to partially of fully apply the available instruments and mechanisms of managing investment attractiveness.

There is also a problem of limited financial flexibility of the cities, due to their dependence on the decisions made by regional and federal authorities in establishing tax rates and distributing inter-budgetary transfers.

Due to the lack of clear regulation and well-defined procedures, the provision of both regional and municipal support to investors may turn into a complicated and time consuming process. Thus, in the absence of complete and updated information about available instruments, mechanisms and infrastructure to support investments, potential investors remain uninformed and unaware of possible opportunities that exist in the city.

Therefore, for local authorities it is important to play a more active role in attracting investments to their cities, for instance, by offering municipal property to be included into regional investment programs and by participating in regional and federal programs.

Our analysis has shown that not all cities update information contained in their investment passports. Some cities even do not have such a document. Considering long-

term investment planning, it is very important to implement measures to support investment activities in the city coherent with the priority directions of its development. Finally, cities need to develop their own investment strategies.

CONCLUSION

The quality of urban environment determines the investment attractiveness of the territory, such as the investment potential and investment risks of the city. In our study, the investment potential was computed on the basis of such partial indicators as the demographic, labor, consumption, financial and institutional potentials. For the investment risk, we have used the share of unprofitable organizations and the crime figures. By implementing robust program activities, local authorities may improve each of these blocks by impacting their constituent indicators. Such activities may involve the implementation of various specific programs aimed at improving the living conditions of certain categories of citizens, increasing the quality of housing and communal services, improving the level of healthcare and education, providing public amenities and developing territories, and increasing the labor productivity and employment.

All the problems identified in the study are systemic in nature. They are typical for most of the cities. The solution of these problems requires the implementation of complex measures for developing and managing investment potential, complemented by simultaneous revision of the entire system of investment planning in the cities.

REFERENCES

[1] .Jackson, C. Retail planning and institutional property investment (Article) Regional Studies Volume 40, Issue 5, July 2006, Pages 555-561

[2] Kautto, M. (2002). Investing in services inWest European welfare states. Journal of European Social Policy, 12(1), 53–65.

[3] Chakrabarty, B.K. (1998). Urban management and optimizing urban development models. Habitat International, 22(4), 503–522.

[4] McGill, R. (1998). Urban management in developing countries. Cities, 15(6), 463–471.

[5] Pollock, P. (2008). Urban growth management strategies. Rocky Mountain Land Use Institutewww.law.du.edu/rmlui Accessed 15/09/14

[6] Chakrabarty, K.B. (2001). Urban management: Concepts, principles, techniques and education. Cities, 18(5), 331–345.

[7] William Sharpe, Gordon J. Alexander, Jeffrey W Bailey. Investments. Prentice-Hall, 1999

[8] G. Fraser-Sampson The Pillars of Finance: The Misalignment of Finance Theory and Investment Practice, 2014th Edition

[9] Bodie Z., Kane A., Marcus A.J. Investments McGraw-Hill, 2014. — 1080 p. in color. — 10th ed. — ISBN: 0077861671, 9780077861674

10.http://www.gks.ru/ - Federal state statistics service

COMPARISON OF INFORMATIONAL RESOURCES'ASSESSMENT GATHERED FROM MANAGERS AND EMPLOYEES OF THE MAJOR POWER INDUSTRY COMPANY

Ing. Marie Štěpánková[1]

[1] University of Economics, Faculty of Business Administration, Department of Human Resources Management, Prague, **Czech Republic**

ABSTRACT

What do organizations need in order to operate correctly is information and an access to information in terms of information dissemination, efficient methods applied to informing key people who are in need of that information at the particular moment when such a need was established. These are the processes of communication essential to a successful functioning of any organization. The power industry company is aware of having a crucial problem in the area of communications. That was the moment for us to propose to organize a research survey of the corporate communication field and its inter-relations in order to find a solution associated with informational resources, their assessments and providers of information, i.e. managers and employees of the power industry company. Thus, we have completed a research among a total number of 300 employees working with a large power industry company in Bulgaria. The number of 116 managers participating in the research occupied positions in various hierarchical levels and together with the rest of employees, they all assessed twelve informational resources on basis of qualities stipulated by the AIMQ model and amended by a few purposefully targeted questions.

As a framework of our research we have chosen the AIMQ model developed by Lee and his collective of authors. This particular research comprises 15 categories enumerated as follows: 1. Accessibility; 2. Appropriate Amount; 3. Believability; 4. Completeness; 5. Concise Representation; 6. Consistent Representation; 7. Ease of Operation; 8. Free-of-Error; 9. Interpretability; 10. Objectivity; 11. Relevancy; 12. Reputation; 13. Security; 14. Timeliness; 15. Understandability [1]. Results are indicative of significant differences in ratings of a great variety of informational resources as well as in differences in managers and employees who shall be considered an independent indicator of ultimate and specific problems in communication in the organization.

Keywords: Corporate communication, internal communication, communication channels

INTRODUCTION

Communication represents the key to efficiency within an organization along with motivation and professional competence. All the members of the company spend most of their time communicating in a form or another, no matter their position within the hierarchy of their company. Managing company brings many challenges to managers. Not only delivering expected results, running day-to-day operation with all

responsibilities, but also managing people of various backgrounds [2]. Due to the fact that the number of employees from services and offices is bigger than the number of production workers, a need for improving communication has been noticed because it is necessary to have a deeper collaboration between work colleagues and the hierarchical levels as teamwork has been spreading [3]. Nowadays, it is necessary to manage performance of employees in order to assure a company survival not only by means of the performance factors and KPIs, but also through their motivation, satisfaction, engagement [4], and via communicating a quality of information. Effective managerial communication in an organisation helps to connect with employees, build positive relationships and frame attitudes and behaviours of employees in the workplace [5]. It is apparent that companies endeavour for a close approach to real needs of their internal clients as well as employees. Subsequently, inherent employee diversity and engagement help increase the company productivity together with the particular tools used [6]. Good work in this role requires both a detailed understanding of the business from operating and financial perspectives and understanding of the strategic aspects of the organization and ways of realization of the strategy within organization mainly from the point of the human resources [7], [8]. Bell and Martin argue that managerial communication (MC) is a merger and a combination of four fields: corporate communication, business communication, organizational communication and management [9]. Relationships have been one of the pivotal concerns in management research for decades, the significance of relationships between employees and organisations has become even more salient [10]. While it may be illusory to believe that any organization can enjoy complete teams among its workforce, it is clear that certain communication characteristics can result in greater trust in manager-employee relationships, even within the context of organizational constraints [11]. Managers and leaders need to understand how to use communication strategies to build their teams and organizations to achieve departmental as well as organizational objectives. Too often individuals move into management or leadership roles without an awareness of the need to improve their managerial communication skills. These individuals may be subject matter experts whose technical skills allowed them to succeed as individuals, but when placed in a management or leadership role, they failed because they lacked the needed managerial communication skills to foster collaboration [12]. The quality of information serves as the background for all steps in communication process in the modern enterprise: establishing, opening and strengthening of communication channels. Relatively small businesses, which operate locally, have limited ability to access and utilize the large amounts of information [13]. On basis of the contention given by vanDellen, individuals with contingent self-worth process information about social relationships [14]. Although, some people may have self-worth that is more generally contingent on performance than others [15], we focused in the social information processing of people with domain-specific contingent self-worth in our research. In particular, Baldwin and Sinclair found associations in memory between success and social acceptance and failure and social rejection. Nevertheless, their findings suggest that this pattern of association varies as a function of the importance of the domain to evaluations of self-worth [15].

RESEARCH

We aimed the research at determining resemblances and differences between managers and employees based on the assessment of miscellaneous information sources in the

organization. This target information should be applied in improving the organizational efficiency by means of the internal communication as managers of the organization evaluate the Official Indirect Informational Resources such as the Intranet and Corporate Web Site high contrary to employees who evaluate them low, which could result in the internal communication of the power industry company to be inefficient.

HYPOTHESIS

We set up the elementary hypothesis of ours for the research in the following way: Managers assess the Official Indirect Informational Resources such as the Intranet and the Corporate Web Site high compared to the employees' assessments reaching rather low.

SUBJECTS

Total amount of 406 respondents participated in our research, of whom the amount of 300 were employees and 106 equalled to managers.

METHOD

To meet the objectives of the research, we designed a special questionnaire, which originates in principles of the research integrated into the AIMQ model to a great extent. Thus, we are able to assess the quality of information resources by this particular questionnaire and also are able to compare the assessment accomplished between the two parties of the research participants, i. e. managers and employees of the power industry company in Bulgaria.

Quality Parameters:

1. Preference (a preference grade) of the given information resource preferred to the other resources,
2. Correctness/reliability (credibility) of the information resource,
3. Perceived importance (sensed importance) of the information resource,
4. Frequency of use – how often it is applied as the information resource and by the recipient of information,
5. Relevancy in relation to the importance of events in the company,
6. Information dissemination from the information resource to its recipients who are in need of it.

Information Resources shall be defined as following:

1. Direct Superior
2. Top Management
3. Colleagues
4. Internal Company Email
5. Informational Email from the Secretarial Services
6. Internal SMS from the Secretarial Services
7. Web Site
8. Corporate Web Site
9. Notice Boards
10. Internal Meetings
11. In-house Magazine
12. In-house Newspaper
13. Informal Company Contacts
14. Informal off-the Company Contacts
15. Trade Unions
16. External Passive Resources (TV, newspapers, radio, …)
17. External Active Resources (forums, social networks, …)

PROCEDURE

We executed the research in 2 stages. In the first stage we distributed questionnaires to 200 managers with a positive result of 106 relevant valid replies. Then, we achieved the first preliminary results. In the second stage we distributed questionnaires to 1,000 employees. Questionnaires were filled in by employees anonymously in their work places (all over the western Bulgaria) and sealed them in envelopes. Finally, we received the total 300 of valid replies back.

ANALYSIS AND RESULTS

We compared the amount of 12 informational resources out of the total 17 information resources listed, therefore the Informational Email received from the Secretarial Services, the Internal SMS received from the Secretarial Services, the Corporate Web Site, Internal Meetings and Trade Unions were not included in the first research implemented with the managers of the organization, and therefore they could not assess them, at all. In terms of the Internal Company Email, we also decided to exclude it, because a majority of employees is not equipped with it, and this fact could entirely cause a distortion of the final research results.

Statistically significant differences between managers and employees were determined at the following information resources:

1. Direct Superior
2. Top Management
3. Web Site – the Intranet
4. Notice Boards

We shall present statistically significant differences of the results achieved between managers and employees in the figures together with brief explanatory comments, thereinafter.

Quality Parameters in the Direct Superior Information Resource

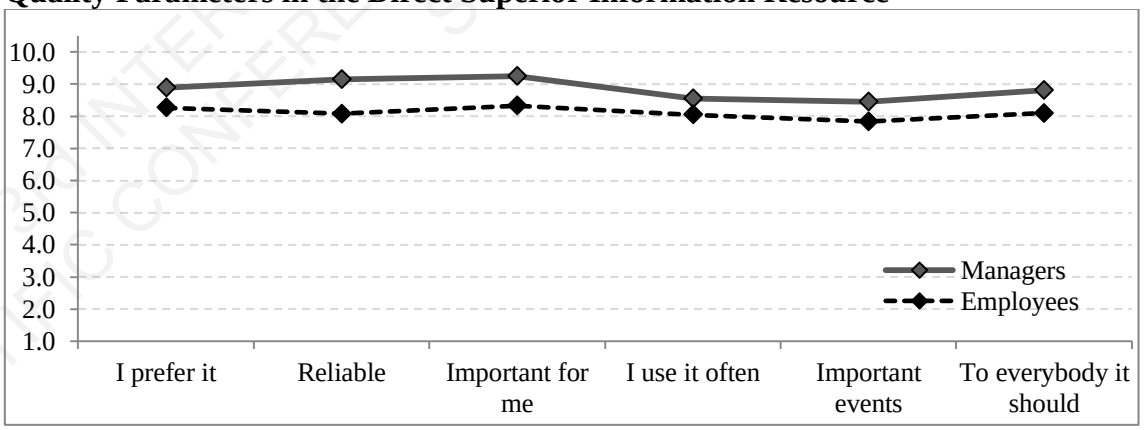


Fig.1. Mean Grades of Managers and Employees toward their Direct Manager as an Information Resource

As it is certain from the results achieved above in the Figure 1, there is a small difference between managers and employees. Although, it is a statistically significant one ($t = 3.18$; $p = 0.002$).

Quality Parameters in the Top Management Information Resource

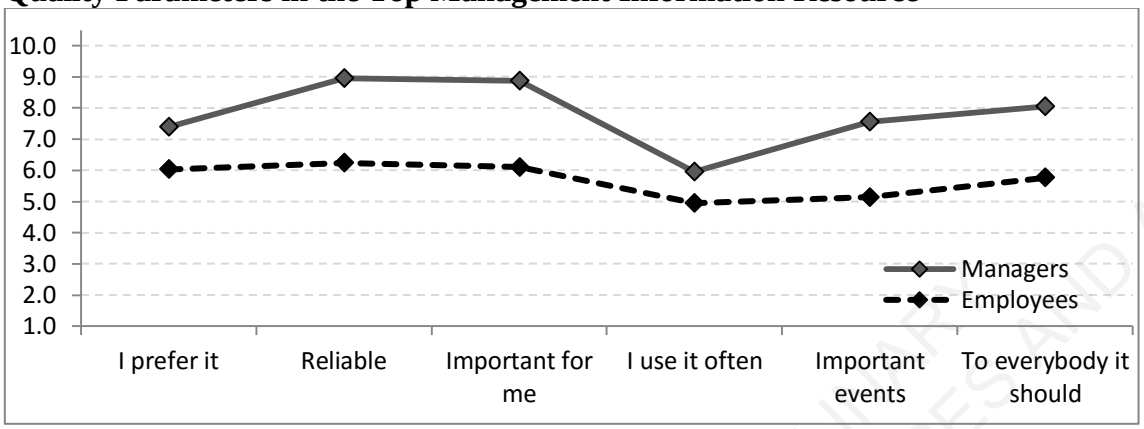


Fig.2. Mean Grades of Managers and Employees toward their Top Manager as an Information Resource

The difference shall be obvious herein as for the Top Management represents the position of Direct Superiors for a small part of managers taking part in our research. Forasmuch as employees do not generally have a frequent access to the Top Management and results gained from this research shall be well expected ($t = 6.86$; $p = 0.000$).

Quality Parameters in the Corporate Web Site Information Resource

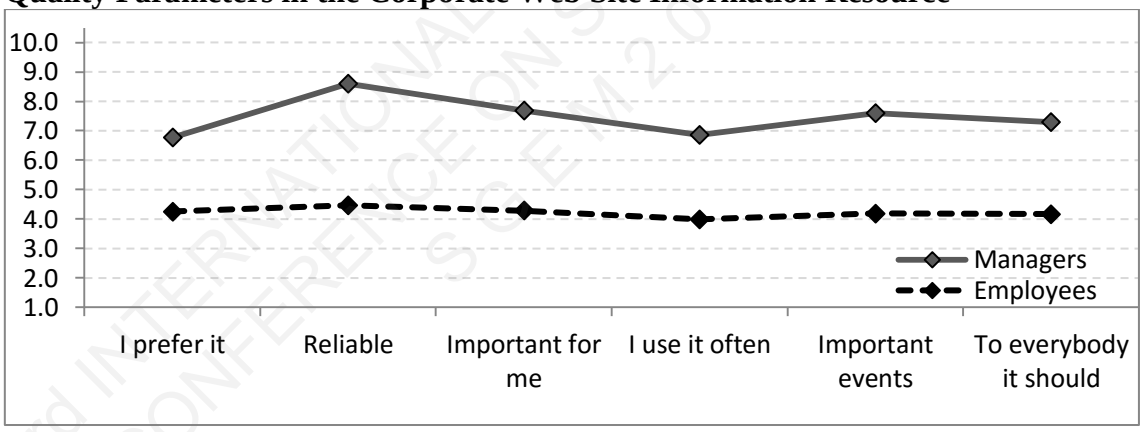


Fig.3. Mean grades of managers and employees of the internet site as an Information Resource

Commenting on the following results, the situation shall need to be clarified. The situation hereto shall apparently be distorted by virtue of the fact that the majority of managers shall be equipped with an access to the Corporate Web Site for the whole day long compared to ordinary employees, which do not have such an access in our research ($t = 9.79$; $p = 0.000$).

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

Quality Parameters in the Notice Board Information Resource

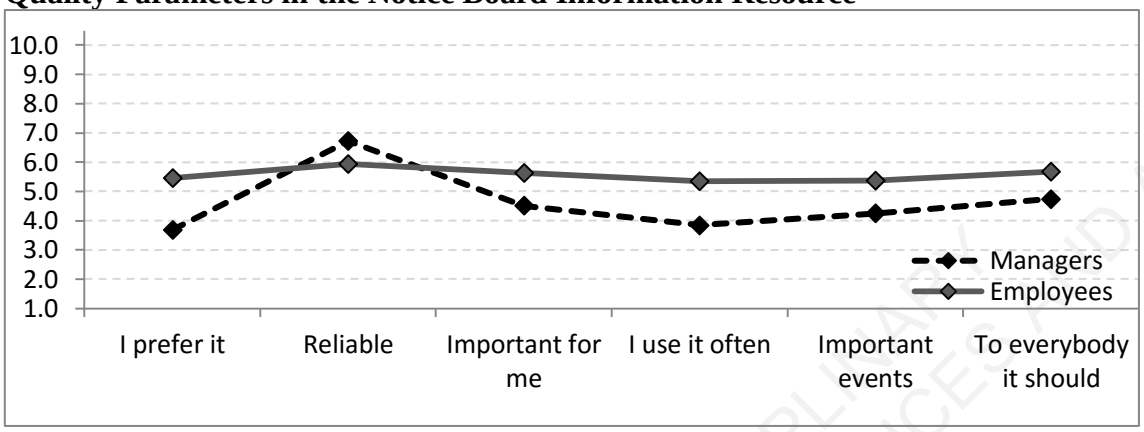


Fig.4. Mean Grades of Managers and Employees of the Information Signboards as an Information Resource

Figure 4 displays a distinct difference in how such a particular Information Resource was perceived, whereas we can evidently notice that even what managers and employees have in the notice board can be considered a reliable information resource ($t = 3.38$; $p = 0.001$).

DISCUSSION

The hypothesis designated for the research indicates that Indirect Information Resources such as the Intranet, or the Corporate Web Site, shall be assessed by managers in a better way than by employees, was unambiguously verified. There can be plenty of reasons to rationalize it, e.g. a remarkable role can hold an age when a majority of employees reaches into a pre-retirement age and is not adequately educated in IT/IS technologies. So, they have no access to computing technology in the course of the working hours, etc.

CONCLUSION

To sum up the research, it provides us with several crucial findings we realized, in particular, as they can bring an inconsiderable benefit for organizations opened to a change. The fact we consider much more essential is that the difference found in the method of application of individual Information Resources used in the power industry company creates a gap between managers and employees. Hence, the Email became a carrier of information for managers powered as the "Direct Command", but employees do not have any kind of that tool at their disposal. The identical concern appeared in the Company Intranet. It generates a sort of a culturally informational startle for the information specification and the task associated with it can fall short of its acceptance and understanding. On basis of this research, we submitted proposals to the power industry company consisting of certain preventive provisions and remedies in order to support the improvement of communication efficiency and comprehension between managers and employees.

REFERENCES

[1] Lee, Y. W., Strong, D. M., Kahn, B. K., & Wang, R. Y. (2002). AIMQ: a methodology for information quality assessment. Information & Management, 40(2), 133–146. Retrieved from http://doi.org/10.1016/S0378-7206(02)00043-5.

[2] Lankašová, R. (2015). Mediation as a conflict management tool in companies. Presented at the The 9th International Days of Statistics and Economics, Prague, Czech Republic. Retrieved from https://msed.vse.cz/msed_2015/article/158-Lankasova-Radka-paper.pdf.

[3] Todericiu, R., Stanit, A. (2012). Managerial communication and its influence on organizational performance. Presented at The Proceedings of the INTERNATIONAL MANAGEMENT CONFERENCE, 2012, vol. 6, issue 1, pages 317-322. Retrieved from http://conference.management.ase.ro/archives/2012/pdf/39.pdf.

[4] Bendová, Š., Štěpánková, M., & Koralov, M. (2015). Employee Engagement and Satisfaction Dependency on Employee Gender. Presented at the The 9th International Days of Statistics and Economics, Prague, Czech Republic. Retrieved from https://msed.vse.cz/msed_2015/article/172-Bendova-Sarka-paper.pdf.

[5] Wyatt, W. (2006), Effective Communication: A Leading Indicator of Financial Performance (White Paper), Watson Wyatt Worldwide, Arlington.

[6] Štěpánková, M., Bendová, Š.,& Koralov, M. (n.d.). EBSCOhost | 111993691 | The Case of Research Aspects Arising from Employee Satisfaction and Engagement for the Benefit of the Employer. Retrieved from http://eds.b.ebscohost.com.zdroje.vse.cz/abstract?site=eds&scope=site&jrnl=18045650&AN=111993691&h=f%2bTWnWkcL9zVlvyWRphwxcGEYg0i0OVy44Im6ykVbHca1LhwX6wfDEZoNF0Gx%2bsxjavbGVK5loNjCe4kITHRIw%3d%3d&crl=c&resultLocal=ErrCrlNoResults&resultNs=Ehost&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d18045650%26AN%3d111993691, 2015(11), p48–59. 12p.

[7] Lawler, Edward E., I., II. (2005). From human resource management to organizational effectiveness. Human Resource Management, 44(2), 165-169. Retrieved from http://search.proquest.com/docview/222114584?accountid=17203.

[8] Stritesky, M. (2014). New HR Organizational Structures in Czech and Slovak Organizations. Procedia - Social and Behavioral Sciences, 110, 130–139. http://doi.org/10.1016/j.sbspro.2013.12.855.

[9] Bell, R. L., & Martin, J. S. (2012). The relevance of scientific management and equity theory in everyday managerial communication situations. Journal of Management Policy and Practice, 13(3), 106-115. Retrieved from http://search.proquest.com/docview/1021381509?accountid=17203.

[10] Dasgupta, S.,A., Suar, D., & Singh, S. (2014). Managerial communication practices and employees' attitudes and behaviours. Corporate Communications, 19(3), 287. Retrieved from http://search.proquest.com/docview/1650541661?accountid=17203.

[11] Willemyns, M., Gallois, C., & Callan, V. J. (2003). Trust me, I'm your boss: trust and power in supervisor-supervisee communication. *International Journal of Human Resource Management, 14*(1), 117–127.

[12] Bell, R. L., & Roebuck, D. (2015). An increasing usefulness for managerial communication research on the main topics of management. Journal of Management Policy and Practice, 16(2), 71-108. Retrieved from http://search.proquest.com/docview/1726845351?accountid=17203.

[13] Michnik, J., & Lo, M. C. (2009). The assessment of the information quality with the aid of multiple criteria analysis. European Journal of Operational Research, 195(3), 850–856. Retrieved from http://doi.org/10.1016/j.ejor.2007.11.017.

[14] vanDellen, M. R., Hoy, M. B., & Hoyle, R. H. (2009). CONTINGENT SELF-WORTH AND SOCIAL INFORMATION PROCESSING: COGNITIVE ASSOCIATIONS BETWEEN DOMAIN PERFORMANCE AND SOCIAL RELATIONS. Social Cognition, 27(6), 847-866. Retrieved from http://search.proquest.com/docview/229566915?accountid=17203.

[15] Baldwin, M. W., & Sinclair, L. (1996). teem and "if. . .then" contingencies of interpersonal acceptance. Journal of Personality and Social Psychology, 71, 1130-1141.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

COMPARISON OF RECRUITMENT AND SELECTION PROCESSES EMPLOYED IN MULTINATIONAL AND SLOVAK COMPANIES

PhDr. Elena Delgadová, PhD.

Mgr. Monika Gullerová, PhD.

Alexander Dubček University of Trenčín, Faculty of Social and Economic Relations, **Slovak Republic**

ABSTRACT

The current processes of globalization have profound effects on national labour markets. Therefore, businesses and workforce must be capable of responding with speed and agility to changing labour market conditions and demands. As a European Union and NATO member country, Slovakia has been one of the attractive investment locations for multinational companies in the Central European region for its skilled and educated labour force. The purpose of the paper is to identify processes, through which multinational companies operating in Slovakia recruit and select new employees and compare them with those being most widely utilized by Slovak companies. The focus of the research done by the method of questionnaire included types of employment interview, types of selection methods, etc. In addition to the method of questionnaire, literature research method, and methods of comparative analysis and synthesis were utilized.

Keywords: labour market, multinational company, Slovak company, recruitment and selection, employment interview, written documents, Assessment Centre.

INTRODUCTION

Globalization has profound impacts on labour markets across countries. Therefore, organizations and workforce must be able to respond flexibly to changing labour market conditions and demands. As a European Union and NATO member country, Slovakia has been one of the attractive investment locations for multinational companies in the Central European region for its skilled and educated labour force. In order to be competitive in the global labour market, innovations and knowledge are of primary concern. Undoubtedly, a competitive and knowledge-based society needs highly-qualified, creative and suitably trained people possessing human capital in order to be capable of facing and responding flexibly to major challenges within a society. Human capital refers to the "ability of an individual to create new knowledge (innovations)" [9]. It follows, that new knowledge is the key prerequisite for economic and social progress of societies. New knowledge means that "it is something new, what distinguishes itself from the old one. It is new not only because knowledge is its driving engine (knowledge economy), neither because it uses innovations (innovative economy), nor because it is network-interconnected (network economy) [6]. Since new knowledge can be created

by highly-qualified people with sound human capital, we agree that "investing in human capital brings about improvement of performance, flexibility, and productivity, and enhances the ability to innovate, which naturally follows from continuous enhancement of qualification as well as skills and expertise of staff" [3]. It follows that organizations are striving to hire the best people that are the key source of competitive advantage. In order to achieve this, organizations need effective recruitment and selection procedures. Selection is the process of identifying and hiring applicants with a great likelihood of success in a job. Applicants hired should not only match the job requirements, but also have the right personal characteristics to contribute to healthy relationships among work team members, and be able to respect the values pursued by an organization [5]. The primary goal of selection is not to test and hire applicants, but to eliminate unqualified candidates. It is said that employee selection is a process of obtaining information about job applicants in order to determine who should be taken on [1]. Hiring wrong people can result in loss of market position of an organization, decreased work production, and potential loss of customers and revenue. It is maintained that "the selection of right person for the job in the place at the right time" and reasonable costs is the core of human resource development" [1]. The following selection principles are distinguished: using several sources of employee recruitment; giving preference to internal candidates; thorough assessment of candidates; selecting candidates that are capable of personal development, etc. [2].

Employee selection is a two-way communication process between an organization and an applicant. Thus, having located possible job candidates, an organization has to persuade them that it is in their interest to join the company. Job candidates, on the other hand, have to persuade the organization that they are the most appropriate ones to be hired. Organizations of today seek skilled and creative employees, with common sense, able to participate in managing, able to make decisions quickly and effectively, loyal and energetic employees, able to quickly and efficiently make decisions, etc. [1].

SELECTION PROCESS

The actual selection process is a key personnel activity. Selection process usually contains eight consecutive steps [4]:

- Preliminary interview,
- Completed application and other forms,
- Receiving applications and other written documents,
- Expert assessment of work capacity,
- Analysis of all the information received,
- Interview,
- Overall assessment and the decision to hire,
- Employment contract.

There are several techniques utilized in the selection process, such as application forms which are the evidence of the job candidate's suitability or unsuitability for a given position. Other common and frequent selection techniques include interviews, and psychological tests, such as intelligence tests which are intended to measure abilities related to thinking, aptitude tests that are designed to obtain information about such skills as mechanical ability, logic and numerical ability, and manual dexterity. Attainment tests are employed to measure the job candidate's depth of knowledge or

skills. Personality tests are also used in selection process, their shortage, however, lies in their limited validity. Assessment centre is a technique to determine whether job candidates are suitable for specific positions, such as managerial positions [8]. Assessment centre includes a variety of techniques, e.g. group exercises, interviews, presentations, examinations and psychometric testing which are used to assess candidates' personality and aptitudes.

There are several rules that employers should follow in recruitment and selection:

- job applicants should be selected solely by their abilities,
- employment legislation should be respected,
- information obtained from applicants is confidential,
- all documents should be returned to unsuccessful applicants,
- more than one selection technique should be applied,
- selection techniques and procedures should be acceptable for candidates, etc.

Selection process should be well organized and simple. There are also rules defined for job applicants, such as for instance make a good first impression during an interview, wear formal attire, be well prepared and answer interview questions clearly, manage non-verbal behaviour, etc. [7]

PURPOSE AND METHOD

The purpose of the paper is to identify processes, through which multinational companies operating in Slovakia recruit and select new employees and compare them with those being most widely utilized by Slovak companies. The research sample was made up of 4 multinational companies and 4 Slovak companies. The research was to:

- find out what sources of recruitment are used
- find out whether applicants are interviewed according to pre-established procedures
- find how many rounds are there in a job interview conducted by multinationals and Slovak companies
- find who the company personnel conducting job interviews are
- identify what written documents are required by multinational companies / Slovak companies from job applicants
- identify what selection techniques are used in multinational companies / Slovak companies
- specify what practical tasks are job applicants asked to perform as a part of the selection process
- identify what types of testing are used in selection

In the paper, the method of questionnaire, literature research method, and methods of comparative analysis and synthesis were utilized.

RESEARCH RESULTS

Regarding internal and external sources of recruitment, it was found that both Slovak and multinational companies prefer external sources of recruitment to internal ones. Internal sources of recruitment, which include for instance transfers or promotions, are more extensively used by multinationals (75%) than Slovak companies (25%).

The next question was designed to find whether job applicants are interviewed according to pre-established procedures. As indicated in Figure 1, multinational

companies operating in Slovakia conduct interviews containing pre-established questions (75%) according to pre-established procedures compared to 50% of Slovak companies.

Table 1: Conducting interviews according to pre-established procedures.

	Yes	No
Multinationals	75%	25%
Slovak companies	50%	50%

Source: Elaborated by authors

The third question was to identify how many rounds are there in an interview. Multiple rounds of job interviews are mostly utilized where there are too many job candidates or in case of a challenging or demanding job. The research findings show that 50% of multinational companies have two rounds of interview compared to 50% of Slovak companies that need one interview to decide if a candidate is the right person for the post (compare Table 2).

Table 2: Number of rounds of job interviews.

	1 round	2 rounds	3 rounds and more
Multinationals	25%	50%	25%
Slovak companies	50%	25%	25%

Source: Elaborated by authors

The fourth question was to find who the company personnel conducting job interviews are. The research findings indicate that a Human Resource professional is always a member of a team of interviewers in multinational companies (100%). 75% of Slovak companies have a Human Resource professional present in job interviews. The exact data are shown in Table 3.

Table 3: Company personnel conducting job interviews.

	Manager	HR professional	Psychologist	Current position holder
Multinationals	75%	100%	25%	25%
Slovak companies	100%	75%	----------	50%

Source: Elaborated by authors

The next question was to identify what written documents are required by multinational companies / Slovak companies from job applicants. The data obtained from multinational companies can be found in Table 4. It was found that 100% of

multinational companies require Curricula Vitae, certificates of education, and criminal record transcripts. Cover letters, personal questionnaires are required by 75% of multinationals, and references and driving licences are required by 50% of multinational companies operating in Slovakia.

Table 4: Written documents required from job applicants by multinational companies.

CV	Cover letter	Personal questionnaire	Certificates of educ.	Referen-ces	Criminal record transcript	Driving licence
100%	75%	75%	100%	50%	100%	50%

Source: Elaborated by authors

Similar data were obtained from Slovak companies. All four Slovak companies interviewed (100%) require from job applicants Curricula Vitae, certificates of education and criminal record transcripts, followed by cover letters, personal questionnaires, driving licences, medical certificates (50%) and references (25%).

Table 5: Written documents required from job applicants by Slovak companies.

CV	Cover letter	Personal questionnaire	Certificates of educ.	Referen-ces	Criminal record transcript	Driving licence	Medical cert.
100%	50%	50%	100%	25%	100%	50%	50%

Source: Elaborated by authors

The next question was to identify what selection techniques are used in multinational companies and Slovak companies. Table 6 lists the data obtained from multinational companies. Table 7 provides the data on selection techniques used by Slovak companies. It follows that interview represents the most common utilized selection technique for both multinational companies and Slovak companies (100%). The data contained in Curricula Vitae are the key data for all four multinational companies (100%) and 75% of Slovak companies. The third most widely used selection techniques are aptitude tests (75%) in multinational companies compared to two Slovak companies using them (50%). Compared to multinational companies, Slovak companies use less frequently assessment centre (25%) and background checks (25%).

Table 6: Selection techniques used by multinational companies.

Questionnaire	CV data	Aptitude tests	Assessment centre	Interview	Background check	Practical task
25%	100%	75%	50%	100%	50%	50%

Source: Elaborated by authors

SCIENTIFIC CONFERENCE INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2015

Table 7: Selection techniques used by multinational companies.

Questionnaire	CV data	Aptitude tests	Assessment centre	Interview	Background check	Practical task
50%	75%	50%	25%	100%	25%	50%

Source: Elaborated by authors

The following question was to specify what practical tasks are job applicants asked to perform as a part of the selection process. Job applicants are often asked to perform a practical task in order to check their abilities and skills they included in the Curricula Vitae. As evident from the research, multinational companies mostly assign job applicants to perform some IT task, demonstrate their foreign language command and problem-solving skills. On the other hand, 50% and 25 % of Slovak companies assign their job applicants tasks to demonstrate their IT skills and problem-solving skills respectively. All the findings are shown in Table 8.

Table 8: Practical tasks assigned to job applicants.

	IT skill	Customer communication	Problem-solving simulation	Telephone Comm.	Comm. in a foreign language
Multinationals	75%	50%	75%	25%	75%
Slovak companies	50%	25%	25%	25%	50%

Source: Elaborated by authors

Next, types of testing used by multinational companies and Slovak companies in selection were identified. It was found that the following types of testing were employed by multinational companies: group selection methods (50%), creativity tests (50%), personality and IQ tests (50%). Slovak companies employed the following types of testing: group selection methods (50%), and personality tests (50%). The findings are given in Table 9.

Table 9: Types of testing used in selection process.

	None	Group sel. methods	Aptitude/ Skill testing	Creativity tests	Personality tests	EQ tests	IQ tests
Multinationals	25%	50%	25%	50%	50%	25%	50%
Slovak companies	25%	50%	25%	25%	50%	0%	25%

Source: Elaborated by authors

CONCLUSION

Human Resource managers of today face a challenging problem which is to build and nurture a pool of good employees in the organization, which begins with recruitment and selection. Since the labour market disposes of an adequate supply of labor, special attention is paid to the selection of right employees for the right positions. The paper attempted to identify processes, through which multinational companies operating in Slovakia select new employees and compare them with those being most widely utilized by Slovak companies. The research data indicate that bot Slovak companies and multinationals prefer external sources of recruitment to internal sources. It was found that interview is regarded as an effective tool to hire the right people for both multinationals and Slovak companies. In multinational companies, interviews are conducted according to pre-established procedures. The research findings show that multinational companies have multiple rounds of job interviews, which are mostly utilized where there are too many job candidates or in case of a challenging or demanding job. There are also similarities in the selection techniques utilized; the data contained in Curricula Vitae are the key data for both multinational companies and Slovak companies. The least used techniques by Slovak companies are assessment centres and background checks. Differences were also found in practical tasks that are assigned to job applicants as a part of selection process. Multinational companies mostly assign job applicants to perform some IT task, demonstrate their foreign language command and problem-solving skills. On the other hand, Slovak companies mostly ask their job applicants to demonstrate their IT skills, and foreign language command. Thus, the research findings highlighted several similarities and differences in the selection process of multinational companies and Slovak companies. Selection procedures in any company should be effective as rehiring and retraining wrong people can be time-consuming and the cost can be extremely high.

REFERENCES

[1] Blašková, M. 1998. Manažment ľudských zdrojov. Žilina: Žilinská univerzita v Žiline, 1998.

[2] Drábiková, M. 2008. Základné nástroje a súčasné trendy personálneho manažmentu. 1. vydanie Bratislava: Metodicko-pedagogické centrum v Bratislave, 2008.

[3] Grenčíková, A., Vojtovič, S., Gullerová, M. 2013. Staff qualification and the quality of tourism-related services in the Nitra region. *Bulletin of Geography. Socio-economic Series*, no. 21, pp. 41–48.

[4] Joniaková, Z. – Kachaňáková, A. – Nachtmannová, O. 2008. Personálny manažment. Bratislava: Iura Edition, 2008.

[5] Koubek, J. 2009. Řízení lidských zdrojů. Praha: Management Press, 2009.

[6] Krajňáková, E., Vojtovič, S. (2014). Priorities in the Methods and Forms of Higher Education. In SGEM conference on psychology & psychiatry, sociology & healthcare education: Conference proceedings volume III, Education & educational research. Sofia: STEF92 Technology.

[7] Nagyová, Ľ. – Šajbidorová, M. – Višňovský, J. 1997. Manažment ľudských zdrojov. Nitra. Slovenská poľnohospodárska univerzita v Nitre, 1997.

[8] Szarková, M. 2009. Psychológia pre manažérov a podnikateľov. Bratislava: Sprint dva, 2009.

[9] Vojtovič, S. 2009. Ľudský potenciál ako facilitátor rozvoja regiónu. In Význam ľudského potenciálu v regionálnom rozvoji: Zborník z vedeckej konferencie. Podhájska: EEDA, pp. 318-327.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
S G E M 2 0 1 6

COMPREHENSIVE ASSESSMENT OF THE EFFECTIVENESS OF THE IMPLEMENTATION OF IMPORT SUBSTITUTION

Prof. Irina Ershova

Assistant Prof. Aleksei Ershov

Assistant Prof Inna Litvinova

Southwest State University, **Russia**

ABSTRACT The research is aimed at developing methods of evaluating the effectiveness of the state industrial policy measures of import substitution and testing with the materials at the regional level.

The Aim is to expand a methodology to assess the effectiveness of the state industrial policy measures of import substitution

The Tasks are: 1. to identify the system of partial factors of realization efficiency of import substitution;

2. to standardize private efficiency factors to identify usage patterns;

3. to use an integrated system of general indicators and calculate the integral index of the effectiveness of the implementation import substitution implementation.

Methodology. We have used the methods of economic-mathematical analysis and expert evaluation and the method of assessing the effectiveness of the production development has been worked out.

The Results. The efficiency of the implementation of import substitution has been presented based on the integral index calculating method.

Conclusions. Owing to this technique gives you the opportunity of analising:

1. the effectiveness of the state industrial policy implementation of import substitution in the regions of the country has been analysed, 2. the management facilities have been differentiated into leading and media and stagnating according to the integral indicator. 3. the state industrial policy measures for each of the groups have been selected

The study was performed under the grant of the President of the Russian Federation for state support of leading scientific schools number Scientific School-9726.2016.6 "The implementation of state economic policy through the development of tools for strategic and indicative planning".

Keywords: import substitution, state industrial policy, strategic management of import substitution

INTRODUCTION

Comprehensive assessment of the import substitution implementation effectiveness is characterized by the difference in the approaches to the methods of determining the level of development of industrial enterprises, which greatly complicates the selection task of methodology.

The integral effectiveness indicator of the industrial production development in the region should encompass the maximum number of companies, including the analysis of the financial, innovative, technology, investment, organizational and social enterprise components.

To get the integral index of the import substitution implementation effectiveness it is proposed to use a complex system of generalizing and partial figures.

The use of general indicators in the assessment gives an overview of the effectiveness of the use of the enterprise internal resources.

The analysis of partial factors provides more specific information.

Combining generalizing and partial indicators is legitimate because it expresses the essence of the enterprise management comprehensive assessment and shows the resources available to the business being interconnected, as well as how rapidly, efficiently and completely they are used [1].

Our proposed calculating method of the import substitution implementation effectiveness is shown in Figure 1.

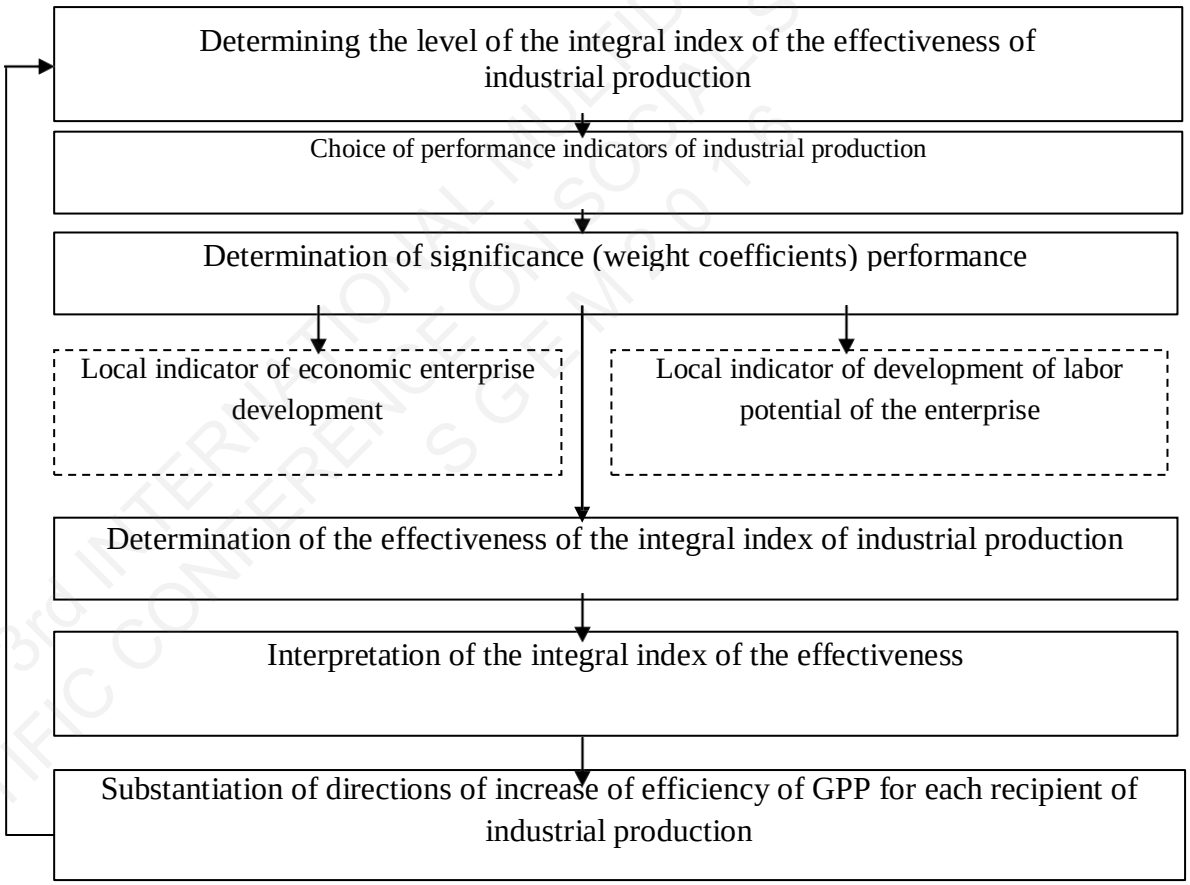


Figure 1 - The algorithm to calculate the integral efficiency index of the import substitution implementation.

It includes the following steps:

At first we have received the system of partial coefficients and calculated integral values for each group.

Then we have made a standardization of these values.

Since all the partial indicators are unidirectional, the standardized rate C_{ij} is calculated as follows:

$$C_{ij} = \frac{Cij}{C_{ij}^{\max \rightarrow}} \quad (1)$$

where $C_{ij}^{\max \rightarrow}$ is the maximum value of the i-th indicator among the Russian regions.

Next the Minkowski distance(measure) D_j based on standardized partial indicators C_{ij} has been calculated according to Formula 2:

$$D_j = \left[\sum_{i=1}^{n} \left| C_i - C_{ij} \right|^r \right] \quad (2)$$

where, $C_i = \max \left\{ C_{ij} \right\}^r$ and r is the power range parameter defined by the researcher.

It should be noted that the smaller D_j is ,the higher the integral indicator the industrial policy effectiveness of the j-th region will be. Consequently, the integral efficiency index (efficiency rating) R_j is the inverse number D_j .

$$R_j = \frac{1}{D_j} \quad (3)$$

The region top place in the rating $D_j(R_j)$ can be obtained due to the significant superiority of only one indicator, while other indicators can be incomparably far from it. This situation indicates the uneven effects of industrial policy in the region and in spite of having a favourable $D_j(R_j)$, we can talk about its insufficient effectiveness.

It is therefore necessary to evaluate the variation of standardized indicators to measure the uniformity of industrial policy effects [2].

The variation coefficient can be used to assess the impact.

Let the average value of standardized indicators for the j-th region $\overline{C}_j$ be calculated by Formula 4, and the standard deviation of standardized indicators for j-th region S_j be calculated by Formula 5.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
INTERNATIONAL MULTIDISCIPLINARY
SGEM 2016

$$\overline{C}_j = \frac{1}{n}\sum_{i=1}^{n} C_{ij}^{n} \quad (4)$$

$$S_j = \sqrt{\frac{(\sum_{i=1}^{n} [|(C)|]_{ij}^{n} - \overline{C}_j^{n})^2}{n}} \quad (5)$$

Then the variation coefficient for standardized j-th region Uj is calculated by the following formula:

$$U_j = \frac{S_j^{n}}{\overline{C}_j^{n}} \times 100\% \quad (6)$$

After calculating the measure U_j the first place in the rating is assigned to the region, if it has received its least value, the other regions being listed in order of its increasing.

Then the indicators $D_j(R_j)$ and U_j can be used not only as point estimates, but also as measures to isolate groups of regions with different industrial policy characteristics [3].

The approach to clustering the state industrial policy (SIP) recipients, depending on the EIIS received values has been suggested (tab. 1) which in its turn allows to divide the recipients into groups, and apply selective measures of the government industrial policy. [4].

Table 1 The Characteristic of the import substitution implementation effectiveness.

Intervals values integralnogopokazatelya Erim The Characteristic of the import substitution implementation	The Characteristic of the import substitution implementation effectiveness
0,1 – 0,4	stagnating - low efficiency
0,4 – 0,6	The median is the mean efficiency
0,6 – 1,0	Leading (propulsion) -high efficiency

In contrast to the existing methods to assess the production development effectiveness our technique has following advantages:

the possibility of taking into account all structural components to assess the efficiency of resource use in industrial plants;

the analysis of the strengths and weaknesses of the enterprise;

the integral efficiency index calculation for each plant;

the development of a set of support measures for a group of enterprises

Thus, on the basis of the applied methodical approach to select state industrial policy recipients it has been proposed to differentiate the control objects between the leading, median and stagnating by the integral indicatorof the import substitution implementation effectiveness and choose the state industrial policy measures for each group. [5]

The analysis of the effectiveness of the implementation of the state industrial policy of import substitution in the regions of the Central Federal District has been made based on the applied methodology.

Indicators of socio-economic activities of the Central Federal District regions in 2013-2014 are the information basis for the analysis:

- the investment in fixed capital per capita;

- the developed and used advanced production technologies;

- the foodstuffs and agricultural raw materials;

- the export and import of technology and technical services;

-the innovative activity of organizations;

-the investment in fixed assets;

-the gross fixed capital formation;

- the cost of fixed assets.

As a result, using Formula 1, the standardized system of partial indicators of import substitution industrial policy has been received.

As it can be seen from Table 1, the most efficient import substitution industrial policy according to the 2014 results was carried out in the Belgorod region, the second was the Yaroslavl region.

First of all, this is due to the high development of the region and appeal to investors. Next the Orel, Kaluga and Lipetsk regions were [6].

As justified above, the integrated performance indicator R_j is used to spot the characteristics of the available data.

To rate their structure in order to realize the industrial changes in the investigated regions the variation coefficient U_j can be used.

The calculation results of the variation coefficient U_j together with the intermediate indicators are presented in Table 2 (Appendix E).

Table 2 - Uniformity index of industrial policy action

Region	2013 year				2014 year			
	$\overline{C_j}$	S_j	Uj,%	Место	$\overline{C_j}$	S_j	Uj,%	Место

SCIENTIFIC CONFERENCE INTERNATIONAL MULTIDISCIPLINARY SCIENCE CONFERENCE ON SOCIAL SCIENCES AND ARTS 2016

								o
Belgorod	0,6504	0,2790	42,8930	6	0,5807	0,3453	59,4751	5
Briansk	0,5431	0,3006	55,3516	11	0,5065	0,3265	64,4704	7
Vladimir	0,5630	0,2544	45,1953	8	0,4567	0,2487	54,4623	1
Voronezh	0,5348	0,3058	57,1823	12	0,4835	0,3260	67,4207	8
Ivanovo	0,3837	0,1424	37,1126	3	0,3942	0,2837	71,9564	11
Kaluga	0,6846	0,3713	54,2320	9	0,6298	0,4506	71,5519	10
Kostroma	0,4056	0,2345	57,8054	13	0,3452	0,2773	80,3228	13
Kursk	0,3314	0,2507	75,6379	16	0,3000	0,2472	82,4098	15
Liptsk	0,8910	0,0857	9,6152	1	0,6306	0,3837	60,8507	6
Orel	0,3682	0,2146	58,2892	14	0,4146	0,3335	80,4336	14
Riazan	0,5500	0,1595	28,9973	2	0,5147	0,3013	58,5496	4
Smolensk	0,4443	0,1692	38,0774	4	0,4131	0,3250	78,6893	12
Tambov	0,4315	0,2529	58,6182	15	0,3774	0,3358	88,9818	16
Tver	0,5410	0,2966	54,8206	10	0,4925	0,3502	71,1015	9
Tula	0,5921	0,2655	44,8314	7	0,5001	0,2825	56,4917	2
Yaroslavl	0,5999	0,2408	40,1432	5	0,5940	0,3427	57,6969	3

On the basis of the standardized D_j partial indicators C_{ij} the Minkowski distance (measure) (where r = 2) has been calculated according to Formula 2.

Note that the smaller D_j is, the higher the integral indicator of the industrial policy effectiveness of the j-th region can be [7].

Consequently, the integral efficiency index (efficiency rating) R_j is retroactive D_j and is calculated according to Formula 3 (tab. 3).

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY SGEM 2016

Having obtained the effectiveness rating value of import substitution industrial policy, we have identified areas where the import substitution policy is most successfully carried out [8].

As the table shows the most evenly impact of import substitution industrial policy is in the Lipetsk region.

Table 3 -the Integral effectiveness indicator of the import substitution industrial policy

Region	2013		Place	2014		Place
	D_j	R_j		D_j	R_j	
Belgorod	1,2380	0,8078	1	6,2497	0,1600	1
Briansk	7,8382	0,1276	16	2,0996	0,4763	11
Vladimir	2,0817	0,4804	9	2,6549	0,3767	8
Voronezh	1,7770	0,5628	6	2,8024	0,3568	7
Ivanovo	1,6489	0,6065	3	1,8870	0,5299	14
Kaluga	4,3743	0,2286	13	4,1950	0,2384	4
Kostroma	1,6540	0,6046	4	2,0118	0,4971	13
Kursk	1,7879	0,5593	7	1,6715	0,5983	15
Liptsk	5,7258	0,1746	15	3,8255	0,2614	5
Orel	1,9215	0,5204	8	4,6611	0,2145	3
Riazan	1,7294	0,5782	5	2,3826	0,4197	9
Smolensk	2,1093	0,4741	10	2,3141	0,4321	10
Tambov	2,5995	0,3847	11	1,5473	0,6463	16
Tver	5,6453	0,1771	14	3,7666	0,2655	6
Tula	1,3519	0,7397	2	2,0126	0,4969	12
Yaroslavl	3,4257	0,2919	12	5,3729	0,1861	2

However, during the analyzed period the variation coefficient significantly increased in that region, indicating an increase in non-uniformity of the impact of policies.

The next in the rating is the Ryazan region (U> 29%).

In the last place in the rating of the uniformity of the impact of industrial policy are the Kursk, Tambov and Orel regions.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
INTERNATIONAL MULTIDISCIPLINARY
SGEM2016

CONCLUSION

Thus, one of the reasons is the low innovation activity in these regions and non comprehensive support to the enterprises.

The joint use of performance indicators and the uniformity impact of industrial policy have led to more accurate and deeper conclusions about the state of the region, the growth potential directions and the necessary efforts to be done for its improvement.

Our analysis of the Kursk region industry and the developed mechanism to evaluate the regional industrial policies implementation have allowed timely to identify the lagging indicators from the planned ones and undertake corrective measures.

ACKNOWLEDGEMENTS

The study was performed under the grant of the President of the Russian Federation for state support of leading scientific schools number Scientific School-9726.2016.6 "The implementation of state economic policy through the development of tools for strategic and indicative planning".

REFERENCES

[1] Vertakova, Y. Rational ratio of sectoral and territorial structure - the main indicator of sustainable development: monograph [Text] / Y. Vertakova, YS Polozhentseva, ES Simonenko // St. Petersburg: INFO YES, 2008. - S.74-79.

[2] Fetisov, the future of the Russian economy: the export of raw materials, diversification or high-tech? [Text] / G. Fetisov // Bulletin of the Institute of Economics, 2008. - № 1. - S. 121-127.

[3] Klinova, MV France and modernization of the Russian economy: a public-private investment partnership [Text] / MV Klinova // Modern Europe, 2012. - № 2. - S. 95-108

[4] Arolov, IE Opportunities and challenges of modernization of Russian high-tech complex [Text] / IE Frolov // Problems of Forecasting, 2011. - № 3. - pp 31-55

[5] Theoretical aspects of considering the dynamic characteristics of socioeconomic systems in the management of regional development // Vertakova Yu.V., Plotnikov V.A. // Regional Research of Russia. 2013. T. 3. № 1. pp 89-95.

[6] Vertakova Yu.V., Ershova I.G., Plotnikov V.A. Educational System Influence on Knowledge Economy Formation // World Applied Sciences Journal 27 (5): 679-683, 2013.

[7] Pappe, J. Š private and public sectors in the Russian big business: the dynamics of the relations in the "long 2000s" [Text] / YA.SH. Pappe, NS Antonenko // Problems of Forecasting, 2014. - № 1. pp 21-33.

[8] Peculiarities of assets composition in russian joint stock companies // Grechenyuk A.V., Vertakova Yu.V., Grechenyuk O.N. // Procedia Economics and Finance. 2015. № 24. S. 256-265.

CONCEPTUAL BASICS OF PUBLIC-PRIVATE PARTNERSHIP MANAGEMENT

Prof. Irina Ershova
Assistant Prof. Aleksandra Deviatilova
Assistant Prof. Irina Kozeva

Southwest State University, **Russia**

ABSTRACT The study is aimed at identifying the economic conditions of public-private partnership in education. The aim is to form the conception of PPP in the educational cluster of innovative economy.
Objectives. To identify the economic conditions for the development of public-private partnership; to define the concept of "public-private partnership" based on the analysis of Russian and international research in the field of partnership between the state and private business and also to show the conditions for the development of public-private partnership; to classify the patterns and principles of PPP entities that stimulate the economic growth of the country.
Methodology. In this study the conception of formation and implementation of PPP mechanism is developed with help of common methods of scientific knowledge, comparative and retrospective analysis.
Results. It is determined there is a formation of the system of public-private partnership to create the quality of highly qualified specialists. It is emphasized that one of the important directions of PPP is the state support of scientific and educational activities.
Conclusions. These results allow us allow us to offer effective tools for implementing public-private policy. The basic principles of the PPP entities in the management of education are defined. The factors that contribute to the implementation of public-private partnership policy are revealed.
The study was performed under the grant of the President of the Russian Federation for state support of leading scientific schools number Scientific School-9726.2016.6 "The implementation of state economic policy through the development of tools for strategic and indicative planning".
Keywords: public-private partnership, strategic management, management of the educational sphere.

INTRODUCTION

People, who wish to ensure the competitiveness of products of the enterprises in the conditions of globalization of the economy and take their rightful place in the international division of labor, should strive to increase the number of highly qualified specialists. The aim of the introduction of public-private partnership in the sphere of vocational training is to increase the technological and intellectual potential of higher education and science as a condition for stable economic growth and modernization of the economy.

The authors use the concept of classical economics , such as Van den Berg , E. Brown, B. Van Winden , G. Vilumsen , P. Gertog , B. Dalum , M. Delgado , C. Pedersen , M. Porter , S. Rosenfeld , T. Roelant , J. Cenis , J. Simmy , E. Feser , S. Stern , M. Enright and others to investigate the nature , types and patterns of development of clusters.

Some modern Russian scientists such as M.N. Afanasiev, V.P. Bocharov, Y. Vertakova, S.Y. Glazyev, G.V. Gorlanova, G.A. Drobot, S.S. Evtyuhova, A.Y. Zudina, A.D. Nekipelova, I.M. Osadchaya, V.A. Plotnikov, B.G. Preobragensky, I.E. Risin, D.A. Rozenkova, E.V. Sibirskaya, Y.I. Treshchevskiy, Ya.Sh. Pappe, S.P. Peregudova, F.I. Shamkhalova, U. Shishkov, Yasin and others devote their works to the study of the various aspects of cooperation between the state and businesses.

Economic and organizational capacity and features of public-private partnership are discussed in the works of O.S. Belokrylova, V.G. Varnavsky, L.I. Efimova, O.A. Lomovtseva, V.A. Mikheev, T.N. Sannikova, B. Stolyarov and A. Shmarov. Important political and legal aspects of public-private partnership in Russia have found the illumination in the works of M.V. Vilisov, S.S. Sulakshin, E.A. Khrustalyova, V.I. Yakunin.

Despite the growing interest of scientists to the named domain, many of the fundamental issues are while only marked, but not solved, including those who are related to the formation of the system of ideas about nature, functional and procedural content of public-private partnership, the principles and the mechanism of its organization, development prospects.

Results and Discussion

Problems of formation and study approaches to development and management of public-private partnership in the scientific literature have been illustrated rather recently on the example of countries with developed market economy.

Current developments in this area of research are concentrated in the analysis of certain aspects of the mechanism of interaction between government and business, but the processes of formation and regulation of public-private partnership in the field of education are provided insufficiently methodically.

However, it is impossible to reach a new level to solve this problem without the study and the methodological issues of sustainable growth and development of the PPP system (allowing to give a comprehensive assessment of its condition, its dynamics of development, the effectiveness of the mechanism to substantiate and implement scientifically valid methods for its regulation on the basis of the results).

We conducted an analysis of Russian and foreign research in the field of partnership between the state and private business. It is found on the basis of the analysis that the following main approaches to the definition of "public-private partnership" are formed at the moment:

1) institutional approach considers the public- private partnership as the state and business alliance, allowing the partners to coordinate interests. This position is shared by Russian scientists Y. Vertakova, V.A. Plotnikov [1]

2) project approach considers public-private partnerships as a separate project (I.E. Risin , I.E. Treshchevsky)[2]

3) resource approach limits the interpretation of the public-private partnership as a tool to attract private investment (O.N. Grechenyuk , Y.S. Polozhentseva) [3].

In the aspect of the conduct research unlike the existing approaches, a public-private partnership is an inter-institutional organizational and economic mechanism of

innovative cooperation between the state and the private sector, based on the principles of project financing, which allows to realize the potential of the participants, to share the benefits and risks between the parties in order to implement social significant projects and meet social needs.

Public-private partnership is on the border between the state and business according to the approach connected with public policy and management. Public-private partnership is neither an institution of privatization or nationalization of the institution; it is only a form of optimizing the execution of state duties towards the community, i.e., uninterrupted provision of public goods to the population.

As international experience shows, the various forms of state and private capital partnerships have been developed during the financial crisis. The share of public financing in the Nordic countries is 30-40 %, in the US and Canada about 30 %, France - 29 %,the UK - 28 %, in Sweden - 25 %,Portugal - 19%, Greece - 10%, Spain - 8 %, Italy - 5 %, the Netherlands - 3%, Ireland and Germany - 1%. It should also be noted that in these countries a strict state control is implemented over the use of public funds in the framework of public-private partnership.

The Institute of PPP allows to overcome the limitations of objective and subjective nature which affect the rate and quality of economic and social development. PPP creates prerequisites for reducing ongoing costs and accelerate the implementation of projects, creates additional incentives and catalysts of economic activity. The world practice shows that the combination of initiatives by federal and local authorities and the efforts of the private sector makes a decisive contribution to the formation of effective areas of the territorial concentration of innovation potential, considered as competitiveness poles.

Matrixes of interrelations illustrating the condition and dynamics of the most common forms of cooperation can serve as a basic tool for studying the PPP laws. A schematic example of such an approach to the subjects of PPP educational sphere - science, education and industry - is shown in Fig . 1.

PPP in education was a large-scale organizational and institutional and social innovation, the herald of the synthesis of competition and cooperation in the formation of post-industrial economy, the coordination of interests of various social forces. Innovations in the field of PPP, such as the creation of a national network of industrial innovation in the United States [ ], clustering technology platforms in Europe [ ] reflect the changes in the technological base of the economy and the transformation of interaction between the state and society.

It should be emphasized that the intensification of the PPP was a response to a significant increase in the degree of internationalization and globalization of economic development, which called for the transformation of the traditional practice of regulation of international economic relations.

The essence of PPP is determined by the following international documents:

- recommendation of the UN Economic Commission for Europe " Guidelines on Private Public Partnerships for Infrastructure Development"[4], developed by the forum on PPP for infrastructure development;

- recommendations of the EU, the main ones are Guidelines for Successful Public-Private Partnerships[5] and the Green Paper on Public-Private Partnerships and Community Law on Public Contracts and Concessions [6];

- Report "Legal Impediments to Non-Sovereign Financing of Infrastructure in Russia" [7].

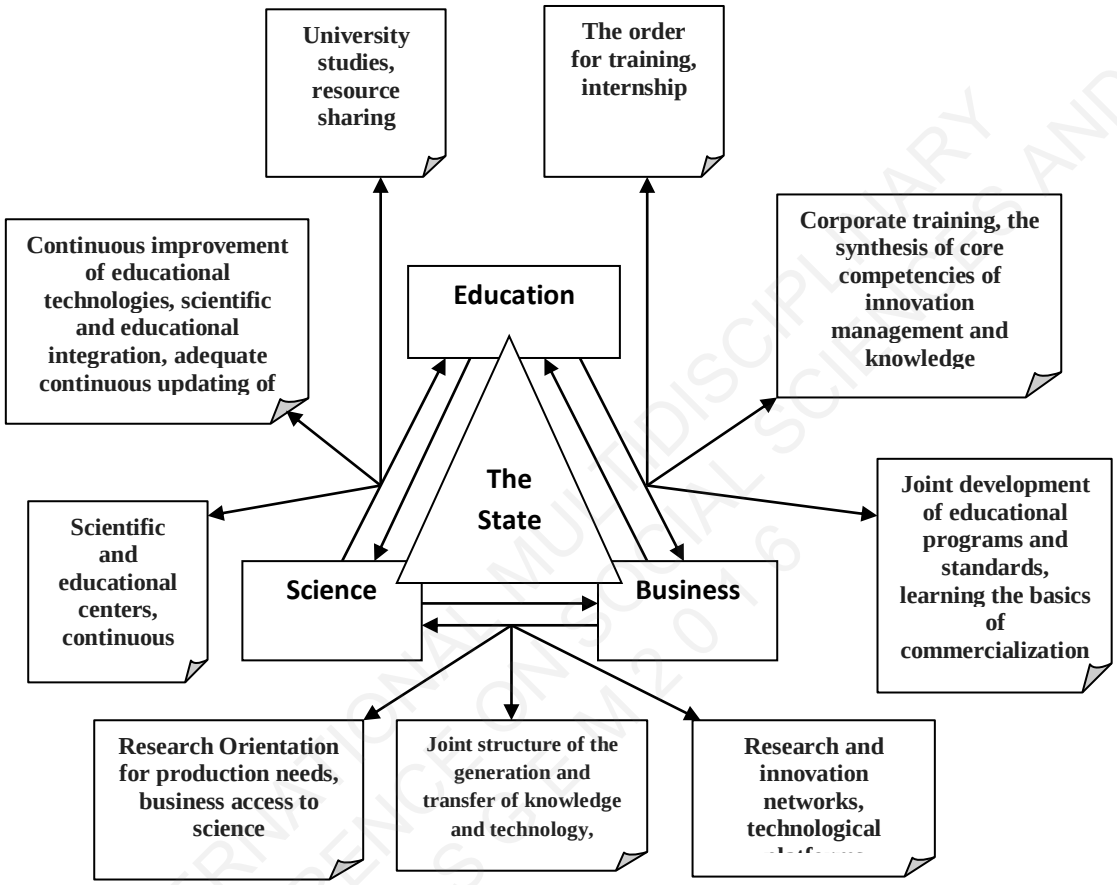


Fig. 1 PPP subjects in the educational cluster

Thus, the idea of PPP is currently the center of attention of both international and domestic scientific - expert and business - community. However, unfortunately, there is still no generally accepted definition of this phenomenon. The absence of the Russian federal and regional legislation in this area aggravates the situation. Currently, PPP laws have been adopted in only a few regions of Russia that are declarative and do not provide many tools really interesting to private investors.

It can be concluded that there is no clear division of forms of ownership for infrastructure facilities, there is no common approach to the definition of " infrastructure", there are no any legal documents of all levels of government regulating these issues and, as a result, there is no single (federal) law forming the list of infrastructure projects and forms of ownership to them at the state and municipal levels.

The foregoing indicates the need for the scientific development of conceptual and methodological approaches to the formation, development and increase of efficiency of interaction between the state and business in the education system with the ability to

predict the tendencies of its development on the basis of current scientific knowledge, which confirms the relevance and feasibility of research in this area.

In the scientific literature the term "concept" (lat. conceptio – understanding, system) is a certain way of understanding (interpretation , perception) of any object, phenomenon or process; the main point of view on the subject, the guiding idea for his systematic lighting , complex belief system, interconnected and derived from one another, the system solutions to selected problem [8].

Conceptual basics for the formation and implementation of public-private partnerships in the education system are offered according to the theoretical concepts of the term "concept" and the research aims. They include a system of views, principles and algorithm of the organization and implementation of joint programs aimed at the complex interaction of partners and the mechanism of state regulation and their implementation based on scientifically founded and proven in practice methods and methodological approaches.

Offered in the study the concept of public-private partnership in the education system is based on the founded theories in the first half of XX century J.M. Keynes [9] and L. von Bertalanffy [10].

1. The theory of open systems of L. von Bertalanffy (is of great importance for the management of socio - economic systems). According to this theory, the education system is proposed as an open, consisting of interrelated parts, the subjects of which aim to achieve divergent goals in a changing external environment. The analysis of the theory and practice of development of education system has shown that interests of a large number of participants in the system are intertwined, namely:

• consumers are interested in improving education at minimal cost;

• scientific and educational structures are aimed at extracting the maximum profit ;

• the state is interested in the stable functioning of the mechanism of educational services by means of which will be decided an important social and economic problem of providing the population with qualitative knowledge .

The contradictory nature and the clash of interests of the educational market in the long term can lead to destabilization of the situation in the education system, which determines the need to develop conceptual approaches to its regulation, and the state is offered as the subject of regulation.

2. The theory of effective demand of J. M. Keynes. Dynamics of production of national income and employment are not determined directly supply factors (the size of the labor employed, capital productivity) but demand factors, ensuring the implementation of these resources. In our opinion, the development of PPPs by the state in education will increase aggregate demand, but due to the multiplier effect to stimulate the complex industrial sectors, coupled with the creation of new jobs, forming the demand of the population and an increase in tax revenues. In addition, this mechanism will help to overcome social instability by increasing employment and to solve meet needs of the population in educational services, which in turn will increase the quality of education and quality of life.

On the basis of generally accepted requirements to develop a methodology for solving hard-structed problems developed by foreign economists R. Lucas [11] J. Tinbergen [12] R. Frisch, [13] in the mid XX century, the fundamental task to develop the concept of public-private partnerships in the education system are:

1) formulation of objectives and tasks of study of its formation;

2) systematization of external and internal factors and conditions of stakeholders which influence the formation of an effective mechanism for PPPs in education;

3) justification of the methodological principles of state-private partnership in the education system which allow to form the elements of the mechanism of interaction between participants on the basis of a common approach;

4) determination of the basic directions of realization of the mechanism of public-private partnership aimed at the development of the education market and the labor market;

5) the establishment and regulation of the functions of the regulated community , ensuring the implementation of the mechanism of state regulation of scientific and educational system ;

6) the development of forms and methods of interaction of subjects of the market of educational services that allow to implement an integrated approach to the formulation and implementation of partnership mechanisms at various levels.

It is necessary to position the partnership as a direction to the optimal solution of pressing socio - economic problems of the majority of modern states, taking into account the irreversibility and inherence of the PPP as the effect of the transformation of the modern economy. Internet space is a growing system of global cooperation for the promotion of multidisciplinary projects funded by both public and private organizations, having an audience of over one billion people. We can say that the experience of foreign countries on issues in PPP area is diversified and a program of the future development of public-private partnerships in the world of the Internet "The Future Internet Public-Private Partnership Programme (FI-PPP)" has been developed in the European Union.

It is anticipated that the PPP strategy will develop the European market to the level of "smart" infrastructure, as well as improve the performance of transactions in the area of its operation using the total acceleration of the development and introduction of a new type of Internet technologies.

The technological base of the analyzed system has been intensively developed under the auspices of the production unit «FI-WARE» - a large-scale European integration project. Element operates on the basis of "the FI-PPP 'online platform kernel, which is the original service infrastructure formed by the components of reusable and wide-profile application called "universal adapter ". These tools will allow the maximum to facilitate the implementation of the future internet applications and social-economic orientation.

"Innovative search system « XiPi» was awarded the special attention and was adapted to the requirements and conditions of the scientists' work.

In 2011-2013 according to plan of «INFINITY» a set of experimentally organized mechanisms that are able to benefit the advantage in process of scientific -research procedures and, thus, to foster the acceleration of new products and solutions.

Beginning of formation of the Russian experience of public-private interaction in the online space dates back to 2012 (the idea of organizing institutions that produces search, selection and financial support to promising social -oriented web projects). The offer received a response in the form of the creation of the fund "Young Professionals" by the Agency for Strategic Initiatives (ASI).

The Fund aims to direct investment flows of the private sector in the sphere of public social services in addition to solving the problem of employment of young specialists in the field of information technology, which essentially means to mainstream the implementation of the Russian public-private partnership in the global information and communication environment. Until the first half of 2013 state formations carried out their activities independently in relation to the construction of information polystructural social service systems independently, and justify the high costs of their economic unreasonableness.

Although the comparability of rates of development of the Russian and international programs for the organization of public-private interaction in the Internet and the relative maturity of the latest ones, the mechanism of the domestic fund despite its stable functioning is not still approved because of the developers want to carry out complex public discussions in open design mode to create based on their results unique structure of the main modules.

Plan of the software project financing looks classic. Thus, the provision of public funds is based on the condition that the presented originally internet-project to support has been already funded from other sources. Of course, the best option was always such a situation where the greatest part belongs to the private investor. This is contrary to the modern program to stimulate public-private cooperation.

CONCLUSIONS

Thus, the offered conceptual basis of interaction between state and private sector in the implementation of PPPs in education will help to coordinate the interaction of subjects and to optimize organizational and economic management of the education system. The introduction of the offered mechanism of state-private partnership in the sphere of education will allow the state to distribute efficiently and to use the limited financial resources and will contribute to the effectiveness of budget spending.

Public-private partnership, according to the authors, is a mutually beneficial strategic medium and long-term cooperation of public and private sectors of the economy in respect of objects of state and municipal property, which is a mechanism for the implementation of the investment project (of any level and scale) on an equal footing in order to meet public and other socially useful tasks and functions to achieve the common good. The central problem of PPP projects is the problem of delimitation of the risks and the scope of the financial responsibility of the state and private business.

ACKNOWLEDGEMENTS

The study was performed under the grant of the President of the Russian Federation for state support of leading scientific schools number Scientific School-9726.2016.6 "The

implementation of state economic policy through the development of tools for strategic and indicative planning".

REFERENCES

[1] Vertakova Yu.V. Plotnikov V.A. Public-Private Partnerships and the Specifics of Their Implementation in Vocational Education // Procedia Economics and Finance. №16, 2014. (21st International Economic Conference 2014, IECS 2014, 16-17 May 2014, Sibiu, Romania) pp. 24-33.

[3] Grechenyuk A., Grechenyuk O. The structure of assets and capital of the russian companies and their impact on the liquidity and financial stability // Economic journal - XXI. 2016. T. 157. № 3-4. C. 88-90.

[2] Risin I.E. Public-private partnership - effective forms of interaction of public authorities and business / Voronezh Institute of Economics and Social Management. Voronezh, 2016.

[4] Guidelines on Private Public Partnerships for Infrastructure Development // UN, Economic Commission for Europe. Dec. 2000

[5] Guidelines for Successful Public-Private Partnerships // European Commission Directorate-General Regional Policy. March 2003

[6] Green Paper on Public-Private Partnerships and Community Law on Public Contracts and Concessions. Commission of the European Communities. Brussels, 30.04.2004.

[7] Legal Impediments to Non-Sovereign Financing of Infrastructure in Russia. Report. Valid as at November 2005. Prepared for the European Bank for Reconstruction and Development

[8] Vertakova Yu.V. Ershova I.G. Plotnikov V.A. Educational System Influence on Knowledge Economy Formation // World Applied Sciences Journal. № 27(5), 2013. pp. 679-683

[9] J. Keynes. General Theory of Employment, Percent and Money. Favorites. M: Exmo. 2008. p. 960

[10] L. von Bertalanffy . History and Status of General Systems Theory. M.: Nauka. 1973. p. 267

[11] R. Lucas. Studies on the theory of the business cycle. MIT Press, 1981. p. 487

[12] J. Tinbergen. Economic policy: principles and objectives . M., 1956. p. 345

[13] R. Frisch. Econometrics in the modern world. M., 1970. p. 269

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

CONCESSION PRACTICES OF PUBLIC ENTERPRISES IN KOSOVO

MSc. Milaim Berisha, PhD. Candidate

Tax Administration of Kosovo, **Kosovo**
College of International Management „Globus", **Kosovo**

ABSTRACT

Public Enterprises in the Republic of Kosovo for the purpose for which they were formed, at certain periods have faced different problems in terms of business, investments, management, etc. as well as the primary purpose for which were established- for service to the citizens (public wide). In order to serve to the broad public (citizens) in much qualitative manner, it was necessary that some enterprises start doing significant investments (in industry, infrastructure etc.). Considerable capital is required in order that such investments to be carried out by those public enterprises. After noting the deficiency in capital, experience, and technology, governments decided that a part of public enterprises is given to Public Private Partnership. In this way it becomes possible that the ownership of a public enterprise becomes mixed (depending on the percentage of shares).
Mixed enterprises, which are entities owned jointly by public and private sector tend to be spread throughout the Western world, and is increasingly proved that they are successful in their activity.
Key words: public enterprises, public-private partnerships.

1. CONCESSION PRACTICES OF PUBLIC ENTERPRISES IN KOSOVO (Case analysis of Pristina Airport)

Mixed enterprises, which are entities owned jointly by public and private sector tend to be spread throughout the western world. The value of this phenomenon has not been studied enough in economic life. In order to discuss about the concession of Public Enterprises it is appropriate that first to clarify what are public enterprises. Enterprises can be interpreted simply as a legal entities which aim to carry out certain activities and to achieve the profit. This is a simple interpretation of the meaning of enterprises. But the main purpose for which the public enterprises were established (state-owned) was not only the profit achieved but also the services to the public (the general public).

Number of enterprises owned by the state or as they were prevously referred to as the public enterprises (PE), was increased significantly during early 30's of the last century, but especially after the Second World War as in developed countries, also in countries on development. The aim was manifold, such as:

a) Overcoming problems stemming from deficits and shortages in the capital market.

b) Promoting economic growth.
c) Reduction of unemployment and
d) Provision of control over the overall management of the economy at the national level

After noting that the capital and technology in strategic areas private sector did not enter or lacked the capital needed to invest (such as heavy industry or infrastructure) most governments were hoping that by means of public enterprises (PE) to increase the formation of capital,to produce the necessary goods at low cost, increase the number of jobs and contribute significantly to the development of the country [1]. This trend continued until the early 80s of the last century. But a number of negative phenomena, as the increase of corruption, inefficiency in management, staff Overflow in enterprises, inflation and increasement of budget deficit, made that the 80s were exposed to the massive failures of governments and limiting the role of previously defined for public enterprises as key stakeholders in economic development[2].

Despite all of these and the reduction made to the number and to the weight of the Public Enterprises through the privatization process, still Public Enterprises continue to have a significant presence in many countries, by being the biggest providers of a range of social services and generating a significant number of jobs[3].

Noting that public enterprises are facing difficulties of the aforementioned nature there was a need for a "new public management" or "new concept of governance". These ideas articulate the belief that public organizations or systems that underlie according to public systems lack the capacity to face challenges and to exploit the opportunities offered on XXI century. So re-conception or notion of "New Public Management" is considered as a new treatment of an old case: how to improve performance and accountability of governance[4]?

The best way to mitigate the potential difficulties associated with the privatization of PEs is the preparation of an adequate legal framework and commitment of governmental institutions for its implementation. Naturally, for the implementation of any large scale project, full accountability and transparency are essential prerequisites for achieving any success[5].

The Republic of Kosovo has had some experience with privatization, especially in connection with the privatization of socially owned enterprises (SOEs). Without going into too much detail, the privatization of SOEs was managed by UNMIK (who prepared the necessary legal framework) and was implemented by the Kosovo Trust Agency (KTA) and later by Kosovo Privatisation Agency (KPA) [5]. There are two ways to transform a PE into a privately owned. The first: one PE can go through the traditional process of privatization, or rather say that by selling the shares of PE to a private entity. However, on the other hand, an PE can pass into private ownership through a public-private partnership (PPP) and/or with the concession to build, use and/or utilize public property infrastructure, and to provide public services[5].

Public-private partnership is another way to have a privatized public enterprises for a certain period of time which means by giving them in concession. Procedures and other issues of public-private partnership are regulated by the Law on Public-Private Partnership ("PPP Law"). The purpose of the PPP Law is to set the legal framework for the award of public-private partnerships and concessions to build, use and/or exploit

publicly owned infrastructure and to provide public services. In particular, the Law on PPP "regulates the rights to utilize and/or exploit publicly owned infrastructure and/or provide public services in all economic and social sectors.

As provided by Article 2, the PPP law applies to a wide range of areas including, but not limited to, transport, energy, heat, water, telecommunications, education, health, and many other fields [6].

The process for implementation of a PPP or granting a POE for concession to a private party is strictly defined that it should be under the authority of the government. According to Article 6.1 of the Law on PPP, PPP and concessions "will be given by a public authority which, according to the law, is directly responsible for the economic activity, which is subject to agreement." However, with the prior approval from the Government to public-private partnerships, inter-ministerial Steering Committee on public private Partnership (PPP-MSC) has the authority "to act as a Contracting Authority and grant concession and other rights to build PPP, use and/or exploit a public infrastructure facilities [6].

2. THE PURPOSE OF GRANTING FOR CONCESSION (PPP) PRISTINA AIRPORT

Government with the purpose of meeting the economic and operating potentials, and based on recommendations from the feasibility studies of investment levels, has decided to issue for concession the Prishtina International Airport, as it represents much higher economic benefit to Kosovo and in this way it will provide modern infrastructure and high quality services. In the last meeting of the Inter-Ministerial Steering Committee are reviewed and approved the request for proposals together with the Draft Agreement, which were sent to three pre-qualified companies on 29.12.2009. Bidders that are qualified and who are invited to participate in a competitive tender for the right to enter into Public – Private Partnership for the operation and expansion of Pristina International Airport, are [7]:

1) Fraport IC ICTAS Havalimani Isletme A.S
2) Bouyges Batiment International, Egis Project, Segap, Eurokoha
3) Limak/Aeroport de Lyon Consortium

The next step of this process is to organize a conference for investors, which was scheduled to be held in the last week of January 2010, where they will invite 3 qualified companies in order to clarify and discuss the questions they may have regarding to request for proposals. According to the schedule defined by the ISC, the final deadline for submission of bids was the last week of the month of March 2010, and award would be published the latest in early April.

3. TRANSACTION STRUCTURE

Public Private Partnership in PIA is expected to be a 20-year agreement form of Design - Construction - Finance - Operate - Transfer, and will include construction of a new terminal, three times larger than the existing one, 25,000 square meters. The new terminal will be monumental symbol of the future of Kosovo and will make proud

citizens of Kosovo. Other required investments include the construction of a new tower of air traffic and the associated equipment, new aircraft parking apron that would provide another additional 9 positions, water treatment plant, etc. The Private Partner will be offering to each worker of PIA an employment contract for at least another three next more years, with wages and benefits that they currently have [7].
On 1 June 2010, the Kosovo Government announce as the winner consortium of the Turkish company "Limak" and French company "Aeroport de Lyon". Turkish conglomerate "LIMAK" that owns 90% shares of the winning consortium of the ANP, which was known for involvement in construction, energy and cement. Meanwhile the remaining 10%, was in possession of the French company "Aeroport de Lyon" that brought with them the experience - proportionate to ownership - in the field of airport [8].

4. IMPLEMENTATION OF CONTRACT

In the PPP agreement, implementation of the contract and investment supervision is foreseen by two mechanisms:

- Article 10.13 of the contract provides the establishment of the Project Management Unit (PMU) as an established unit by the provider; through which the recruitment of the professional staff that will supervise the implementation of the contract and will continuously inspect the concessionaire's operations is foreseen.
- The "independent engineer" will be responsible for inspecting, monitoring and evaluating the investment costs in the investments undertaken by the private partner.

Both mechanisms are important especially because of the investment levels which are foreseen to be done during the 20 years of concession- with particular emphasis in the first years of functioning, the concessionaire- as well as to supervise the eventual operations which affect the strategic interests and orientations of Kosovo [8].

USW has not been established and it has never functioned as envisaged in the contract. Instead, contract supervision and implementation was carried out by the existing officials of the PPP Unit. In the race for "independent engineer" for the period April 2011 - January 2014, have competed four international companies, among which "Scott Wilson", "Ae-Com", "Hill International" and "Ine-co". The contract winner was selected the Spanish company "INECO" [8].

Related to the scope of the contract implementation, according to the audit that was made by the Office of the Auditor General 2014 Contract/Agreement PPP PIA AJ it was concluded that: The new terminal started operation on time, in accordance with the PPP agreement and has been certified by the Civil Authority Aviation of Kosovo. Some shortcomings are presented in the report, which if not eliminated can bring serious problems in the implementation of PPP in the next Agreement. For these issues were given 8 key recommendations to Committee for PPP [9].

However PPPC with the new composition (established in 2015) and Central PPP Department have made some actions towards addressing the issues arising from the report in 2014.

From 8 (eight) main recommendations, four (4) recommendations have been addressed, three (3) were partially addressed and 1 (one) recommendation is not addressed [10].

Recommendations addressed:

1) First recommendation for directives, regulations and minutes of meeting was addressed. PPPC produced and signed new rules of procedure.
2) Second recommendation. The PPC Committee has decided to establish the Permanent Project Management Unit (PPMU) consisting of five officials, civil servants.
3) Third recommendation. This recommendation has been addressed through the Decision on the establishment of the Permanent Unit for PPP. The decision sets forth for the Unit to report to CA/Committee for the PPP on quarterly basis. This rule may be incorporated in the PPP regulations/directives.
4) Fifth recommendation. Since the terminal facilities were not equipped with construction license in timely manner, MESP has taken actions in 2014 to legalise terminal/PIA-AJ facility, and it is treated as a pilot project for legalisation of unauthorized constructions.

Recommendations partially addressed

1) Fourth recommendation. All official documents and agreements are available in the official languages of the country. This recommendation is in process of being addressed. This recommendation has not been implemented in terms of PPP Agreement for PIA-AJ, because the basic PPP Agreement for PIA-AJ foresees that communications should take place in English. In this way, correspondence, annexes and issues related to the PPP Agreement for PIA-AJ are carried out in English.
   Contracts/agreements for new projects which are under implementation through PPP form are drafted in the official languages of the country.
2) Seventh recommendation. New Terminal should be accepted in accordance with the PPP Agreement with the expected level of safety and capacities. This recommendation is not yet fully implemented. Addressing of the recommendation it became even more unclear after the request from the chairperson of the former PPPC that signed the works acceptance certificates not become effective until the legal requirements are met and completion of outstanding works. Outstanding works related to item 4, Annex 13 of the PPP Agreement, which include: works in the Runway End Safety Areas (RESA), shoulders for aircraft accommodation, platform-icing and improvised fire-fighters training area.
3) Eight recommendation - . Supervision of outstanding works.This relates to the previous recommendation (number 7), PPPC actions have resulted in signing an annex agreement for outstanding works. Although this Annex agreement did not clarify how the works will be carried out, who will supervise them and there is no schedule for carrying out the outstanding works.

Recommendations not adressed

1) Sixth recommendation. Immediate actions should be undertaken regarding the property dispute with KFOR and clarify the dispute and close the unresolved issues on expropriation of private properties in order to have construction of entrance road of PIA-AJ finished. The government failed to fully fulfill its

commitment regarding the property given for use to PP to construct the new terminal. Still no action for understanding or agreement on the presence of KFOR in PIA AJ property is in place. Works planned in that area have not yet been completed.

5. CONCLUSIONS

From the current practice of concessions of public enterprises (the case of the airport) it can be concluded that the Government of the Republic of Kosovo has to show a good example of project management for the Public Private Partnership. This is due to the fact because in Kosovo there are still public enterprises (PTK) which must be given in concession and in this case (the case of the airport) should serve as an example that the government not only supports giving the PPP PE but at the same time respects the agreements precisely. In this way, it can also encourage foreign investors to invest in this form (PPP) and in other cases such as PTK, Brezovica etc.

6. LITERATURE

[1] Corporate governance lectures chapter.9 page 260-265 February 2008
[2] Public sector efficiency A.Afonso Tran6slated by V.Tanzi January 2008
[3] The size and performance of public sector activities in Europe April 2002 H.Heinz,R.Philip
[4] Public Administration, An Action Orientation, Robert B. Denhardt, Janet V. Denhardt, UFO Press, 2010, Tirane
[5] Riinvest, Dilemmas and Backwards in a fast track -Privatization of POEs in Kosovo,Prishtine, October 2009.
[6] Law Nr o4/L-045 for Public Private Partnership but also cited at Riinvest
[7] www.pppkosova.org
[8] Riinvest Institute, Prishtina Airport Concession, Prishtine, 2015.
[9] Office Of The Auditor General, Nr doc.23.6.11-2013/14-08, implementation of recommendations on public-private partnership agreement for PIA Adem Jashari", Prishtine, March/2016.
[10] Office of the Auditor General, Nr doc.23.6.11-2013/14-08, implementation of recommendations on public-private partnership agreement for PIA Adem Jashari", Prishtine, March/2016.

CONDITIONS FOR DEVELOPING AND PROMOTING AGROTOURISM IN ROMANIA

Assoc. Prof. Dr. Iasmina Iosim

Assoc. Prof. Dr. Gabriela Popescu

Banat's University of Agricultural Sciences and Veterinary Medicine, Faculty of Agricultural Management, **Romania**

ABSTRACT

Starting from the general premises of the very beginning and development of rural tourism and agrotourism and trying an evaluation of these, in the conditions of our country, it can be said that these premises do exist in different proportions and that in our country in a relatively short period, these forms of tourism in the rural area can develop significantly.

In order to develop rural tourism it is necessary to fulfill a series of conditions regarding population, especially urban population, leisure time, incomes, rigid classic tourism, and others. Because agrotourism should pursue its development process, there are needed activities like advertising and promotional activities that aim at informing potential tourists and creating tourism demand.

Keywords: development, agrotourism, advertising, promoting, conditions

INTRODUCTION

The economical crisis, and the transition period from before the crises as well, have left their footprint on the classical tourism accentuating even more its relative inelasticity. Due to the inflation and also to the self-financing needs of tourism, the prices and fares employed became prohibitive for the potential tourists with the services not having improved and modernised proportionally [5],[6].

For the agro-tourism to follow its expansive process, there are needed promotional and advertising activities, which have as a purpose the information of the potential tourists, respectively the formation and information of the touristic demand [4]. Throughout these information activities regarding the touristic offer of the rural operations and communes is provided, but also regarding other events which may have an influence on the touristic flux in the area [2].

MATERIAL AND METHOD

The development of the agro-tourism is influenced by a series of conditions, which need to be met, conditions having a constructive character leading to the rise in the agro-touristic demand. The inflation has led to the drastic decrease in the real income of the population and its buying power which has consequently led to a retreat in the internal touristic demand, while above the external touristic demand act as a break in economical, social and political factors [1],[3]. At present time in our country the services offered stand out by an increase in quality, although they have not yet fully met

the European standards - in the touristic industry as well as in the rural areas. The legal frame too comes at the support of the agro-tourism establishing the juridical platform for the organisation and function of the agro-touristic activities and rural tourism, legal frame formed particularly by government laws and decisions, as well as their methodology and application.

RESULTS AND DISCUSSIONS

The urban population, based on the latest statistical data, represents approximately 55% of the total of the population. Therefore it compounds the majority in the Romanian society representing an important potential with regards to the touristic demand for the rural environment in a context receiving considerations relative to factors which favour the development of the agro-tourism.

Another condition regards the spare time. Starting with the period following 1989 up to today the work week has been composed of 5 days and holidays are of approximately a month per year. Therefore the active employed population would dispose of the necessary time to spend a maximum of weekends, or even longer vacations out of the residence it sometimes needs to escape of.

We have to mention here aspects with regards to the third-age population, the retirees in particular, who represent a high enough percentage in the overall Romanian population and who have the availability in every season of the year as well as the desire to get away and live new experiences. The young population, pupils and students in particular, represent an important mass of potential tourists as well.

The development of the agro-tourism is also influenced by people's real income, this bringing along the most restrictive character which sometimes leads to the blockage of the agro - touristic demand. In the conditions where the urban population is bound to spend an important percentage of its income - and we are talking here about anywhere from 65 to 75% - for satisfying basic needs, the left income which could be destined to agro-touristic activities is very small, sometimes inexistent.

With regards to families' degree of motorisation we are confronted with a paradox; although the real income decreased, the number of cars and residential constructions increased in the urban, as well as in the rural areas. The high motorisation level of families creates the necessary conditions for the transit of potential tourists because the rural tourism and the agro-tourism are mainly forms of family tourism. The automobile is indispensable for transit in the areas where there are no common transportation means and at the same time brings an increase in comfort during excursions or longer travels as opposed to common transportation.

The development of the rural infrastructure represents a demand of the development of rural areas regardless of the direction of the development. Therefore no economical or social development project can be conceived without the existence of the necessary infrastructure, most commonly identified through:

- the modernisation and maintenance in good condition of the infrastructure for access, roads and routes in all regions and areas where the development of the agro-tourism is intended, and not only.
- the release in use of common transportation means

- the conception and implementation of a telecommunication system so that neither the local population, nor the tourists be isolated and can get into contact with whomever they desire, at all times. In the present, more and more bookings are made electronically, throughout the internet or by phone and in the context of promotional activities these means hold an increasing share.
- the electrification in villages and mountainous households
- the supply with water for residences and spaces destined to tourists, the improvement of the residential heating systems
- the creation of sewage and purging systems for residual waters
- the awareness of the population regarding the importance of preserving the environment and the rural landscape
- the organisation of sanitary networks in every commune and the increase in the capacity of identifying the persons needing medical assistance
- the organisation and good function of schools/educational networks.

The organisation of the receiving structures represents another necessary condition for the carry out in good conditions of the agro-touristic activities. In each commune with agro-touristic potential and where the development of the agro-touristic activity is targeted there must be created a receiving and guiding office for tourists, easily accessible and identifiable by tourists, flagged accordingly. This office must have specialised personnel present and able to offer the tourists information pertinent to the commune, the households in the area, lodging conditions, products offered in the vicinity, touristic and agro-touristic pensions (B&B) etc. The office for receiving and guiding tourists can be organised by the agro-touristic associations of the area. The organisation of agricultural exploitation for receiving tourists implies the set up of accommodation spaces and circulation among the agro-touristic operations so as to be attractive for tourists. The touristic set up of rural areas is concretised through the set up and preparation for visits of cultural and historical objectives in the area, objectives which can be churches, museums, windmills or old production plants, centres of trades and popular art, the set up of roads and access ways, sports fields and places for outdoors activities, marking hiking trails etc.

Another efficient condition in the development of the agro-tourism are advertising campaigns which can vary from independent financial efforts to multinational projects. Independently of these, the promoting campaigns can have five steps:

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION 3rd INTERDISCIPLINARY

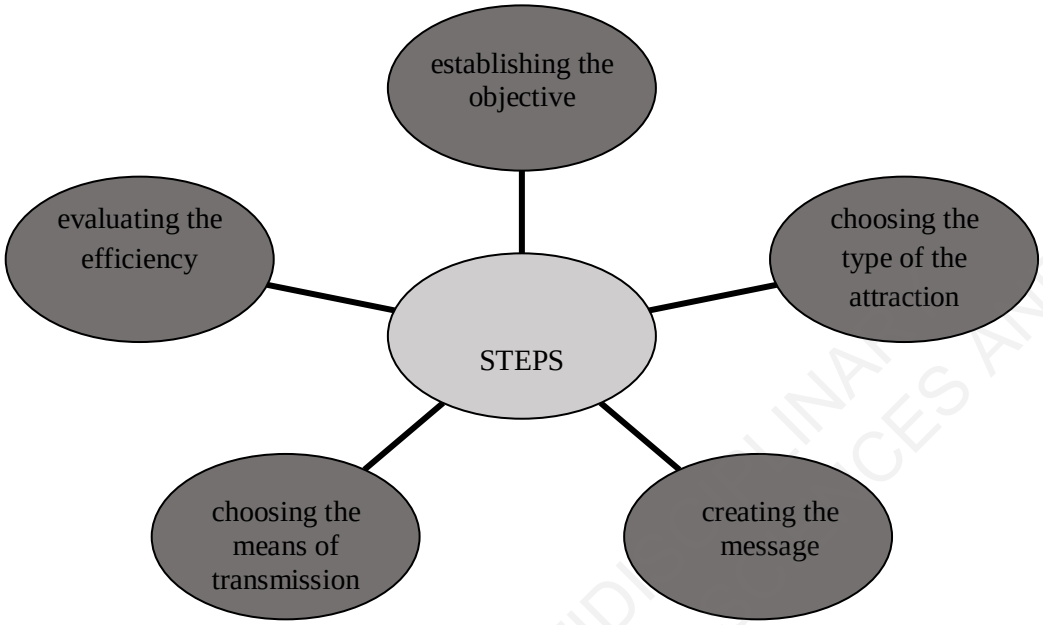


Figure1. Steps for promoting campaigns

The campaigns are not only addressed to a public made of clients or its suppliers (for an agro-touristic pension), carriers (access to certain areas), its own employees, competitors, share holders, investors, but also to the touristic agencies which, accros contracts with the pensions, offer selling the services of the respective pension [7]. The pensions have the following role:

- attract the tourists by their own means
- or by means of some touristic agencies
- traditions and local customs - sharing knowledge towards tourists - attracting the public
- the idea of new (differences between pensions)
- differentiating the product (touristic potential)
- preserving the local architecture (aspect)
- preserving the identity of the region (local politics of the area)
- involvement towards the preservation of the authenticity of the region through a public relation campaign (elements of differentiating the regions)

The success of a campaign is composed of the sympathy and the support of the targeted public and therefore needs to aim at obtaining a positive attitude from each category of public.

CONCLUSION

To realise these conditions substantial efforts are necessary both economically and socially, eliminating the developmental and qualitative differences between the rural and urban mediums. Currently there is a big gap between the rural and urban environment with regards to the infrastructure, many of the communes which have received the title of "city" still having deficiencies at the infrastructure chapter. Today, the mountainous area stands out through a low level of the development of the infrastructure, even if it is an area which benefits of many riches exploited with no regard to the development of a corresponding infrastructure. The mountainous area is the least equipped in terms of infrastructure, transportation means, communication, water supply, sewage, but also medical services and educational networks. Without addressing these lacks it is hard to believe that a development of the agro-tourism is possible, the beauty of the landscape, the cleanliness of the air and traditional hospitality being unfortunately, not sufficient.

With reference to the influence the politics can have on the agro-tourism we have to mention the various sustainability and support programs which through financing from reimbursable on non-reimbursable fonds can have a decisive role in the start-up of certain activities in agro-tourism, or in the modernisation of operations where the agro-tourism is already practiced. In the mountainous regions the support from the central authorities towards the development of the agro-touristic activities is more than welcome, the mountainous area being mostly a disadvantaged one.

For a proper development of the agro-tourism the association of agricultural operations with professional organisations which have as target the promoting of business - is necessary. The experience of the western countries has proved that union structured organisations based on mutuality leads to success in the field of agro-tourism.

REFERENCES

[1]. Băneş A., Orboi Manuela-Dora, Comparative analysis of statistical data on tourist accomodation in Romania and the European Union, Lucrări Ştiiţtifice Management Agricol, Vol. XVII (4), ISSN 1453-1410, pp 22-27, 2015

[2]. Craciun Ş. – Agroturism- organizare şi eficienţă, Ed. Mirton, pp. 70-71, 1997

[3]. Marin Diana, Study on the impact of tourism and of agrotourism on local communities, Research Journal of Agricultural Sciences, Vol. 47, Issue 4, Timisoara, Romania, pp. 160-163, 2015

[4]. Papuc, M. – Tehnici promoţionale, Editura Sylvi, Bucureşti, pp. 18-19, 2000

[5]. Petroman I., Petroman Cornelia, Agritourism and its forms, Lucrari Stiintifice Seria Agronomie, ISSN 1454-7414, vol 53, Iasi, Romania, pp. 367-369, 2010

[6]. Petroman, I**.** Marin Diana, Petroman Cornelia, Bazele turismului, Editura Eurostampa, Timişoara, Romania, pp 166-167, 2015

[7]. Popescu Gabriela, Iasmina Iosim, New tendencies in consumer behaviour, Scientific Papers Agricultural Management, ISSN 1453/1410, XIV (2), pp 612-613, 2012

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

CORPORATE CULTURE AND MARKET ORIENTATION IN HIGH-TECH COMPANIES

Vladimír Chalupský,
Brno University of Technology, **Czech Republic**

ABSTRACT
The purpose of this paper is to extend knowledge on the relations between market orientation and a company performance. The study works on the assumption that company performance is influenced (among other factors) by company culture. Starting point of the research is definition of market orientation and measurement of its nature in the Czech high-tech companies. The barriers of market orientation based on dominant corporate culture were defined and discussed.
The empirical research is based on several approaches – the data were obtained by questionnaires – while the market orientation is derived from our own definition, the corporate culture analysis was based on the organization culture assessment instrument (OCAI).
The results indicates two groups of barriers for market orientation implementation – internal and external. The influence of these two groups is quantified using logical framework and statistical analysis. The value of this research can be seen in two mutually dependent areas – in the "scientific level" the is the contribution seen in more in-depth analysis of mutual relationships between these two concepts, in the "practical level" the results show the most "promising" ways in the improvement of organizational issues connected with a corporate culture decisions.

INTRODUCTION
Market orientation (hereinafter MO) is one of the most intensively explored topics in the field of business management. It has been under permanent focus of both theoreticians and practitioners within past 10 - 15 years. This is manifested by a number of relevant arguments, particularly by extensive publication activities and space given to various aspects of market orientation at scientific and specialised conferences. The paper is based on research that has been started by the support of the Grant Agency of the Czech Republic, Project no. 402/07/1493 named "Research of the Market Orientation Implementation in High-tech Companies" (hereinafter "GACR Research").

Market orientation
The concept of MO has its origin in a managerial approach known as "marketing concept". The marketing concept of entrepreneurship is one of the basic stones of marketing interpretation. This comes out of Drucker (1954) [2] marketing characteristics as "all enterprising seen from the point of view of its final results, i.e. from the customer perspective". This view has become an essential impulse for generations of managers, although it was not examined by a systematic scientific analysis in the later decades. The first attempt of this kind was done by Webster (Webster, 1988)
At the present time the scientific analysis of the market orientation concept is based around the following four areas:

1. Definition – the discussion seeks precise definition of market orientation. We look for an answer to the question ´What is market orientation?´. The basic sources

defining the MO approach are e.g. Kohli and Jaworski (1990), Narver and Slater (1990) [8] , Ruekert (1992) [10] and others.

2. Area of metrics – this direction of research is focused on finding appropriate ways of market orientation measures (e.g. Deshpande and Farley (1988) [1], Lado, Maydeu-Olivares and Rivera (1988) [6] , Kohli, Jaworski, 1990) [5]
3. "Modelling" of market orientation – the focus of this research branch is the effort to find preconditions for a "working" market orientation and its effects for a relevant company
4. Implementation – this area of the research seeks an answer to the question: How can a company increase its market orientation? (Olavarrieta, S., Friedmann, R. (1999), Gebhardt, Carpenter and Sherry (2006) [3], Mason and Harris (2006) [9]

In the current era of increasingly competitive global markets and permanently evolving customer requirements, marketing orientation is perceived as a major influence on strategic decision-making (e.g., Jaworski & Kohli, 1993) [4]. Understanding the impact of MO has been found to be especially important in business to business (B2B) markets where the economic implications of customer loss can be particularly troublesome (Liao, Chang, Wu, & Katrichis, 2011) [7].

Company culture

Contemporary authors may give similar interpretation to the term *corporate culture*, but their content definitions are relatively varied (Lukášová, R., Nový, I. et al., 2004). According to Lukášová, Nový et al. (2004) most of the definitions of these authors are lists of structural elements, or they underscore a specific function of a corporate culture. The problems encountered in defining corporate culture come from the ambiguity of the term itself. Lukášová, Nový et al. (2004) proposed a generalization of the current interpretations in the following definition: "Organizational culture can be defined as a set of basic assumptions, values, attitudes and standards of behaviour that are shared within the organisation and are expressed in the thinking, feeling and behaviour of the members of the organisation and in the artefacts of tangible and intangible nature." These authors also note that authors agree mainly in that organisational culture needs to be viewed as a multidimensional phenomenon, elements of the organisational culture representing its basic structural and functional elements are structured into several mutually dependent layers, and the artefacts and behaviour need to be considered as the external perceptible layer of the organisational structure, which is determined by the internal, invisible layers of the organisational structure. "The principal parameters of culture that determine its functionality in an organisation are the content and strength of the organisational culture" (Lukášová, Nový, 2004). The content of culture is represented by basic levels (assumptions, values and standards of behaviour shared in the firm and outwardly represented by means of behaviour and artefacts. Corporate culture strength defines the extent to which these elements of individual levels are being shared by members of the firm, which significantly influences the firm's operation. The content determines whether this influence will be a positive or a negative influence. Weak corporate culture means that there is very little sharing of common assumptions, values and standards of behaviour among members of the firm, and their behaviour is more influenced by their individual characteristics, i.e. personal characteristics, values and standards of behaviour.

When delineating corporate culture, it is also important to take into account what functions it performs in the firm. According to Lukášová, Nový et al. (2004), the functions can be summarized as follows:

- to reduce conflicts in the firm,
- to provide continuity, to mediate and facilitate coordination and control,
- to reduce workers' uncertainty and to enhance their satisfaction and feeling of emotional well-being,
- to provide incentives (i.e. serves as a source of motivation) and, if it is sufficiently intensive and contextually relevant, it is a competitive advantage.

Through the functions it performs in the firm, it influences the behaviour of people within the firm as well as the firm's behaviour towards its external environment. With respect to the implementation of market orientation in the firm, it is also important to mention the relationship between corporate culture, strategy and the environment. Corporate culture greatly influences the setting up of strategies as well as their implementation. The content of corporate culture is expressed in the workers' everyday behaviour, and it may be a major positive factor for strategy implementation or, on the contrary, a potential hindrance to it. If the firm's strategy is clearly and precisely formulated and in line with the content of strong corporate culture, then the culture will act in support of strategy implementation. In its turn, strategy influences the content of corporate culture. It is expected that strategy will be communicated by means of the mission, detailed into a system of objectives and procedures for their attainment. If successfully implemented, it will produce the results expected, people will identify themselves with it, and it will transform itself into an approved pattern of behaviour which will be passed on as "the way things are done in this firm". The ideal situation is not a complete harmony between the strategy content and the culture content. A certain level of conflict creates space for new strategies. The source of the conflict is the adaptation of culture to the environment.

METHODS

This study is structured using the exploratory research framework. We have defined research questions like follows:

To what extend does the market orientation influence the company performance?
What type of barriers are limiting the market orientation?

A total of 450 companies were included in the research. The high-tech companies were contacted over the phone and asked to fill in a web-based questionnaire. The complete database was analysed by using standard statistical methods. Incomplete questionnaires were discarded. Data from 88 companies was used for further processing, which is an overall response rate of 19.6 %.

Starting point have been the definitions of both “market orientation” and “corporate culture”. Market orientation is measured by using the typology created within the framework of the Research - so called “New Method” (Tomášková, 2005). The New Method involves items related to external environment, final customers' orientation, distributors’ orientation, competitors’ orientation, and suppliers’ orientation. They reflect knowledge of the decision making process and inter-functional coordination. The structured items were designed for measurement of market orientation.

The first group of data was focused on research of market orientation at high-tech companies generally. The New Method includes items of external environment (4

items), items of branch environment (24 items) and items of internal environment elements of a company (24 items). These items were rated on seven-point Likert-type scales, where 1 = highly disagree and 7 = highly agree.
Cronbach alpha was used for measuring the validity of the New Method. The final value of Cronbach alpha for the entire measurement of the New Method of market orientation is 0.893. It means the New Method can be used for the measurement of market orientation.

Measurement of corporate culture was based on the "Competing Values Model", developed by Quinn and Rohrbaugh (1983) and Cameron and Quinn (1999) [12].

Market orientation vs. corporate performance

The influence of market orientation on corporate performance is given on Figure 2 - 4:
Figure 2: The influence of market orientation on corporate performance (comp. 1 – 30)

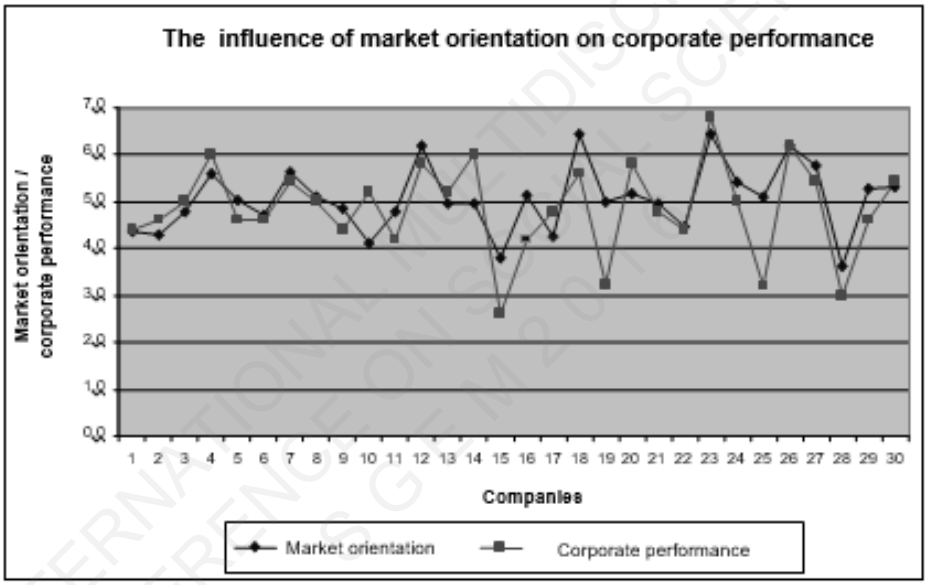
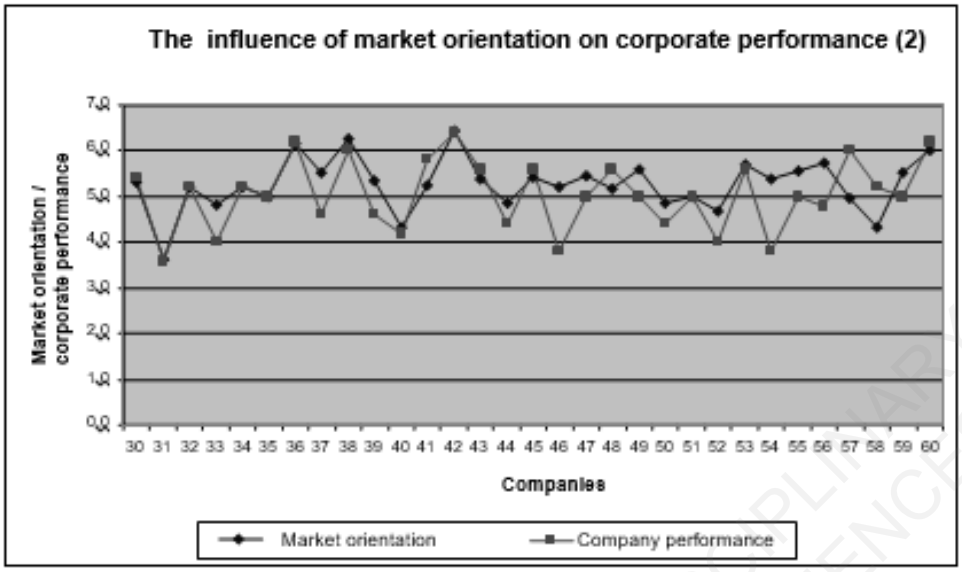


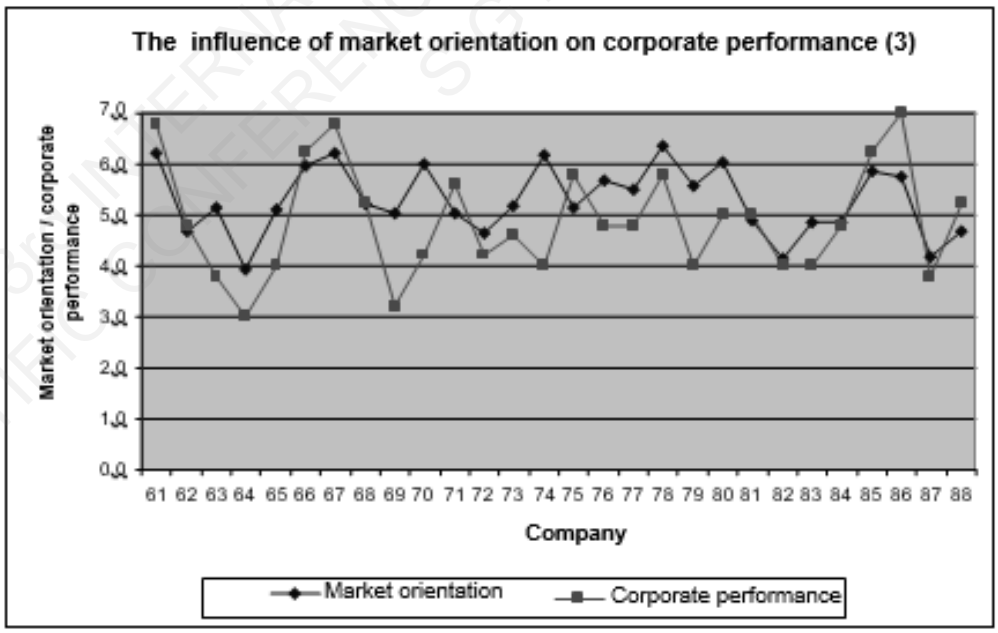
Figure 3: The influence of market orientation on corporate performance (comp. 31 – 60)

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016



From these figures (see graphs above) we can conclude the positive relations between the level of market orientation and corporate performance – the higher is the „level" of MO, the higher is the level of corporate performance and vice-versa. Taking into consideration the fact, that improving level of corporate performance means signal of strengthening position of a company on a market, it seems clear that higher level of market orientation brings an opportunity to improve competitive position of a company.

Figure 4: The influence of market orientation on corporate performance (comp. 61 – 88)



Barriers for market orientation implementation

Based on the information, gathered in this research, we analysed also the barriers that are perceived by managers as most important in the process of implementation of market orientation. The "New Method" (Tomášková, 2005) [11] indicates three types of barriers: "internal", "industry" and "external" barriers, in this paper, however, we will concentrate just on internal and external barriers, leaving industry barriers out for the moment. As an valid indicator of "barrier" we consider the level of agreements with statements in questionnaires – in accordance with the logic of Likert 7-point scale (0 – highly disagree, 7 – highly agree) those with low value indicates potential barriers. The results are as follows (see table 1):

Table 1: Average values of Market orientation

Area		**Mean Value**
1	External Environment (4 items)	4,75
2 A	Final customers (7 items)	5,51
2 B	Competitors (5 items)	4,96
2 C	Suppliers (5 items)	4,66
3 A	Interfunctional coordination (14 items)	5,76
3 B	Reflection of the knowledge (5 items)	5,34

It seems to be evident, that the highest level of consent – given to the Final customers area (covered by 7 items in the questionnaire) indicates relative high level of attention, being paid by company managers to customer relations area. On the other side, the lowest level is given to Suppliers – which indicates lower level of attention.

Corporate culture and market orientation

The corporate culture has been analysed using the OCAI methodology. Out of 450 companies addressed, 72 complete forms were submitted, this represents 16 % response rate. Connected with corporate culture, we can state that some items were judged surprisingly low (and vice versa): integral part of corporate culture are "responsibility" and "interdepartmental conflicts". These factors were analysed by questions:

- Every employee knows his/her competences and responsibilities (average value 5,71).
- Every employee is acknowledged with main objectives of the organization and know how to contribute to their achievement (average value 5,63).
- In our business we are taking into account the ethics of business and making ethical decision (average value 5,85).
- We prefer team work and mutual cooperation within the company (average value 5,75).
- We regularly analyze comments of employees (average value 5,36).
- We pay systematic attention to the information exchange among individual departments (average value 5,12).

- Managers of all departments provides comments and their opinion during the planning process (average value 4,23).
- Relations between superiors and subordinates cannot be defined as very strict and formal (average value 4,72).

DISCUSSION, CONCLUSION and LIMITATIONS OF RESEARCH

Analysis of the level of market orientation vs. company performance indicates strong dependence between these variables – the results give us evidence about close relations between them: the higher level reaches the market orientation, the better performance is achieved.

The results of analysis of corporate culture shows the importance of clear definition of responsibility, information sharing and smooth planning process as well as the importance of prevention of conflict between different departments. Surprisingly for the high-tech segment, the level of the management involvement seems to be relatively low (see average level of 4,23). This indicates low attention being paid to internal processes.

The importance of internal and external barriers were analysed as well: while external barriers are beyond the direct control of companies, the internal barriers represent a chance to build a sustainable competitive advantage – by mastering internal processes and building a strong corporate culture.

The limitations of the research goes from both orientation to high-tech companies (according to CZ-NACE typology) and from limited sample of respondents. There is also ample space for more detailed analysis of links between these variables, using more "robust" (and representative) sample of companies. More in-depth analysis of specific situation in this sector as opposed to more "traditional" sectors would be beneficial.

REFERENCES

[1] Deshpandé, R.; Farley, J.U., 1998. Measuring market orientation - generalization and synthesis. *Journal of Market-Focused Management*, vol. 2, no. 3.

[2] Drucker, P. F. (1954). Concepts of the Corporation. pp. 73.

[3] Gebhardt, G. F., Carpenter, G. S. and Sherry J.F. (2006) Creating a Market Orientation: A Longitudinal, Multifirm, Grounded Analysis of Cultural Transformation. Journal of Marketing: October 2006, Vol. 70, No. 4, pp. 37-55.

[4] Jaworski, B.J.; Kohli, A.K., 1993. Market Orientation: Antecedents and Consequences. *The Journal of Marketing*, vol. 57, no. 3, pp. 53-70. ISSN 0022-2429.

[5] Kohli, A.K.; Jaworski, B.J., 1990. Market Orientation - The Construct, Research propositions, and Managerial Implications. *Journal of Marketing*, vol. 54, pp. 1-18.

[6] Lado, N., Mayedu-Olivares, A., Rivera, J. (1998). Measuring Market orientation in several populations: a structural equations model, *European Journal of Marketing*, vol. 32, no. 1/2, pp. 23 -39.

[7] Liao, S.-H., Chang, W.-J., Wu, C.-C., & Katrichis, J. M. (2011). A survey of market orientation research (1995–2008). Industrial Marketing Management, 40(2), 301-310.

[8] Narver, J.C.; Slater, S.F., 1990. The Effect on Market Orientation on Business Profitability. *Journal of Marketing*, vol. 54, pp. 20 – 35.

[9] Olavarrieta, S., Friedmann, R. (1999). Market-oriented culture, knowledge related resources, reputation assets and superior performance: a conceptual framework, *Journal of Strategic Marketing*, vol. 7, pp. 215-228.

[10] Ruekert, R. W. (1992). Developing a Market Orientation: An Organizational Strategy Perspective, *International Journal of Research in Marketing*, vol. 9, pp. 225-245.

[11] Tomášková, E., 2005. Měření tržní orientace a její vliv na podnikový výkon, Vutium, Brno. 29 s. ISBN 8021430273. *(Measurement of the Market Orientation and its Influence on the Company Performance)*

[12] Quinn, R., Rohrbaugh, J. A special Model of effectiveness criteria: Toward a competing values approach to organisational analysis. *Management Science*. Vol. 29(3), pp.363-77

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

DEMOGRAPHIC POTENTIAL OF THE REGION: SPATIAL ANALYSIS

Assoc. Prof. Dr. Niyaz K. Gabdrakhmanov [1]

Prof. Dr. Nailya G. Bagautdinova [2]

Assoc. Prof. Dr. Oksana V. Polyakova[3]

[1]Kazan Federal University, **Russia**

[2]Kazan Federal University, **Russia**

[3]Kazan Federal University, **Russia**

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS

ABSTRACT

Under existing socio-economic conditions which are characterized by tough competition the region resource base is given particular attention. The importance of natural wealth declines and the significance of hidden resources steps forward. Hence the humankind is facing the problem how to bring out their potential. In this regard, the demographic potential of the region (geodemographic potential) along with the economic, geopolitical and others are among the leading indicators that determine region competitiveness and form its socio-economic situation.

Like natural resources, population has spatial differentiation, and therefore territorial differences in quantitative and qualitative terms. The article considers terminological approaches to the concept of "demographic potential", reveals the necessity to consider the spatial component, formulates the concept of "geodemographic potential" and proposes methodology to assess it.

At the moment there is a growing awareness of the need to resolve demographic problems at all levels of the government, and tools to improve demographic and family policy are considered. Ultimately, development of proper and timely decisions to ensure sustainable socio-demographic development should have a positive impact on socio-economic growth indicators. Therefore, one of the most important components to guarantee sustainable socio-economic development of the country, in our view, is to take into account its geodemographic potential.

Keywords: geodemography, territorial paradigm, territory, potential, the Republic of Tatarstan.

INTRODUCTION

The recent trend within the scientific community focuses on regional development from the territorial paradigm perspective. It is stated that region geographical position plays great role in its development. There are many scientists who point out lack of thorough studies on this issue and as a result insufficient use of geodemographic potential to foster regional development [1]. The main concept of territorial paradigm is to define some positive factors contributing to socio-economic development, such as favorable geographical position [3], developed infrastructure, diversified economy etc. There are also some negative ones to be taken into account: the heterogeneity of economic, social and cultural environment, a significant territorial differentiation of socio-economic and demographic development within the macro-region.

The essence of the territorial paradigm is based on the concept that the territory is considered to be an arena of nature and society different driving forces and components interaction [2]. It is a resource, but at the same time it is a specially organized environment. Location leads to the formation of special socio-economic landscape [5], which is the outward expression of this concept content. From the conceptual point of view the location is the territorial opportunity where natural resource potential is the basis of the integral or complex potential [4].

DISCUSSION

In modern economic geography, the main subjects of study are territory, society and economic territorial organization and their interaction as a necessary condition for proper functioning [9]. Geographers consider the territory by two main aspects: as a spatial basis for activities and as a container of resources.

According to some researchers society can be considered as a territorial system of the highest level where all the elements are functionally interrelated. Moreover these ties could be mediated by the territory [4]. The relationships between nature and society are among these ties. The significant part of scientific and practical problems in geography is devoted to the large integrated systems study. Vishnevsky A. G. considers the concept of "population" and the term – "demographic system" to be synonymous ones. This approach indicates the population systemic nature [11]. Based on this approach, material objects of study in geography are territorial systems.

There is a demand to study regional demographics. To meet this demand the authors formulated the concept of territory geodemographic analysis [3]. It is based on the perception that it is necessary to consider not only demographic characteristics but also numerous socio-economic ties and relations between administrative-territorial units at different levels [8]. The theory of potential is currently widely discussed. It is described as aggregate resources to be used for region development with the view to trends in science and technology progress. We can further come to the concept of economic, social, natural resource and other capacities.

METHOD

The main objective of this study is to describe demographic potential since we consider it to be an important part of the national wealth. Variety of approaches to the demographic potential interpretation requires a detailed consideration of existing definitions. In the works of American scientist R. Fisher [2] the concept of demographic potential is described as the concept of reproductive potential. Later in his studies P. Leslie [7] developed a discrete theory of reproductive potential. The potential of population growth was first proposed by the French demographer P. Vincent [10]. The consolidated list of approaches to the demographic potential interpretation was proposed by M. V. Igoshev (see Table.1).

Table.1 The basic approaches to demographic potential interpretation [6]

Definition	Approach (author)
The number of inhabitants in the country	Vishnevskiy A. G. Vasin S. A. Zayonchkovskaya Zh. A.
The number of inhabitants of a particular territory	Center for strategic research of the Volga Federal District
The size and age-sex structure of the population	Motrych E. L.
A set of quantitative and qualitative indicators of population groups at present and in the near future	Filimonova N. Krasnolobov V.
The number of people taking into account their cumulative time lived	Petrakova Yu.N.
Life potential	Vielrose E. Hersch L.
The quantitative and qualitative potential of population reproduction in a certain territory (state)	Fedotovskaya T. A.
The total number of the population, its demographic composition, the dynamics of growth (decline) of the population, migration processes	Shalmuev A.
The reproductive capabilities of the ethnic groups, community	Koreshkin A.
An indicator of potential population growth on the basis of already existing age-sex structure and fertility dynamics, nuptiality and other private indicators	Romashova T.V.
Index of population reproduction dynamics and its demographic prospects at the aggregated level	Ediev D. M.

FINDINGS

We can say that there are two components in the demographic potential concept. The objective component contains aggregate intangible, human, material and natural resources involved and not involved for any reason in production, and having the

chance to participate in it. The second component which is a subjective one includes the ability of people, groups and society as a whole to use resources and create maximum volume of material goods and services, and the ability of the administrative apparatus of the enterprise, organization, industry, economic system in general to the optimal use of all resources available. The structure of demographic potential, as well as the general scheme of demographic and socio-economic potential interaction in this context, and with reference to available resources and existing capacity is shown in Fig.1.

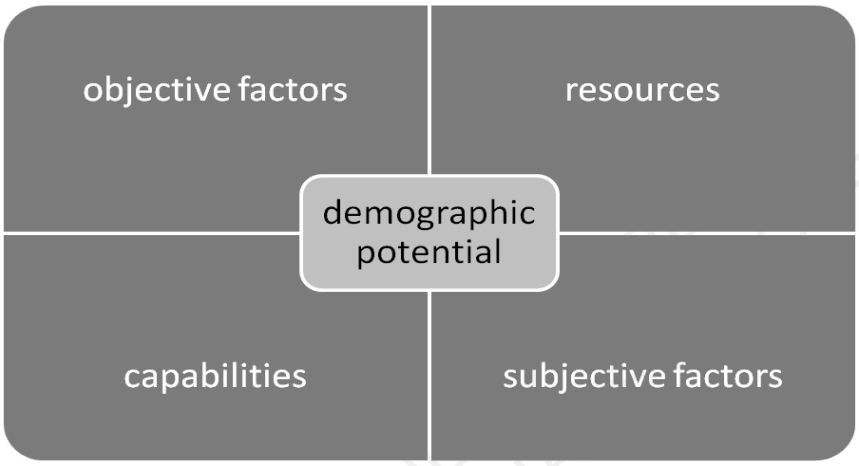


Fig.1. The structure of demographic potential.

If we consider Geography with its subject of the study, its approach (territorial paradigm) we see that it looks at the concept of demographic potential deeper and in addition to the above-described components highlights the spatial features of this potential formation.

This approach leads us to a relatively new geographical science. It appeared in the 70-ies of XX century and is called geodemography - "the research which is based at the intersection of human geography and demography and deals with the geodemographic situation study." Fedorov G.M. formulated the fundamental concepts for geodemography. These are “geodemographic system”, “geodemographic situation” and “geodemographic setting” [1].

Geodemographic system is the model connecting demographic processes to the socio-economic factors reflecting the structure and dynamics of links that have been developed for a specific territorial level. Geodemographic situation is the geodemographic state of the system at the moment defined by a set of external, socio-economic factors. Geodemographic setting is the sequence geodemographic situations following each other and typical for specific territory, which develops under the influence of both external and internal socio-economic factors.

CONCLUSION

Taking all the issues into consideration we can state that territorial component should be added to the existing definitions of demographic potential. We believe geodemographic

potential of the territory to be the set of human resources of the territory, formed under existing geodemographic situation, and which can be used in the territory development considering its geodemographic setting.

The geodemographic potential assessment should be done as follows: grouping of individual indicators [9] on a five-point scale; the scoring (maximum score is assigned to the optimal (best) indicator, minimum to the worst); the summation of scores in blocks of geodemographic studies using the method of multidimensional classification and interpretation of results based on the particular indicators importance. The level of the integral indicator in the blocks was determined as high, increased, medium, decreased and low.

Analysis conducted by the authors is based on the block system, each block of which includes a number of objective indicators. To process statistics results we used ArcGIS GIS software, on the basis of which authors created the database.

The result of the study represents the Republic of Tatarstan zoning, according to typological features of the geodemographic potential formation. On the basis of these typological features 4 zones were allocated: District, Sub-District, Petroleum and Industrial-Agricultural zones (Fig.2). Each of them is characterized by its own type of geodemographic potential formation.

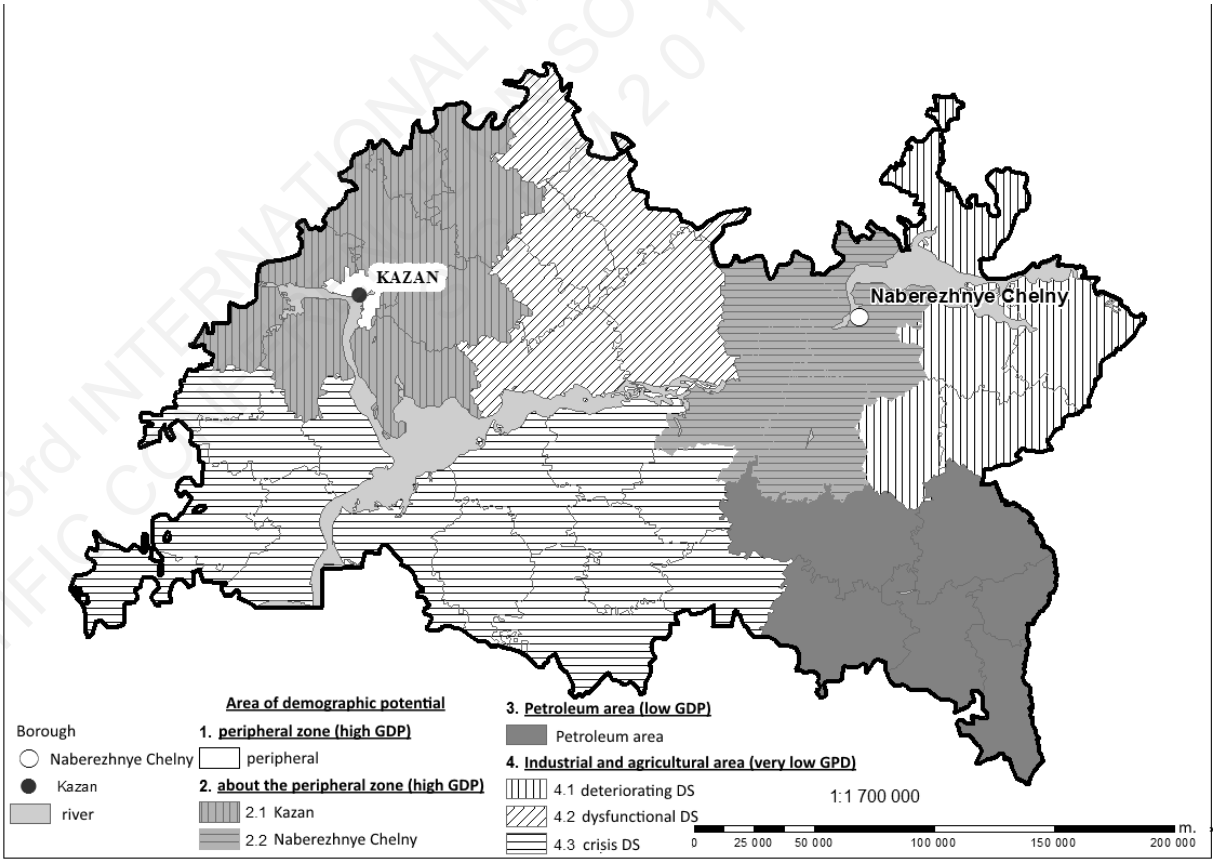


Fig.2. The Republic of Tatarstan demographic potential zones

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE SOCIAL SCIENCES AND ARTS SGEM 2016

REFERENCES

[1] Fedorov, G. (2014). The concept of geo-demographic situation and geo-demographic typology of the subjects of the russian federation. Bulletin of Geography, 25(25), 101-114. doi:10.2478/bog-2014-0032

[2] Fisher R. A. The genetical theory of natural selection. N.-Y.: Dover Publications, 1930.

[3] Gabdrakhmanov N.K. Model of Sustainable Development of the Region // Mediterranean Journal of Social Sciences, Vol 5 No 24, 2014, pp.393-398

[4] Gabdrakhmanov N.K. Positioning of Volga Federal District Regions by Demographic Situation Index // World Applied Sciences Journal, Volume 30 Number 6, 2014. - pp.792-795

[5] Gabdrakhmanov N.K. The Objects of Social Infrastructure in the Social Image of the Region Shaping // Procedia - Social and Behavioral Sciences 140 (2014) 419 – 421

[6] Igoshev, M. V. (2013). Self-preserving behavior and labour activity of russian population. Middle East Journal of Scientific Research, 17(3), 344-348. doi:10.5829/idosi.mejsr.2013.17.03.12141

[7] Leslie P. H. Some Further Notes on the Use of Matrices in Population Mathematics // Biometrika, XXXV 1948, p.213-245

[8] Rubtsov, V.A., Gabdrakhmanov N.K., Mustafin, M.R., Arzhantseva, N.V. Optimization model of making a decision in the conditions of uncertainty (correlation of interests and preferences in regional systems) // Mediterranean Journal of Social Sciences 6 (3), pp. 781-785

[9] Rubtzov, V.A., Gabdrakhmanov N.K., Mustafin, M.R., Pratchenko, O.V. Geodemographic potential of the republic of Tatarstan: Analysis, evaluation, territorial differences // Mediterranean Journal of Social Sciences 5 (24), pp. 278-284

[10] Vincent P. Potentiel d'accroissement d'une population stable // Journal de la Societe de Statistique de Paris, 1945, v.86, p. 16-29.

[11] Vishnevsky, A. G., Zayonchkovskaya, J. A., & Pivovarov, Y. L. (1983). The influence of the demographic situation on the evolution of settlement in the USSR. Izvestiya - Akademii Nauk SSSR, Seriya Geograficheskaya, 6, 68-76.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

DEVELOPMENT OF ENTREPRENEURIAL SKILLS AND COMPETENCES THROUGH BUSINESS SIMULATIONS

Assoc. Prof. Ing. Vladimír Chalupský, CSc., MBA

Ing. David Schüller, Ph.D.

Ing. Vít Chlebovský, Ph.D.

Brno university of Technology, Faculty of Business and Management, **Czech Republic**

ABSTRACT

The purpose of this paper is to illustrate how business simulations - as active modes of entrepreneurship education - contribute to achieving higher levels of critical thinking, deeper understanding and efficient grasping of a set of key entrepreneurial skills and competences. This study analyses the role of business simulation in the development of these skills and competences in the teaching/learning process in the master´s courses at the Faculty of Business and Management, Brno University of Technology.

The authors propose a set of activities that can be overlaid on a business simulation to enhance the learning experience. They are analysing links between different variables in the process of evaluation a students' performance. The data are obtained from both simulation itself (comparison of 50 student´s teams) and from students' feedback (195 questionnaires) – covering the whole students´ cohort from this academic year. The analyses characterize also the differences in performance of two different study programmes, identifying the influence of different study background of particular students´ cohorts.

Arithmetic mean method is used to identify which skills and competences are perceived by participants of the courses as crucial for their entrepreneurship education. Null and alternative hypotheses are formulated to investigate if there are statistically significant differences in performance between two study programmes. Mann-Whitney U method is used to test the hypotheses. Data sets were processed in the software IBM SPSS 22 Statistics.

Obtained data suggest that the enhanced simulation-based teaching/learning approach provided a valuable platform for achieving the learning outcomes. The value for marketing educators consists of the fact, that the proposed teaching/learning approaches can be used in a wide spectrum of business simulation, thereby providing more guidance to students and instructors alike.

Keywords: entrepreneurial skills**,** business simulation, study programme, performance

INTRODUCTION

Our study is based on our experience with more than 10 years application of business simulation in teaching process at the Faculty of Business and Management, Brno University of Technology (hereinafter "the Faculty"). In this semester, we have used

one of the simulation from the "Marketplace®" portfolio offered by International Learning Solutions (http://www.ilsworld.com/): Advanced Strategic Corporate Management (ASCM). Two cohorts of students have passed this course – each with different "marketing" background: the first cohort of 86 students does not have any previous academic background in marketing, while second cohort of 109 students participated in at least one marketing course during their studies at the Faculty.

ASCM is an entrepreneurial, large-scale, competitive, full-enterprise simulation. It is integrative in that students struggle with business fundamentals and the interplay between marketing, sales channels, human resources, operations, finance, and accounting. It is both tactical and strategic - there are many low level tactical decisions that must be managed according to a higher-level strategy. It requires a team of students who specialize in functional roles and need to work together and coordinate their decisions over an extended period of time in order to achieve the team´s strategic goals. It is entrepreneurial - the simulation employs a new venture situation where students build a business from the ground up. Throughout its two years of operations (eight decision rounds or business quarters), the business evolves and becomes more complex as new decisions need to be made. At the same time, there is a great deal of repetitive work in the ongoing operations, reinforcing previously introduced procedures, reports, and tools of management. Every business quarter, students must analyse an evolving situation, plan a strategy to improve it, and then work through many tactical decisions as they attempt to execute that strategy. They face great uncertainty from the market, employees, investors, their own decisions and competitors that are trying to outsmart them. Incrementally, they learn to skilfully adjust their strategy and tactics as they discover the nature of their real-life decisions, including the available options, linkages to other functions, conflicts, trade-offs and potential outcomes. The students compete in teams of five students in universes (games) composed of four teams. Approximately 700 undergraduate students annually participate in the experience. Another 50 graduate students have a similar experience at the end of their MBA programme.

Background

The recent development of computer hardware and software has made it feasible to incorporate Internet-based, 3D virtual reality (VR) in innovative applications of teaching, learning, and training [1]. Simulations and games are popular tools to help students build knowledge and skills regarding diverse management topics. They are one of "advanced" teaching methods for decades [2].
The contribution of simulations to teaching/learning process has been frequently noted by educational scholars. The value of business simulations in a capstone, integrative course are discussed in [3]. Furthermore, [4] have concluded that business simulations are effective due to the realism and control that they provide. Computer simulations offer students very robust experiential learning opportunities and benefits [5].

Managerial competencies are a specific type of individual competencies. According to [6], competencies are defined as a human ability to behave in a way to meet job requirements in parameters given by the organization's environment and thus to achieve the required results. Managerial competencies are activities, knowledge, skills or attitudes and perhaps also personal characteristics necessary to improve management

performance. Similar classification of competencies is given at [7], where author distinguishes between basic competencies and high performance competencies. Basic competencies are defined as knowledge and skills essential for the performance of a manager's job. They relate to specific tasks and guarantee manager's personal efficiency.

METHODS

This study is structured using the exploratory research framework. Our first research question is:

Do students who experience simulation in their education programme achieved better results, having previously passed any formal marketing course at the Faculty?

Drawing on theories of experiential learning and self-efficacy, it is possible to expect, that the simulation is more effective for students that have passed any formal marketing preparation prior the simulation itself – as opposed to those without any marketing course. This assumption is supported by studies performed by Gosen & Washbush [4], Second research question is:

Which managerial competencies are perceived as most developed through the simulation?

Data were collected from simulation feedback, which is available for competing teams and course lecturers (instructors) and from students via questionnaire. As a part of final session student were asked to fill a simple questionnaire, reflecting their perception on the simulation, its complexity and individual contribution. The students come from the following two different studying programmes – Corporate Business and Management and Information Management.

Null and alternative hypotheses are formulated to investigate if there are statistically significant differences in performance between two study programmes. Shapiro-Wilk test and of Mann-Whitney U t-test is used to test the hypotheses. Arithmetic mean method is used to identify which skills and competences are crucial for entrepreneurship education Data sets were processed in the software IBM SPSS 22 Statistics.

The Comparison of Results between the Study Programmes

The results creates the metric continues variable. The samples are independent. Two-sample t-test is used for the comparison (hypothesis testing) in compliance with the assumption of normality. The hypotheses are formulated as following:

H0: The performance results within the business simulation between the study programmes Corporate Business and Management, and Information Management are not different.

H1: The performance results between the study programmes are different.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS

To use the appropriate kind of t- test it is necessary to find if the data come from the normal distribution. Shapiro-Wilk test was used and the following hypotheses were formulated for that purpose. :

$H0_1$: Data come from normal distribution.

$H1_1$: Data do not come from normal distribution.

Table 1. Tests of Normality

Study Programme	Shapiro-Wilk		
	Statistic	df	Sig.
Information Management	,538	86	**,000**
Corporate Business and Management	,343	86	**,000**

P-Value (Sig.) is lower than the significance level $\alpha = 0{,}05$. Data do not come from normal distribution. Thus the nonparametric analogy of two-sample t-test - Mann-Whitney U test is used to test the hypothesis.

Table 2. Average Ranks of Study Programmes

Study Programme		N	Mean Rank	Sum of Ranks
Results	Information Management	86	103,95	8940,00
	Corporate Business and Management	109	93,30	10170,00
	Total	195		

The students of Information Management have higher results according to the average rank. It will be tested If the results are statistically significant.

Table 3. Hypothesis t-test: Mann – Whitney U

	Results
Mann -Whitney U	4175,000
Asymp. Sig. (2-tailed)	**,191**

On the basis of p-value (0,191) of the test the *H0* is not rejected. The study programme does not have any influence on the results.

Entrepreneurial Skills

The results obtained from the questionnaire survey confirmed that the business simulation is an effective tool to develop students´ key entrepreneurial skills and competences. The following set of skills and competences were formulated by educators to find out which of them are the most significant concerning the deepening and development of entrepreneurial skills:

- Teamwork skills
- Marketing competences
- Analytical skills
- Risk management skills
- Making decisions in time pressure
- Creative skills in managerial solutions
- Project management skills

Likert scale was used within the questionnaire survey when number 1 means perfect and number 5 unsatisfactory evaluation. The table below shows the result from the analysis whereby the arithmetic mean was used as the method of descriptive statistics for the identification of the most significant entrepreneurial skills.

Table 4. The Most Significant Entrepreneurial Skills

Entrepreneurial Skills	Information Management	Corporate Management and Economics
Teamwork skills	1,71	2,06
Marketing competences	2,15	2,20
Analytical skills	1,90	2,36
Risk management skills	2,15	2,56
Making decisions in time pressure	2,01	2,18
Creative skills in managerial solutions	1,71	2,17
Project management skills	1,90	2,20

Students identified teamwork skills and creative skills in managerial solutions as the most significant skills and competences for their development of entrepreneurial skills. The students from the Information Management programme consider analytical skills as very important on the contrary the students from the Corporate Business and Management programme highlighted the skills of making decision under time pressure. In general the students of Corporate Business and Management programme gave a little worse assessment but from the statistical point of view it is not significant difference.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

DISCUSSION AND CONCLUSION

In regard to the first research question statistical testing shows that there is no statistically significant difference between the study programmes in performance within the business simulation.

Even though the students of Corporate Business and Management programme passed formal marketing preparation prior the simulation itself they did not reach higher results within the business simulation. Students of Information Management programme are more ICT and generally technically oriented, which could lead to very good orientation in the business simulation.

In terms of the second research question teamwork skills and creative skills in managerial solutions were identified by the students as the most important.

When it comes to managerial competencies perceived as most developed through the simulation, there are slight differences in the two groups of students. Students of Information Management programme highlighted more analytical skills on the contrary students of Corporate Business and Management programme highlighted skills of making decision under time pressure. Evaluation of other skill development was rated equally in both groups.

We believe that similarity of the both group outcomes are given by the fact that both groups are studying in a quite homogenous environment of the Faculty of Business Management and influence of this environment might be the crucial reason for statistically equal performance results of both groups.

Thus future researches could focus more on divergent student groups that are not in any connection and under any influence of business management and business strategy disciplines within their studying programme.

REFERENCES

[1] Abulrub, A. G., Attridge, A. N., & Williams, M. A., Virtual reality in engineering education: the future of creative learning. In Global engineering education conference (EDUCON), 2011 IEEE (751-757). IEEE.

[2] Boyatzis, R. E., *The Competent Manager: A Model for Effective Performance*. New York: John Villey & Sons, 1982.

[3] Brooks, B.W., Burson, T.E., and Rudd, D.V., Addressing Current Research Gaps and Directions in Educational Marketing Simulations. *Journal for Advancement of Marketing Education, 2006.*

[4] Gosen, J., and Washbush, J., A Review on Scholarship Assessing Experiential Learning Effectiveness. *Simulation and Gaming,* 35 (2), 270–293, 2004.

[5] Schroder, H. M., *Managerial Competence: The Key to Excellence: A New Strategy for Management Development in the Information Age*. London: Kendall & Kent Publications,1989.

[6] Stephen, J., Parente, D.H., and Brown, R.C., Seeing the Forest and the Trees: Balancing Functional and Integrative Knowledge Using Large Scale Simulations in

[7] Summers, G. J., Today's business simulation industry. Simulation & Gaming, 35(2), 208-241, 2004.

DYNAMICS OF ECONOMIC ADJUSTMENT UNDER UNCERTAINTY: MS-VAR MODEL FOR BALTIC DRY INDEX

Sergei Kornilov

Svetlana Ridala

Assoc. Prof. Dr. Ants Aasma

Tallinn University of Technology, **Estonia**

ABSTRACT

Many economic processes occasionally exhibit dramatic breaks in their behavior, associated with externalities or abrupt changes in government policy. Of particular interest to economists is the apparent tendency of many economic variables to behave quite differently during economic downturns, while the factors of production but not their long-run tendency to grow governs economic dynamics. Since its introduction, the Baltic Dry Index has become one of the foremost indicators on the volume of worldwide trade and manufacturing activity. Over decades estimation of Markov regime-switching regressions typically relies on the assumption that the latent state variable controlling regime change is exogenous. In many macroeconomic applications there is common where it is natural to assume the state is endogenous. It is often the case that the estimated state variable has a strong business cycle correlation. Literature has shown that data sampled at high frequency can provide accurate estimates of volatility and therefore provide an accepted forecasting accuracy. Our model provides analytic expressions of the weights conditional on the Markov states and conditional on state probabilities.

Keywords: Vector autoregressions, Baltic Dry Index, Markov regime-switching,

INTRODUCTION

In the modern economic environment a lot of processes occasionally exhibit sudden changes in their behaviour caused by externalities or dramatic breaks in the government policy. Of particular interest to sciences is the obvious fact that a number of economic variables behave quite differently during economic disturbances and therefore follow different patters. However, among other elements of the complex economy the factors of production but not their long-run estimations to grow define the economic dynamics.

The Baltic Dry Index (BDI) is a composite daily index first appeared back in 1985. The correlation between changes in economic environment and the value of BDI takes place because the maritime transportation means are items with a long production time and with a long lifetime, so their level of the supply stays fixed in a short-term period. Therefore demand changes for sea freight reflect changes in tariff of freight. Simultaneously changes in goods demand tranship by sea especially bulk goods may indicate a change in economic activity.

The volatility of the bulk products has attached a great attention and initiated much research. In the past decades, econometric and statistical methods, such as VAR,

GARCH and VECM models, have been deployed for market analysis and forecasting. The predictability of BDI growth rate has a positive and statistically significant relation to stock and commodity returns, and industrial production growth. The variations across the real and financial sectors appear stable across a multitude of economies. The reason of a great attention to the real sector is that unlike stock and commodities markets, the BDI is totally detached from speculative players, what enables drawing a cleaner picture of economic activities. The commodities exchange is limited only to the member companies securing contracts with those who own actual cargo to tranship and those who are able to render such service. Some authors underpins that BDI can be seen for forecasting attitudinal changes in respect of stock exchanges and economic activity [2][12]. This corresponds with view BDI as a key balanced reference index for global economic movements [15]. The research [4] consider BDI to be as a leading indicator of economic activity reflecting global demand for raw materials, representing a reliable and independent source of information, assuming that the index has a cyclical pattern which has been relatively stable across time based on regression analysis [1][3][7]. Further goes with autoregressive models to exanimate causality relationship between the BDI and worldwide economic growth [5].

METHODOLOGY AND DATA

The regime switching models involve multiple structures that can describe the time series behaviours in different regimes [13]. So defining these structures, the proposed model are able to capture more complex dynamic patterns, which follow non-linear patterns [9]. Such approach constructs a forecasting model for each respective regime, which complements a single autoregressive model defined as a set of linear dynamic equations [11]. Multivariate AR models are commonly called vector autoregressive (VAR) models. There each variable is specified as a function of an equal number of lags of itself and all other variables in the system. Since decades estimation of Markov regime-switching regressions relies on the assumption that the latent state variable controlling regime change is exogenous, whereas assumed the state is endogenous [10]. The positive correlation of the estimated state variable with strong business cycle is often the case, what often applied in the regime-switching models. The model based on the assumptions provides analytical framework of the weights conditional on the Markov states and conditional on state probabilities.

The main log-data is taken from the Lloyd's List and Nasdaq OMX Baltic Stock Exchange for the period from 2009 to 2016 on daily basis. The BDI measures the price of shipping major raw materials such as metals, grains, and fossil fuels by sea. The London Baltic Exchange creates data sets upon daily assessments from a panel of shipbrokers. The BDI is a composite of 3 sub-indices, each covering a different carrier size: Capesize, Panamax, and Supramax. Capesize carriers are the largest ships with a capacity greater than 150,000 DWT. Panamax refers to the maximum size allowed for ships travelling through the Panama Canal, typically 65,000 - 80,000 DWT. The Supramax Index covers carriers with a capacity of 50,000 - 60,000 DWT.

The composite OMX Baltic Real Estate (BRE) is constructed based on the Industry Classification Benchmark. It is designed to track the Baltic constituents on NASDAQ OMX Riga, Vilnius and Tallinn in the selected industry or super sector. Further the Tallinn All-Share Gross Index (OMXTLL) includes all the shares listed on Tallinn

Stock Exchange. The objective of the Index is to represent the overall state and changes in the level of the Estonian economy. The purpose is to mimic the population of stocks representing the index, without complying with liquidity and stability requirements. Since there is no filtering for liquidity the Indexes themselves may not be easy to replicate in a portfolio or benchmark against and the pricing of the constituents, and hence the index level, may lag due to infrequent trading in the underlying shares.

The authors use the vector auto regressions with Markov-switching parameters (MS-VAR) to analyse the relationship between $BDI = \ln\left(BDI_t / BDI_{t-1}\right)$ and economic growth $y_t = \ln\left(BRE_t / BRE_{t-1}\right)$ and between *BDI* and $OMXTLL = \ln\left(OMXTLL_t / OMXTLL_{t-1}\right)$ □

MSI (M)-VAR(p) utilized the Granger causalities (*M* – the number of regimes, *q* – the number of lags of autoregressive terms to take into account) model is defined by the relation [6][13][14]:

$$y_t = \mu(s_t) + \sum_{i=0}^{q} A_i(s_t) y_{t-i} + u_t, \tag{1}$$

where y_t is a K – dimensional time-series, A_i (.) shows the coefficients of the lagged values of the variable in different regimes, $u_t / s_t \sim NID$ (0, I_K), (s_t) and $\mu(s_t)$ is the dependence of the mean of the vector on the regime variable s_t.

In MSI-VAR model the unobservable realization of the regime $s_t \in \{1,...,M\}$ is governed by a discrete time, discrete state Markov stochastic process, which is defined by the transition probabilities:

$$\Pr\left[s_t \left| \{s_{t-1}\}_{i=1}^{\infty}, \{y_{t-1}\}_{i=1}^{\infty} \right.\right] = \Pr\left\{ s_t \left| s_{t-1}; \rho \right.\right\}, \tag{2}$$

where ρ denotes the vector probability parameters. The conditional probability distribution of y_t is independent of s_{t-1}, that is,

$$P_r\left(y_t \left| Y_{t-1}, s_{t-1}\right.\right) = P_r\left(y_t \left| Y_{t-1}\right.\right). \tag{3}$$

The transition probability matrix P is

$$P = \begin{bmatrix} p_{11} & p_{12} & \cdots & p_{1M} \\ p_{21} & p_{22} & \cdots & p_{2M} \\ \vdots & \vdots & \ddots & \vdots \\ p_{M1} & p_{M2} & \cdots & p_{MM} \end{bmatrix}. \tag{4}$$

A Markov chain is irreducible in the sense that no state is absorbing and ergodic. A two-state Markov chain with transition probabilities $p_{ij}(i, j = 1,2)$ has unconditional distribution given by:

$$\Pr(s_t = 1) = (1 - p_{22}) / \Pr(s_{t-1} = 2),\ \Pr(s_t = 2) = (1 - p_{11}) / \Pr(s_{t-1} = 1). \quad (5)$$

If we denote $\Pr(s_t = 2) = p$, then $\Pr(s_t = 1) = 1 - p$.

The existence of nonlinear causality between the lagged values of Y_t and BDI_t it is possible to estimate with the help of equations:

$$Y_t = \alpha_1 + \sum_{i=1}^{m} \beta_i Y_{t-i} + \sum_{i=1}^{n} \phi_i BDI_{t-i} + u_t\,, \quad (6)$$

$$BDI_t = \alpha_2 + \sum_{i=1}^{m} \gamma_i BDI_{t-i} + \sum_{i=1}^{n} \lambda_i Y_{t-i} + v_t \quad (7)$$

Ergodicity of the Markov chain concerns that each states are aperiodic and recurrent. Under this condition and the condition that when occurring the Chain does not stay stuck into a state, the ergodic probability vector of the Markov chain can be interpreted as the unconditional probability distribution of the states.

EMPERICAL RESULTS

By running a likelihood-ratio test of the null hypothesis where the parameter vector of a statistical model satisfies smooth constraints, there is possible to detect the presence of two different regimes: one in which the response variable is highly correlated and other in which the response only depends on an exogenous variable *x*.

The stationarity of the *Y* and *BDI* was determined by using the unit root test. The results with *p-value* < 0.05 indicate that the *Y* and *LN BDI* appear to be stationary. After unit root test, Johansen procedure was used to determine the possible existence of co-integration between *BDI* and *Y*. Johansen test estimates the matrix rank of time series with the confidence level. The result rejects the null hypothesis of no co-integration. In the case of the co-integrated variables, they can be used for test of MS- Granger Causality.

The MSI(2)-VAR(1) model for (1), (6) and (7) was selected based on the Akaike Information Criteria (AIC) and likelihood ratio test. In order to determine the number of regimes a linear autoregression is tested against 2 regimes. Using the likelihood ratio test rejected the null hypothesis of linearity. Since it was observed that multiple regime models overruling the linear model, the relationships between the mentioned variables, and models with 2 regimes was considered. A MSVAR with 2 regimes is tested against a MSVAR model with a larger number of regimes. The H0 hypothesis for higher regimes was rejected and MSVAR with 2 regimes was accepted, as the optimal model because of the likelihood ratio test was greater than the 5% critical value of c^2. The empirical results for the MSI(2)-VAR(1) model in cases (1), (6) and (7) are presented in Tables 1 – 4.

The MSI(2)-VAR(1) model was estimated for the Estonia case. The Regime 1 is a low regime, where as the growth regime is the Regime 2. The model captures well the crisis regime switch with the given probability.

Table 1. Markov Switching Model

	Model 1 for BRE (1)		Model 2 for OMXTLL (1)	
	Regime 1	*Regime 2*	*Regime 1*	*Regime 2*
Intercept	-0.0017 (0.0041)	0.0001 (0.0005)	-0.0015 (0.0009)	-0.0003 (0.0002)
Y_{t-1}	-0.1738*** (0.0510)	-0.1403*** (0.0314)	0.0846 (0.0496)	0.0048 (0.0303)
BDI_t	-0.2299 (0.1606)	0.0081 (0.0183)	-0.0658 (0.0386)	0.0306 (0.0069)
Residual st. error	0.0834	0.0152	0.0191	0.0059
Multiple R-squared	0.0316	0.0320	0.0154	0.0017

Significance levels: 1%: *** 5%: ** 10%: *. Standard errors in parenthesis.

The model 1 has a regime where the covariant *x* is not significant and in the other regime the autocorrelation variable is highly significant. In both, the *R-squared* have low values. The transition probabilities matrix has high values, which indicate that is difficult to change from one regime to the other.

Table 2. Markov Switching Model

	Model 1 For BRE			
	(6)		(7)	
	Regime 1	*Regime 2*	*Regime 1*	*Regime 2*
Intercept	-0.0002 (0.4533)	0.0001 (0.0004)	0.0010*** (0.0003)	-0.0079** (0.0027)
Y_{t-1}	-0.1910*** (0.0496)	-0.1369*** (0.0318)	-0.0094 (0.0077)	0.0697 (0.0593)
BDI_{t-1}	-0.1067 (0.1387)	0.0107 (0.0168)	0.8016*** (0.0167)	0.2399*** (0.0617)
Residual st. error	0.0733	0.0147	0.0099	0.0431
Multiple R-squared	0.03435	0.03075	0.7173	0.06056

Significance levels: 1%: *** 5%: ** 10%: *. Standard errors in parenthesis.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION 3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE SGEM 2017

Table 3. Markov Switching Model

Model 2 for OMXTLL				
	(6)		(7)	
	Regime 1	*Regime 2*	*Regime 1*	*Regime 2*
Intercept	-0.0014 (0.0009)	-0.0003 (0.0002)	0.0010*** (0.0003)	-0.0078*** (0.0027)
Y_{t-1}	0.0925** (0.0495)	0.0069 (0.0071)	0.0070 (0.0338)	-0.0862 (0.2931)
BDI_{t-1}	-0.0728** (0.0357)	0.0286 (0.0307)	0.8016*** (0.0168)	0.2445*** (0.0617)
Residual st. error	0.0190	0.0058	0.0099	0.0432
Multiple R-squared	0.0193	0.0020	0.7175	0.0567

Significance levels: 1%: *** 5%: ** 10%: *. Standard errors in parenthesis.

The transition probability matrix implies random transition probabilities and always covariance-stationary:

Table 4. Transition probabilities Model 1 and Model 2

	Model 1 (6)		Model 1 (7)	
	Regime 1	*Regime 2*	*Regime 1*	*Regime 2*
Regime 1	0,8598	0,0465	0,939	0,2857
Regime 2	0,1402	0,9546	0,0609	0,7143
	Model 2 (6)		Model 2 (7)	
	Regime 1	*Regime 2*	*Regime 1*	*Regime 2*
Regime 1	0,9252	0,0271	0,9387	0,287
Regime 2	0,0785	0,9729	0,0613	0,713
$Prob(s_t=1\|s_{t-1}=1)$	0,86		0.920	
$Prob(st=2\|\ s_{t-1}=2)$	0,957		0,973	

CONCLUSIONS

This research might be seen more as complementary to the previous empirical articles. It differs from the existing studies for some aspects. The chosen MS-VAR model have been used in this study due to nonlinear structure of the economic time series, especially of OMX Stock Exchange data sets, which has been used as a proxy of economic performance. The reason of choosing the daily-based data sets is that they outperform other data with a larger gap by capturing rather shorter fluctuation, what reduce standard errors.

In the MSI(2)-VAR(1) model, the dependent variables are the proxies representing economic activity. The estimated coefficients of BDI in equations are statistically significant but not for all regimes. The Regime 2 parameter estimates are positive which is the indicator of a growth in economy, whereas the BDI has a positive impact on economic growth. If the BDI is the dependent variable in the equation, then estimated coefficients of output are both statistically significant and stable in all regimes but estimation parameters might vary when regime switches. The given MSI(2)-VAR(1) model was estimated for Estonia. The results indicate the significant level of asymmetries for the fluctuation cycles.

As the finding the authors strongly believe that the model might give an acceptable forecasting power under given assumptions for each regime on the level of prices of the entire domestically produced final goods and services in an given economy.

REFERENCES

[1] Alizadeh, M., Nomikos, K., The price-volume relationship in the sale and purchase market for dry bulk vessels, Maritime Policy and Management Vol. 30 (4), pp. 321-337, 2003

[2] Bakshi, G. Panayotov, G. and Skoulakis, G., The Baltic Dry Index as a Predictor of Global Stock Returns, Commodity Returns, and Global Economic Activity, 2010

[3] Batchelor, R., Bias in macroeconomic forecasts, International Journal of Forecasting, Vol. 23(2), pp. 189-203, 2007

[4] Batrinca, G., Cojanu, G., Surugiu, I., Application of autoregressive modelsfor forecasting the Baltic Exchange Dry Index. Constanta Maritime University Annals, Vol. 20(2), pp. 205-208, 2013

[5] Batrinca, G., Cojanu, G., The Causality Relationship between the Dry Bulk Marketand Worldwide Economic Growth. Ovidius University Annals, Economic Sciences Series, Vol (2), pp. 2-6, 2013

[6] Droumaguet, M., Markov-Switching Vector Autoregressive Models: Monte Carlo Experiment, Impulse Response Analysis, and Granger-Causal Analysis, European University Institute, pp. 70-121, 2012

[7] Duru O., Yoshida, S., Long Term Freight Market Index and Inferences, The Asian Journal of Shipping and Logistics, Vol. 27 (3), pp. 405-422, 2011

[8] Falahi, F., Causal relationship between energy consumption (EC) and GDP: A Markov-switching (MS) causality. Energy. Vol. 36(7): 4165–4170, 2011

[9] Goodwin, T., Business-Cycle Analysis with a Markov-Switching Model. Journal of Business & Economic Statistics, Vol. 11(3), pp. 331–339, 1993

[10] Hamilton, J., A new approach to the economic analysis of nonstationary time series and thebusiness cycle. Econometrica, 57(2), pp.357-384, 1989

[11] Ko B.W. - An application of dynamic factor model to dry Bulk Market - focusing on the analysis of synchronicity and idiosyncrasy in the sub-markets with different ship – size, online at http://mpra.ub.uni-muenchen.de/32572/MPRA Paper No. 32572, 2010

[12] Koskinen, M., Hilmola, O., Investment Cycles in the Newbuilding Market of Ice-Strengthened Oil Tankers. Maritime Economics and Logistics, Vol. 7(2), pp. 173-188, 2005

[13] Krolzig, H., Markov-Switching Vector Autoregressions: Modeling, Statistical Inference and Application to Business Cycle Analysis. Springer Verlag, pp.205-212, 1997

[14] Psaradakis Z., Morten O., Sola M., Markov-Switching causality and the Money-Output Relationship, Journal of Applied Econometrics, pp. 665-83, 2005

[15] Sengupta, R., Tam, Y. M., Recent movements in the Baltic Dry Index. NationalEconomic Trends, (Mar), 2009

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
S G E M 2 0 1 6

ECONOMIC DEVELOPMENT OF BREWING INDUSTRY IN THE CZECH REPUBLIC AND FUTURE PROSPECTS

Dr. Michal Kuběnka

Assoc. Prof. Renáta Myšková

Bc. Monika Felgrová

University of Pardubice, **Czech Republic**

ABSTRACT

Brewing industry is crucial for Czech consumers because the Czech Republic is the first place in the world with a consumption of 144 litres per capita per year. This industry is also important for the Czech economy as an appreciable source of income for the state budget in terms of tax collection. Specifically, it is revenue 4.61 billion CZK / year on excise duty and the estimated 11.75 billion in VAT in the year 2014. Over 93% of the beer production is produced by industrial breweries which total number is 47 in the country.

The article analyses the development of the brewing industry in the Czech Republic based on the latest available data from the accounting statements of 20 industrial breweries. All of the key factors are considered, especially, the factors affecting consumption and financial stability and prosperity of brewing industry. The analysis includes prediction of future developments in the susceptibility to bankruptcy through the bankruptcy model called Karas & Režňáková Index. Ability to create economic value added is then predicted using a financial model called IN05 Index with an updated threshold for credibility prediction. The analysis shows that the average ROE in the industry was 10.27% from 2012 to 2014 but the average increase of ROE between 2012 and 2014 was 0% and from 2013 to 2014 even a decrease of minus 0.10%. This implies that brewing industry is stagnating.

Models Karas & Režňáková Index and IN05 Index indicate more comprehensive view allowing to predict the future. 17 from 20 tested breweries should gain positive economic value added one year later with a probability of 74.35% according to IN05 Index. However two of them also show symptoms of distress according to Karas & Režňáková Index. One of them shows distress with probability 15.57% and the second one with a probability of 30.59%. Three remaining breweries with negative economic value added should be financially stable with a ROE below the boundaries of implied cost of equity. From this we can deduce the positive development of this industry for the future.

Keywords: C81, G33, F17, L66

INTRODUCTION

The Czech brewing industry takes pride in a long history reaching as far as the 11th century. Breweries were founded during the gradual establishment of towns on Czech territory. Brewing represented one of the most lucrative business fields. Consumption of this beverage became a part of the culture in the country. Beer consumption per capita is

the highest in the world and the income from collected sales tax is a significant item of revenue in the state budget.

However, as healthy lifestyle trends find their place in everyday lives of the Czechs, there has been a decline in alcohol consumption including beer. This fact could have a negative impact on the Czech brewing industry. On the other hand, beer belongs to the Czech traditional and beloved beverages and it can be assumed that its consumption will not decrease in a significant way.

The last comprehensive statistical data on the brewing industry sector are available for the year 2014. The beer consumption, including alcohol-free beer, was 16.3 million hectolitres in the year 2014 which is a decline of mere 0.2% compared to the year 2013. However, the domestic beer consumption has seen a continuing long-term downward trend and that is despite the fact that the Czech brewing industry was positively affected by a substantial decline of import from abroad in the year 2014. The import of private brands from Poland, in particular, was reduced.

Moreover, we could observe a slight decline in sales in restaurants, and, on the other hand, an increase of sales of cheaper beer brands in supermarkets.

The annual consumption in the year 2014 per capita was 144 litres. In recent years, there has been an increase of the share of beer sales in retail establishments (59 %) against restaurants (41 %) which can be explained by a lower purchase price of beer in the retail sector. [3]

Tourism, too, is significant for the brewing industry because Czech beer has a good reputation abroad and foreign tourists are attracted to the idea of tasting it. According to the Czech brewing and malting association (ČSPS), a tourist drinks two beers a day, on average, during his visit to the Czech Republic. [3]

Beer consumption is affected not only by the tradition and popularity of this product but also its price. The price comprises not only the cost of production and distribution but also taxation.

Alcoholic beverages are subject to the standard rate of VAT 21%, non-alcoholic beverages have the reduced rate of 15%. Excise duty is applied to selected products, including beer. The level of taxation is based on the amount of produced beer in hectolitres. The standard rate of excise duty in the Czech Republic is 32 CZK / hectolitre of beer. The reduction or increase of the above-mentioned rates will lead to a fall or rise of prices of products, which can substantially affect customer demand. Based on my own calculations and data from [13] and [14], taxation accounts for 21.70%[1] of the standard "11-degree beer" price and for 17.36% of the alcohol-free beer price (not subject to excise duty), at the assumed sale price of 1.5 EUR.

The excise tax on beer has brought the revenue of 4.5 bln CZK in the year 2013. The tax rate is set progressively depending on the annual production of the brewery in hectolitres, meaning that the production of smaller breweries is subject to lower tax (market distortion). However, over 90 % of the amount of tax revenue is paid at the

[1] Out of which 17.36% is VAT and 4.35% excise duty. The calculations were carried out using the assumed beer sale price of 1.5 EUR at 27 CZK/EUR exchange rate.

standard rate (32 CZK/hectolitre for breweries with the production over 200 thousand hectolitres per year) [1]

According to the [2] and [4], the decline in consumption per capita in the year 2014 was from 147 litres in 2013 to the already mentioned 144 litres in 2014, which is related to the collection of tax of 4.61 billion CZK. The authors have calculated that beer sold in restaurants at 1.5 EUR should also be linked to the VAT of 7.94 bln CZK (beer sales in restaurants represents 41 % of total beer consumption in the Czech Republic) and 3.81 billion CZK in the retail sector at the sale price of 0.5 EUR / a bottle of 0.5 l. Hypothetically, beer production and consumption in the year 2014 brought 16.36 bln CZK to the state budget.

The development of collected tax and beer consumption per capita2 in litres is shown in the following graph 1.

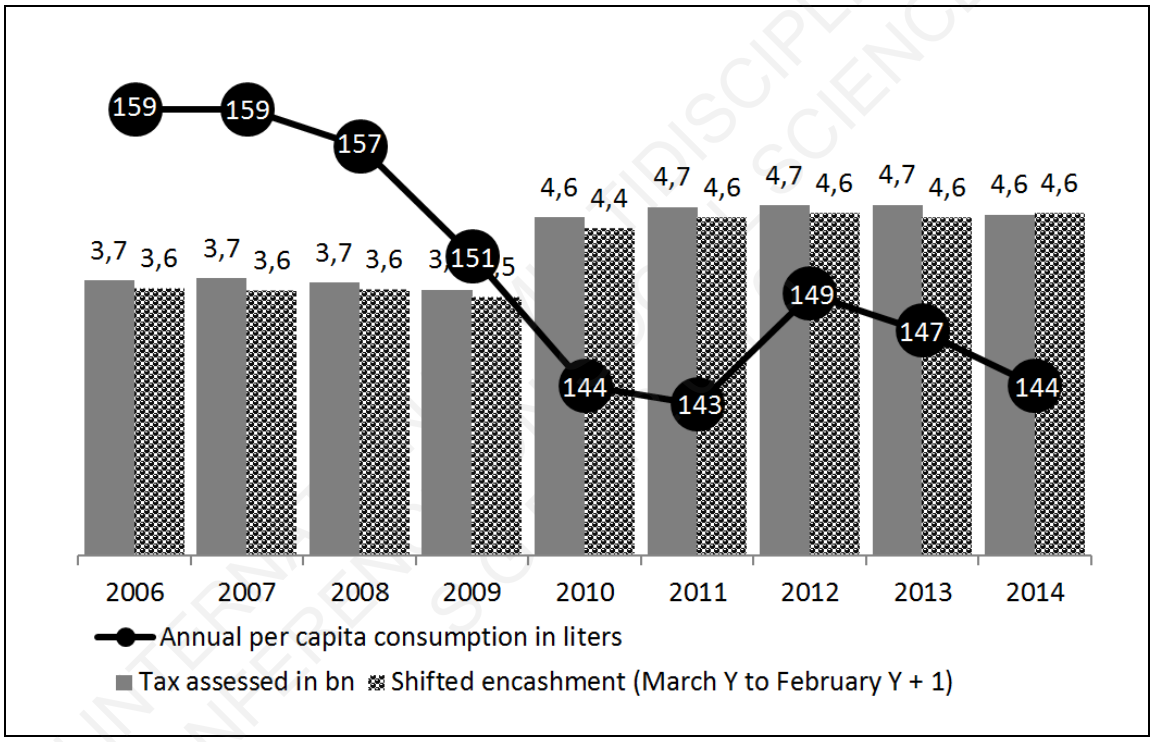


Figure 1 Charged excise duty in bln vs. annual beer consumption per capita in the years 2006 to 2014

Source: According to [2] and [4], own processed

IN05 INDEX FOR PROSPERITY PREDICTION

IN05 Index was selected for prediction of future development in terms of creditworthiness. The authors had a number of reasons for the selection. One of them was the fact that the index was created on a sample of Czech enterprises, whose accounting systems are subject to Czech laws and regulations, thus guaranteeing compatibility of the index and the tested enterprise. Another reason is an elaborate methodology, a large dataset of enterprises and, consequently, its high accuracy.

[2] Including women and children.

Another reason is the focus on processing industry which includes brewing industry. The last chief reason is the fact that the authors are among the few who clearly state that the model predicts creditworthiness on the basis of economic value added.

Originally authors of model [9] made IN01 Index for industrial firms. For that purpose the authors analysed financial statements of 1,915 industrial companies. Tested dataset included 583 companies with positive economic value added, 503 bankruptcy companies and 829 of others. Index value border for classifying a company as prosperous was 1.77. Companies with IN01 Index valae lower than 0.75 are classified as bankruptcy. Among these values is a gray zone interval (0.75; 1.77) where this model is not able to express any definite conclusion.

$$IN01 = 0.13\ X_1 + 0.04\ X_2 + 3.92\ X_3 + 0.21\ X_4 + 0.09\ X_5 \quad (1)$$

Where X1 means total assets / liabilities, X2 = earnings before interest and taxes / interest paid, X3 = earnings before interest and taxes / total assets, X4 = revenues / total assets and X5 = current assets / current liabilities.

When IN01 Index reaches a value higher than 1.77 the company schould have a positive EVA in the following year with a probability of 67%. When IN01 Index value is smaller than 0.75, the company should get into a financial distress during the next year with a probability of 86%. The authors revisited this model only 4 years later. Updated version was named IN05 Index.

The authors [11] stated that IN05 Index "was created and tested on data from mainly medium and large industrial firms, so for these firms it will have the best explanatory power." It corresponds with the goal of this research focused on industrial brewery.

IN05 Index [10] has analogical construction. Still it is a combination of weights and ratios.

$$IN05 = 0.13\ X_1 + 0.04\ X_2 + 3.97\ X_3 + 0.21\ X_4 + 0.09\ X_5 \quad (2)$$

IN05 Index has even the same components as IN01 Index. Little change from 3.92 to 3.97 is in a third weight value. The main difference is in the changed borders. The IN05 Index value lower than 0.90 means prediction of company distress and company reaching value more than 1.60 is classified as prosperous with expected positive economic value added. According to [7] is better to use threshold 0.7 in order to perform better prediction of Economic Value Added. In consequence this model is able to predict positive economic value added with a probability of 74.35%.

In comparing to IN05 Index for distress prediction currently exist newer models even with higher predictive power of distress. That is why also Karas & Režňáková Index is used.

KARAS & REŽŇÁKOVÁ INDEX FOR DISTRESS PREDICTION

This is probably the newest model for bankruptcy assessment of Czech companies operating in manufacturing industry. Based on author´s knowledge all known bankruptcy models use four ratios at minimum, whereas Karas & Režňáková Index use

only two. Model includes three variables. The first X_1 means value of total assets in EUR, X_2 expresses assets turnover and the last X_3 is the ratio of quick assets and sales.

The authors [6] state that the model construction is based on the connection of linear discrimination analysis and the Box-Cox transformation variables. Model structure is following:

$$Index = 1{,}841 \cdot \frac{(X_1 + 16783{,}91)^{0{,}02941} - 1}{0{,}02941} + 1{,}112 \cdot \frac{(X_2 + 1)^{-0{,}35627} - 1}{0{,}35627} + 13{,}55 \cdot \frac{(X_3 + 1{,}12)^{-2{,}97955} - 1}{2{,}97955} - 17{,}319 \quad (3)$$

where X_1 is value of total assets (EUR), X_2 turnover of total assets, X_3 quick assets a sales ratio

The threshold is determined by the value 0. Then the companies with value more than 0 should be financially healthy and companies under 0 should go bankrupt in the next year with high probability.

BREWING INDUSTRY IN THE CZECH REPUBLIC

According to [1] the vast majority (93.37 %) of the amount of excise duty from beer in the year 2014 was accounted for by breweries with production over 200 000 hl per year. Breweries with the production over 200 000 hl are referred to as “industrial breweries”.

There were 47 industrial breweries and 282 minibreweries and microbreweries in the Czech Republic by 1st May 2015. [12]

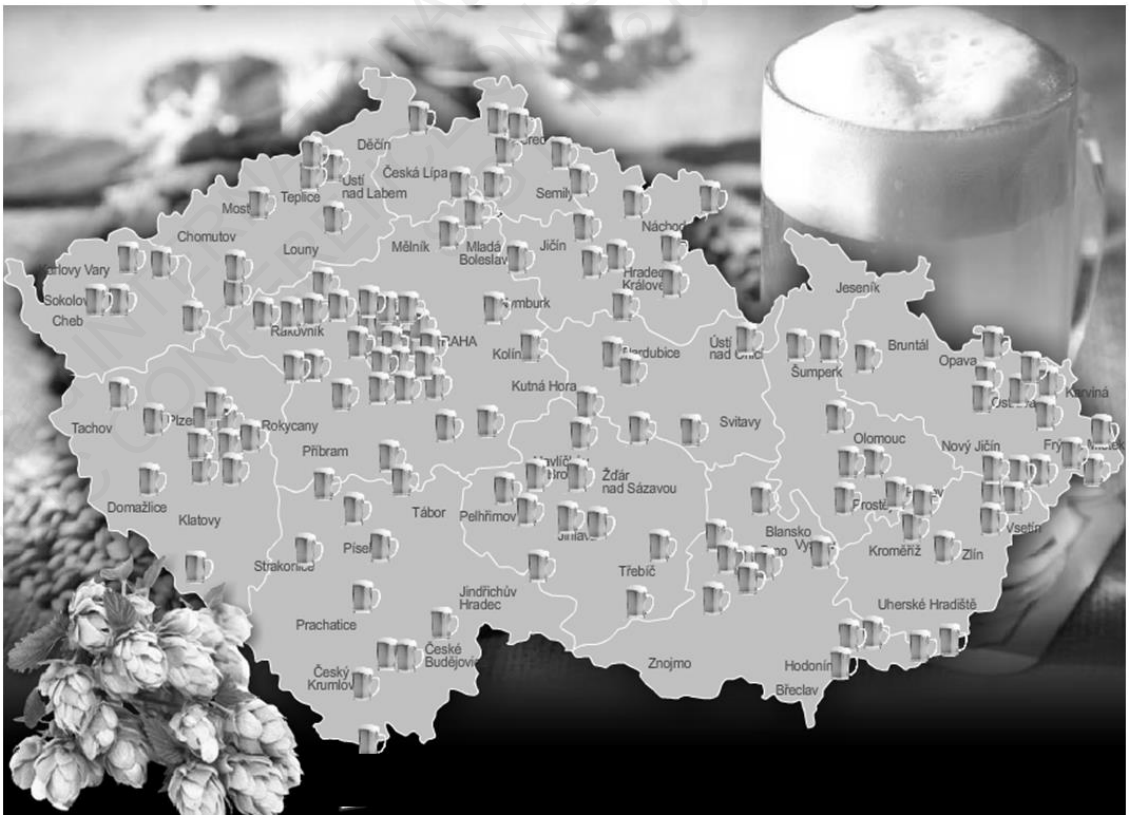


Figure 2 Density of breweries in the Czech Republic
Source: [5]

The sample covers 42% of industrial breweries, that is, the total of 20 breweries out of 47 that produce over 93 % of all beer in the Czech Republic. In this context, the sample covers probably more than one third of all beer production in the Czech Republic. We can assume that such a sample is sufficiently representative and it can represent the development in the whole sector.

Table 1 Tested breweries, achieved return on equity, estimate of future

No.	Brewery	Evolution of prosperity			Prediction of future	
		ROE*$_{2012}$	ROE$_{2013}$	ROE$_{2014}$	Bankrupt?**	EVA?***
1.	Pivovar v Rakovníku, Inc.	-19.34%	-6.71%	-2.00%	1.34	0.71
2.	Bohemia Regent, Inc.	4.37%	8.28%	7.48%	0.41	0.72
3.	Pivovar v Poličce, Inc.	7.34%	12.81%	18.07%	0.76	1.88
4.	Pivovar Uherský Brod, Inc.	10.40%	9.43%	5.46%	**-0.40/YES**	1.54
5.	Pivovar Nymburk, Ltd.	2.30%	10.00%	9.20%	0.03	1.18
6.	Pivovar Litovel, Inc.	-0.30%	0.39%	2.59%	2.63	1.61
7.	Budějovický Budvar, n.c.	3.70%	5.84%	5.51%	5.21	2.71
8.	Pivovar Nová Paka Inc.	-0.67%	0.20%	10.60%	0.48	1.48
9.	Pivovar Jihlava, Inc.	7.24%	5.75%	6.09%	**-0.05/YES**	1.35
10.	Dudák - Strakonice, Inc.	-2.60%	-2.99%	-7.83%	0.64	0.95
11.	Pivovar Černá Hora, Inc.	3.07%	5.78%	5.92%	1.49	0.70
12.	Chodovar, Ltd.	-4.04%	-3.75%	9.97%	1.01	1.35
13.	Bernard, Inc.	12.57%	14.99%	13.94%	2.04	1.64
14.	Pivovar Klášter, Inc.	15.97%	17.88%	11.74%	0.51	1.43
15.	Pivovar HOLBA, Inc.	9.72%	6.18%	0.17%	1.60	1.09
16.	Krakonoš, Ltd.	8.48%	11.50%	9.65%	0.22	1.98
17.	Pardubický pivovar, Inc.	-4.02%	-0.03%	-1.75%	0.68	**0.56/NO**
18.	Pivovar Zubr, Inc.	3.69%	4.06%	-2.18%	1.66	**0.27/NO**
19.	Pivovar Svijany, Inc.	95.09%	44.60%	29.86%	2.79	2.59
20.	Pivovar Chotěboř, Ltd.	-17.87%	197.79%	6.38%	1.18	0.77
21.	Average	6.75%	17.10%	6.94%	1.21	1.33
22.	Average without outliers****	3.21%	5.53%	5.70%	1.12	1.29
23.	**Industry of beverage production**	**13.59%**	**8.34%**	**8.72%**	**x**	**x**

Notice: *return on equity based on historical data, **prediction of bankrupt based on Karas & Režňáková Index, ***prediction of economic value added based on IN05 index with modified threshold, ****average without last two companies which include outliers
Source: own

Table 1 shows that 3 companies out of 20 had a negative value of the indicator return on equity (ROE) over the full time of the last 3 years. One of them had a positive development of ROE, one had a negative development of ROE and one had a fluctuating development. Two enterprises (no. 19 & no. 20) from the analysed sample show outliers. Average of ROE is 3.21% in 2012, 5.53% in 2013, 5.70% in 2014. That shows an increasing trend of the average ROE with the average annual growth of 1.24%.

Susceptibility of enterprises to insolvency in the future was tested by Karas & Režňáková Index. The model classified all enterprises as financially healthy, apart from the enterprise no. 4 which shows signs of insolvency with the probability of bankruptcy

of 30.59% and the enterprise no. 9 with a negative value of the index as well which signifies 15.57% probability of bankruptcy.

The future prosperity of enterprises was assessed through the IN05 Index. This model is able to predict the economic added value with the probability of 74.35%. 187 enterprises in the sample can be expected to produce economic added value in the following year. There are 47 industrial enterprises in the Czech Republic which produce 93% of revenue. 20 out of those 47 enterprises, that is 42.55%, were tested. The enterprises showed a relatively good state of financial health. A risk of bankruptcy was detected in only two enterprises (i.e. 10%) but the probability of bankruptcy was low. On the other hand, 90% of the enterprises in the sample were classified by the IN05 model as enterprises with the prediction of prosperity at the level of positive economic value added.

CONCLUSION

The objective of this research was to analyse the economic situation of the brewing sector in the Czech Republic. An analysis of the ROE development over the last 3 years was carried out to this end. Financial statements from the year 2014 and the previous years are accessible and public. A sample of 20 industrial breweries and their accounting data from the years 2012, 2013, and 2014 was used for the purpose of the analysis. The industrial breweries generate 93% of revenue from the beer sales. The sample, therefore, can be assumed to represent 39.58% of the whole market.

The analysis has shown a positive trend in the development of ROE, with the average annual growth of 1.24% (with outliers eliminated). That can be regarded as a sign of good health of the sector. Karas & Režňáková Index was applied to determine the susceptibility to bankruptcy. Only 10% of enterprises show signs of insolvency, according to the model, but with a relatively low probability. Prediction of the prosperity of the sector in the future was made on the basis of the IN05 model applied to a selected sample of sector representatives. 90% of enterprises qualified as profitable, according to the model, with the probability of 74.35%. All the applied methods have shown that the analysed enterprises are in a good financial health. Because the sample is highly representative, the analysis suggests that the whole brewing industry sector in the Czech Republic enjoys a good financial health.

ACKNOWLEDGMENTS

This contribution was made with the financial support of SGS 2016.

REFERENCES

[1] CETA – The Center of Economic and Market Analysis: IPPS – Institut pro politiku a společnost. Zdanění spotřeby v České republice, Czech Republic, 2015, http://www.politikaspolecnost.cz/wp-content/uploads /2015/03/Zdan%C4%9Bn%C3%AD-spot%C5%99eby-v-%C4%8Cesk%C3%A9republi ce.pdf

[2] Customs Administration of the Czech Republic. Czech Republic, 2014, https://www.celnisprava.cz/cz/dane/statistiky/ Pivo_inkaso/ 2014_pivo_vymer_SPD.pdf

[3] Czech Beer and Malt Association (Český svaz pivovarů a sladoven). The report on the state of Czech brewing and malting 2014, Czech Republic, 2014, http://www.ceske-pivo.cz/pro-media?page=1

[4] Czech Statistical Office. Czech Republic, 2016, https://www.czso.cz/

[5] Daily Newspaper Blesk. Big beer map. Czech Republic, 2015, http://www.blesk.cz/ clanek/infografiky /155059/pivni-mapa.html

[6] Karas, M., Režňáková, M., Possibilities fot he Application of a Bankruptcy Prediction Model for Measuring Credit Risk of a Company, Hradec Economic Days 2013, Czech Republic, pp 435-442, 2016.

[7] Kuběnka, M., Bolečková, A., Determination and Analysis of Actual IN05 Accuracy in Prediction of Creditworthiness, European Financial Systems 2015, Czech Republic, pp 335-342, 2015.

[8] MagnusWeb Database of Bisnode company, Database of economic subjects. Czech Republic, 2016, https://magnusweb.bisnode.cz/

[9] Neumaierová, I., Neumaier, I., Výkonnost a tržní hodnota firmy, Czech Republic, 2002.

[10] Neumaierová, I., Neumaier, I., Index IN05, Evropské finanční systémy, Czech Republic, pp 143-148, 2005.

[11] Neumaierová, I., Neumaier, I., Proč se ujal index IN a nikoli pyramidový systém ukazatelů INFA, Ekonomika a management, Czech Republic, vol. 2(4), pp 1-10, 2008.

[12] Portal Přátelé piva, Czech Republic, 2015, http://www.pratelepiva.cz/pivovary/

[13] The Act on Excise Taxes no. 353/2003 Coll., §85.

[14] The Act on Value Added Tax no. 235/2004 Coll.

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS

EFFECTS OF INTAGIBLE COMPONENTS ON THE CONSUMER BEHAVIOR: EVIDENCES FROM ANDALUCÍA

Dr. Dante Di Matteo, PhD[1]

[1] University "G. d'Annunzio", Department of Economics, Viale Pindaro 42, Pescara, **Italy**

ABSTRACT

In a constantly changing environment like tourism, a key feature of the offer concerns its intangible component. It happens quite frequently – nowadays – that the choice to visit or return to a specific location can be consistently affected by acceptance perception expressed by the consumer with regard to the intangible aspects that surround the context and the structural endowment held by the chosen location. The concept of intangible component is firmly associated to a multisensory-type experience, based on some simple evidences: when it's not possible to categorize a tourist flow depending on some tangible determinants of the offer, whether for morphological, architectural, cultural-historical or religious, it will be the "experiential" variant engendered by those who provide a service or sell a product to give more weight to each tourism component and explain the basis for an overall assessment of the experienced elements. This is the case of the "Feria de Abril" – a civil-type celebration that takes place in the town of Seville in Andalucía between the first and second week of April – it has grown exponentially in terms of flows and business volumes during the last decade, reaching the quota of about one million visitors in 2015 and generating direct and induced effects on the economy of the place, up to cover in just one week about the 3% of the annual Seville GDP. On the basis of such premises, using a sample survey conducted during the event in 2015, the paper aims to investigate about the consumer buying behavior, identifying any correlations between acceptance indicators and success factors, and then building different multiple regression models between the variables useful to understand whether – and in what way – the experiential component influences the purchasing habits of the visitor in this kind of events.

Keywords: tourism perception, intangibility, experiential, tourist purchasing behavior

INTRODUCTION

In order to investigate about the tourist consumer behavior during experiential events, it's necessary to provide a brief description of a new way of thinking, which I thought to define as "Diffused Experiential Tourism" (DET approach): a real definition of this concept is currently not available in any type of tourism literature, even less if we take as reference the managerial branch of tourism that should aim to provide the correct interpretation key of the phenomena of spontaneous people aggregation and – therefore – to provide methodological tools useful to the planners for the proper management of an event. This kind of events could be better defined as a communion of needs and motivations that drives people from different places to meet and experience [1] together – sometimes spontaneously, sometimes in organized manner – a specific shared place or, more commonly, a popular celebration. The idea to build a systemic approach based on an event [2] born from the observation of a similar approach designed to measure the

direct and indirect impacts related to an event in Hungary (Hungarian Rural Tourism Days), on the basis of the advertising and promotion of the shadow areas – localized in the external and marginal rural areas of the country – in order to raise and channel potential users in a different destination compared to the most popular ones, more advertised and stored on the catalogs by tourism agencies. I imagined a system that took into account three aspects: tourism, experiential and a "diffused" nuance of the event. The meaning of this definition lies in the same definition of the three terms, since the Feria de Abril – in its forms and features – is definitely a tourism event, perhaps not with an international character as it could be the "Semana Santa", but certainly regional and national; the experiential aspect emerges since this kind of event – impossible to be classified under the branch of religious tourism, or the hiking tourism, rather than nature or rural tourism – lies undoubtedly in that segment which now begins to assume importance within the tourism contours, the experiential one. Today, the experiential aspect resides in every kind of trip; a visit to a particular destination brings in any case the search for an experience: *gastronomic-typed* [3] (accompanied by flavours and fragrances), *sensory-typed* (like the naturalistic excursions to places or landscapes), *wellness-typed* (such as overnight-stays to structures reconverted to wellness center for the body care) but – in any case – behind the choice of traveling to a specific destination there is the essential link between the research of an experience and the choice of the place; in the last, for what concerns the "diffused" aspect of the event, it can be attributed to the nature of the event organization, from a structural and geolocalized point of view, which will follow a more detailed illustration in the next paragraph.

FERIA DE ABRIL: DESCRIPTION OF THE CASE CONTEXT

The *Feria de Abril* is nowadays one of the most popular and traditional festivals in the Spanish calendar and – especially – in the Andalucian one, it was originally founded as a cattle fair (purely commercial), later adapted and transformed into a ludic fair. Regarding its "founding fathers", the *Feria* was instituted for the first time in 1864 by a Basque and a Catalan and the main objective of the two entrepreneurs was simply to increase their business through the purchase of livestock, later understanding to have to adapt the fair following the traditional spirit of the place and redraw the *Feria* into a festive celebration, while maintaining – in part – the initial leitmotif. The event lasts a week (usually in the second week after the end of Semana Santa in Seville) and provides the installation of a series of "Casetas" (fair houses) in a special fairground, which become like the second home of the Seville people and its surroundings, in order to stay overnight for the whole week – or less – during the celebrations. The entrance to the *Feria* takes place through the main entrance, which can vary from year to year (by reproducing in sequence the most famous buildings or monuments in Seville) and the official moment that marks the beginning of the celebrations is the simultaneous illumination of millions of lamps and lights installed both in the perimeter and on the main entrance. The event is consumed in two ways: inside the exhibition space the various "partners" – holders of the casetas – invite friends and relatives at their stations, to celebrate the week-long festival with folk dances (like the *Sevillana*), tasting typical products (*tapas* of all kinds, *manzanilla*, etc.), singing and entertaining; the 80% of the *casetas* is private or managed by small companies (public *casetas* generally correspond to those of political parties and the various districts of Seville and – usually – them are big enough to be able to host even who don't have its own *caseta*, or those without an invitation). The inside fair can be accessed only by invitation or knowledge of the

"member" and for these reasons – outside the fair – it's possible to witness a parallel celebration, the public one, where the access it's allowed to anyone, near which there are typical stands, dining points, fun attractions for adults and children (the so called *Strada de el Infierno*). The *casetas* are generally built on a base of metal tubes and have wooden floors and walls covered with tarps – almost forming something like gazebos – and the space that hosts the casetas installations in Seville is located just outside the city center (south of *Los Remedios* district, facing the *Maria Luisa* park), for an overall area of 1.500 meters in length and 700 in width, forming for a week a kind of ephemeral parallel city. During the celebrations people are used to wear typical clothing of Andalucian tradition (men wear traditional rural clothing while women wear *Traje*, a typical flamenco suit, or gypsy dresses) and it's also possible to witness the bullfight spectacle or the horses walk (which anyone can take part). In the last edition, the event took place in the week from 21 to 27 April 2015, and because of strong demand for new *casetas*, the organizers are currently planning for the future to change the venue for the *Feria de Abril* in Seville. Some estimates [4] reveal that the real economic impact on the city generated by the fair is about 675 million Euros (about 3% of the annual Seville GDP), 36.7 million Euros of which for public and private companies organizing the event, compared to direct revenues arising from visitors equal to 158.5 million Euros. In addition to these, there are 480 million Euros of indirect and induced expenditures made by consumers (clothes, accessories, hotel reservations, restaurants), the 10% of which falls in the hospitality industry and 40% in the sales of textiles. It is also estimated a big consumption of typical Andalucian dishes (*tortilla, pimiento frito, gambas, jamon, manzanilla*) and about one million liters of beer during the week, provided by the official sponsor Cruzcampo, while the expenditure for clothing and accessories – instead – reaches an overall amount of 77 million Euros.

MATHERIALS AND METHODS

The purpose of the paper is to investigate about how and in what measure the intangible aspects of experiential components could influence the tourist consumer behavior and in order to individuate possible relationships between variables it was planned to submit a survey to participants, specifying some limitations: they must have spent at least one night in an accommodation facility in the city or province of Seville and – on the basis of the data regarding the expenditure for clothes and accessories – they mush have bought at least an item (dresses, suits, complete outfits, shoes, hats, accessories of any type and more) in order to participate to the event. The variables deriving from the survey (in scale or ordinal misure) and the descriptive statistics [5] are summarized as follows in the table.

Table 1 – Summary of variables and descriptive statistics (Sample size, n=88).

Abbreviation Code	Description of Variable	Mean	Std. deviation
EOS	Overall satisfaction about the event success	16.50	4.611
BEF	Efficiency and functioning of web site for bookings	12.68	4.255
FFP	Functioning and placement of the fairgrounds	9.14	5.036
WPE	Quality in welcoming and perceived experiential	15.45	4.821
CVP	Web communication, visibility and promotion of the event	11.27	4.354
EEA	Expenditure on accommodation and its availability	43.4	22.254
CAP	Purchasing in clothing and accessories	38.3	28.387
FBS	Purchasing and satisfaction food and beverage products	21.7	10.585

The first step after the determining of initial descriptive statistics was the creation of the correlation matrix between variables. In particular, it was established a bivariate Pearson correlation with a two-tailed test and the criteria of interpretation will follow the Cohen's standards. In the next table are displayed the results of correlation analysis.

Table 2 – Summary of Pearson correlation analysis (two-tailed test).

	EOS	BEF	FFP	WPE	CVP	EEA	CAP	FBS
EOS	1							
BEF	-,327** ,002	1						
FFP	-,294** ,005	-,019 ,858	1					
WPE	,683** ,000	-,287** ,007	-,232* ,030	1				
CVP	,220* ,040	-,003 ,980	-,239* ,025	,226* ,034	1			
EEA	,550** ,000	-,650** ,000	-,129 ,230	,546** ,000	,084 ,437	1		
CAP	,321** ,002	-,066 ,543	-,162 ,132	,255* ,016	,290** ,006	,030 ,778	1	
FBS	,547** ,000	-,468** ,000	-,181 ,092	,544** ,000	,147 ,172	,694** ,000	,115 ,286	1

**. The correlation is significant at the level 0.01 (two-tailed)
*. The correlation is significant at the level 0.05 (two-tailed)

The variables correlation represents a brief introduction to the analysis of the consumer behavior and permits to individuate the principal positive and negative relationships both between performance indicators and success factors and between each other. The second step in the analysis involved the test of each scale variable with the ordinal ones, through the multiple regression analysis: three different models have been estimated in order to understand how the purchasing behavior can be modified considering the intangible elements. The first model considers the expenditure for accommodation (EEA) as dependent variable, and is summarized as follows.

Table 3 – Multiple regression model with EEA as dependent variable.

$$EEA_i = \beta_0 + CVP_{x1i} + BEF_{x2i} + FFP_{x3i} + WPE_{x4i} + EOS_{x5i} + \varepsilon_i \quad (1)$$

R= ,766; Adj. R^2= ,561; F= 23,258; df= 5; ρ= ,000; DW= 1,876

	β (std)	*t*	*ρ*	*low. lim. conf.*	*upp. lim. conf.*
Constant		3,902	,000	21,978	67,698
CVP	-,028	-,370	,713	-,900	,618
BEF	-,508	-6,665	,000	-3,453	-1,865
FFP	-,025	-,328	,774	-,780	,559
WPE	,262	2,664	,009	,306	2,112
EOS	,204	2,010	,048	,010	1,959

As it will be largely discussed in the results and discussion paragraph, it's easily possible to observe how this model is the one which returns the highest explained variance (R=,766) with two independent variables (WPE, β=,262 and ρ=,009; EOS,

β=,204 and ρ=,048) which could positively influence the consumer behavior regarding the expenditure for accommodation and its availability. The second model took into account the variable related to the purchasing and satisfaction of food and beverage products (FBS) as dependent variable. The results are summarized as follows.

Table 4 – Multiple regression model with FBS as dependent variable.

$$FBS_i = \beta_0 + CVP_{x1i} + BEF_{x2i} + FFP_{x3i} + WPE_{x4i} + EOS_{x5i} + \varepsilon_i \quad (2)$$

R= ,662; Adj. R^2= ,404; F= 12,782; df= 5; ρ= ,000; DW= 1,804

	β (std)	*t*	*ρ*	*low. lim. conf.*	*upp. lim. conf.*
Constant		2,116	,037	,804	26,157
CVP	,020	,227	,821	-,373	,469
BEF	-,312	-3,503	,001	-1,215	-,335
FFP	-,048	-,541	,590	-,472	,270
WPE	,276	2,406	,018	,105	1,106
EOS	,239	2,020	,047	,008	1,089

Following the (1), this model (2) – based on FBS as dependent variable and other ordinal variables as predictors – is a little smaller in terms of explained variance (R=,662) and it has lower significance in terms of adjusted R^2. The last model, instead, involves the variable concerning the purchase in clothes and accessories (CAP) as dependent variable and the previous ones, the same as predictors. The results are summarized in the following table.

Table 5 – Multiple regression model with CAP as dependent variable.

$$CAP_i = \beta_0 + CVP_{x1i} + BEF_{x2i} + FFP_{x3i} + WPE_{x4i} + EOS_{x5i} + \varepsilon_i \quad (3)$$

R= ,394; Adj. R^2= ,104; F= 3,022; df= 5; ρ= ,015; DW= 2,000

	β (std)	*t*	*ρ*	*low. lim. conf.*	*upp. lim. conf.*
Constant		-,347	,729	-48,937	34,395
CVP	,220	2,066	,042	,053	2,819
BEF	,026	,239	,812	-1,273	1,620
FFP	-,027	-,252	,802	-1,375	1,067
WPE	,038	,268	,789	-1,424	1,867
EOS	,247	1,706	,092	-,253	3,299

RESULTS AND DISCUSSION

From the correlation analysis – according to the Cohen's standards for results interpretation – some evidences are quickly highlighted: the overall satisfaction about the event (EOS) from the consumers point of view is strongly and positively correlated with the quality [6] in welcoming and perceived experiential (WPE, r=,683), the expenditure for accommodation (EEA, r=,550) and the expenditure for food and beverage products (FBS, r=,547); it is also positively correlated – but with less significance – with the purchasing in clothes and accessories (CAP, r=,331) and visibility, promotion and web communication (CVP, r=,220), while the variables that generates a negative correlations – with less significance – with the global visitors satisfactions are the ones related to the efficiency and functioning of the web site for booking (BEF, r=-,327) and the functioning and the placement of the fairground (FFP, r=-,294). Furthermore, the problem of booking by website (BEF) also affects negatively the expenditure for accommodation (EEA, r=-,650) and the consumption of food and

beverage products (FBS, r=-,468) with a consistent significance. The quality in welcoming and perceived experiential by tourist (WPE) is the variable that presents the highest correlation values: in addiction to the previous one, also the expenditure for accommodation (EEA, r=,546) and the purchasing of food and beverage (FBS, r=,544) show positive correlations with WPE. The best positive correlation value is shown between the expenditure for accommodation and the purchasing of food and beverage products (r=,694), meaning that the consumers who are used to spend a lot in accommodation are the same that record the highest values in enogastronomic products purchasing. Among the other significant negative correlations, it can be highlighted the ones between the functioning of the fairground (FFP) and the quality in perceived experiential (WPE, r=-,232) as like as the web communication, visibility and promotion of the event (CVP, r=-,239). This first step – the Pearson correlation analysis – permits to introduce a primary framework in which are highlighted the positive and negative correlations between the variables token into account but it's not enough to evaluate estimations for the scalar vector. For these reasons, it was necessary to test singularly the three scalar vectors compared to the ordinal ones in three different models [7], in order to provide a misure of the influence that a variation of the intangible components could generate on the performance indicator variables. More in detail, in the (1) it was considered one of the most common parameter for the tourist performance evaluations – the expenditure for accommodation (EEA) – as dependent variable and the success indicators as predictors: reporting the results in the Table 3, we can immediately notice that this model fits quite well with an explained variance of about 76% and an adjusted R^2 of ,561; in particular, there are two variables (WPE and EOS) which – if moved forward – could influence positively the expenditure for accommodation. In other terms, a further increase in the welcoming an perceived experiential rate and in the overall satisfaction in the consumers mind, will probably generate an increase in the research and expenditure for a comfortably accommodation, up to a maximum of about 67 Euros (the average calculated on the sample is now about 43 Euros); from the other side, the parameter which could influence negatively the consumer behavior concerning accommodation is the not well-efficient functioning of the websites for booking, this probably means that the online system for reservations and information about accommodation availability should be implemented. In the (2) it was tested the variable concerning the purchasing of enogastronomic products (FBS) as dependent and the success factors as predictors: this model fits quite well – but less than the (1), with a variance of 62% and an adjusted R^2 of ,404 – and confirms almost totally the assumptions of the (1); in this case, we can similarly affirm that an increase in the quality of welcoming and in the overall satisfaction probably will induce the consumers to spend higher quantity of money by purchasing food and beverage products (up to 26 Euros, compared to the current average of 21 Euros based on the sample) while, a further decrease in the rate of functioning and efficiency of the booking system could influence negatively the consumers behavior concerning the purchasing of food and beverage products. In the last model (3) the dependent variable was the one related to the purchase of clothing and accessories (CAP) while the predictors were the same of previous models. In this case we can observe how the explained variance is not very significant (R=,394) and also the adjusted R^2 is very low at ,104 level; in this way, it's possible to affirm that this variable cannot be influenced a lot from a variation of the predictors. In other terms, the amount of money destined to the purchase of clothes and accessories probably will not change if the overall satisfaction or the functioning of

website for booking or – again – the perceived welcoming have an increase or a decrease, since the confidence intervals reveal lower values compared to the average of the sample (meaning that there is impracticability).

CONCLUSION

In order to provide a definition of *experiential tourism*, it could be described as the ability of the host to confer an incremental level of attractiveness to the product/service – not by considering it in its absolute value – on the basis of the capacity to allow the maximum usability of a service or a product, as it was conceived by those who have planned the *experiential package*. In other words, this means that a tourism product which could be very beautiful in its nature (such as a beach or a mountain chain, rather than a tourism complementary component, just like a typical dish [8] of the destination) takes a quite clear and defined perceived value by the visitors point of view (the beach can be clean or dirty, the food can be more or less tasty), but it's the experiential perceived by those who provide the service/product that will contributes to create the conditions for an extended evaluation of all the elements that build up a tourist destination. The case of the *Feria de Abril* in Seville bring us some evidences that seem to confirm the thesis about the importance of experiential as key component for the attractiveness of the destination: the quality in received welcoming, the overall satisfaction about the event, the liking of typical dishes deriving from the Andalucian tradition and culture, the atmosphere of empathy and joyfulness coming from the celebration week [9] are factors that influence a lot the consumer purchasing behavior [10]. From the results of the analysis realized on a sample of eighty-eight tourists which have spent at least one night in Seville and surroundings, it is possible to affirm that an increase in the general level of satisfaction about intangible components of the offer would probably generate an increase in the amount of money destined to food and beverage products and accommodation. Nevertheless, there are still some problems that emerge from the analysis: the overabundance of tourists (more than a million) which have participated to the event along the week in the 2015 edition determines the problem of carrying capacity overcoming [11] of the fairgrounds and this represent a negative factor for visitors, which need a larger space to enjoy the celebrations; another negative influence on the event success is represented by the low functioning of he websites for information and booking research, this means that there is a no clear online display for the Feria de Abril and therefore some improvements should be designed to the booking circuits which manage the visitors reservations. In conclusion, we can affirm that the experiential key [12] is surely one of the best attractors for a destination and it is strictly connected to any kind of tourism – religious, sun and sea, mountain, hiking, wellness, sport etc. – and the most efficient effects can be found in the ability of the hosting organizers to transform a intangible resource in a warrantee and a loyalty for the consumers, which are strongly influenced by the perceived atmosphere.

REFERENCES

[1] Prebensen N.K., Woo E., Chen J.S., Uysal M., Motivation and Involvement as Antecedents of the Perceived Value of the Destination Experience, Journal of Travel Research, n. 52, SAGE Publications, London, 2012, pp. 253-264.

[2] Panyik E. Costa C., Rátz T., Implementing integrated rural tourism: An event-based approach, Tourism Management, n. 32, Elsevier, Amsterdam, 2011, pp. 1352-1363.

[3] Richards G., Food and the tourism experience: major findings and policy orientations, in Dodd, D. (ed.) Food and the Tourism Experience, OECD, Paris, 2012.

[4] Empresa Pública para la Gestión del Turismo y del Deporte de Andalucía, Indicadores de Satisfacción Turística en Andalucía. Demanda Turística de Andalucía, Consejería de Turismo y Deporte, Junta de Andalucía, Sevilla, 2015.

[5] Woolridge J.M., Introductory Econometrics. A modern approach, South-Western, Cengage Learning, USA, 2012.

[6] Kim K, Uysal M., Sirgy M.J., How does tourism in a community impact quality of life of community residents?, Tourism Management, n. 36, Elsevier, Amsterdam, 2013, pp. 527-540.

[7] Ng P.T., Lew A.A., Using Quantile Regression to Understand Visitor Spending, Journal of Travel Research, n. 51, SAGE Publications, London, 2012.

[8] Chen A., Peng N., Hung K., Chef image's influence on tourists' dining experiences, Annals of Tourism Research, n. 56, Elsevier, Amsterdam, 2016, pp. 154-157.

[9] Sung Y., Su C., Chang W., The quality and value of Hualien's Amis Harvest Festival, Annals of Tourism Research, n. 56, Elsevier, Amsterdam, 2016, pp. 128-131

[10] Ramkissoon H., Uysal M., The effects of perceived authenticity, information search behaviour, motivation and destination imagery on cultural behavioural intentions of tourists, Current Issues in Tourism, Vol.14 n.6, Routledge Taylor & Francis Group, London, pp. 537-563.

[11] Madanoglu M., Ozdemir O., Is more better? The relationship between meeting space capacity and hotel operating performance, Tourism Management, n. 52, Elsevier, Amsterdam, 2016, pp. 74-81.

[12] Davis A., Experiential places or places of experience? Place identity and place attachment as mechanisms for creating festival environment, Tourism Management, n. 55, Elsevier, Amsterdam, 2016, pp. 49-61.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

ENERGY EFFICIENCY ENHANCEMENT AS A PRIORITY DIRECTION OF THE RUSSIAN ECONOMY'S INNOVATIVE MODERNIZATION UNDER THE TRANSITION TO A 6 TECHNOLOGICAL MODE

Prof. Melnik A.N.,

Assoc. Prof. Lukishina L.V.

Kazan Federal University, **Russian Federation**

ABSTRACT

The matter of the Russian economy's transition to an innovative way of development has over many years been given special consideration. The measures undertaken have definitely made a considerable contribution to the innovative activity's development in the Russian economy's various sectors. The process of the national innovative system's goal-seeking formation has been launched because of them. However, a range of problems unresolved still constrain the transition of Russia to a trajectory of sustainable innovative development. In particular, the discussions on choosing certain priorities of development which could set a powerful impetus for innovative modernization of the domestic economy and could facilitate the provision of its competitiveness in the context of formation of the new technological mode are being held up to the present. The place, occupied by technological modes in the national economies' development of different countries has been identified for justification of one's viewpoint on the problem under consideration. The undertaken analysis of the innovative development programs' has indicated that particular emphasis is being placed on the issues of energy saving and energy efficiency enhancement in the documents, elaborated in practically all countries. The article substantiates the thesis, that due to the current structure of the Russian economy with the dominant development of the energy sector, energy efficiency enhancement should be necessarily considered as a top priority that should be of the system nature, embracing the technological modernization's other priorities. It is only the ultimate concentration of the efforts that may boost the creation of competitive energy-efficient technologies, which, along with the nano-, bio-, information and nuclear technologies, should become the basic ones within the framework of the new technological mode of the economy's development.

In compliance with the results of the study undertaken the proposals on forming the mechanism of energy saving and energy efficiency enhancement intensification, harmonization of legislation at various levels of economic management in the areas of energy saving and innovative activity, revitalization of public-private partnerships in the implementation of the organizational, financial, economic and legal support of priorities in the sphere energy saving and energy efficiency enhancement have been put forward.

Keywords: energy efficiency, innovative modernization, technological modes

INTRODUCTION

The hard times which are being gone through by the economy of Russia are determined by the action of a number of factors of external and internal nature, including the

sanctions imposed by western countries. The particular emphasis is placed on searching the ways out of the current situation in the process of decision making at various levels of management of the Russian economy. Despite various points of view, opinions of the parties has come down to the need of transition of the Russian economy to the innovative way of development. Overcoming current problems of development and increasing efficiency of national economy are possible only on the innovative basis [1].

For this very reason creating favorable conditions of making business and increasing its innovative activity take an important place in the "Economic Development and Innovative Economy" program adopted in Russia [2]. Besides, the considerable attention in the developed program is paid to measures of the state support and stimulation of the innovative activity at the enterprises of various industries and fields [3, 4]. In many respects it can be explained by the fact that strengthening of competitive pressure from the western producers upon the Russian enterprises predetermines the necessity of the urgent measures directed to increase their competitiveness [5].

However a number of unresolved system problems still constrain transfer of Russia to the course of sustainable innovative development that is capable to weaken competitive positions of Russia even more in the conditions of formation of the new technological mode in the world economy.

PLACE AND ROLE OF TECHNOLOGICAL MODESIN THE ECONOMY OF DIFFERENT COUNTRIES

The development level of different countries is mostly determined by the technological mode prevailing in their economy. At the same time the technological mode is determined by a set of technologies specific to a certain development level of manufacture. The influence of the progress in science and technology causes a constant development of production techniques followed by the transition from lower to higher modes. Six technological modes can be distinguished nowadays. During the period of time since the beginning of the 20th century till present the development of engineering and technologies has overcome several modes in its evolution (table 1).

Table1. Evolution of technological modes development[6]

№	Period	Corresponding technological directions	Leading countries
Third technological mode	1900-1940	Heavy mechanical engineering, electric-power industry based on the use of rolled steel	Germany, USA, Great Britain, France, Belgium, Switzerland, Netherlands
Fourth technological mode	1940-1980	Automotive industry, aircraft construction, petrochemistry, petrocoal and nuclear power, electronic industry	USA, Germany, France, England, USSR
Fifth technological mode	1980-2020	Microelectronics, information technologies, biotechnologies, oil and gas power, robotics	Japan, USA, Germany, France, Sweden,

			Canada, South Korea, Australia
Sixth technological mode	2020-2060	Nanotechnologies, systems of artificial intelligence, global information networks, integrated high-speed transport systems, alternative power engineering, including hydrogen	USA, Japan, P. R. China

It should be mentioned that the transition to the new technological mode is caused mainly by the fact that existing technologies reach the limit of their growth in the process of development. The subsequent price leap on energy carriers and raw materials is the most important reason of production profitability falling technological chains of the old mode and it results in the necessity of their replacement by essentially new, less energy- and material-intensive technologies. It is followed by the flow of the fund into basic technologies of the new technological mode. At the same time a certain modernization based on technologies of the new mode affects old industries as well, opening opportunities of increasing production efficiency and product quality for them.

At the same time the innovative activity increases considerably during the replacement of technological modes. According to the World Intellectual Property Organization data, the steady growth of innovations in the sphere of Electrical machinery, apparatus, and energy is observed in recent years. Thus in 2013 the number of patents in this field has increased by 2,4 times compared with 2000 (figure 1). At that leaders in the implementation of innovations in this sphere are first of all countries with prevalence of the fifth technological mode industries in the structure of their economy - France, Germany, Japan and others.

In conditions when in the leading world countries the increasing and bigger relative share is the share of industries of the fifth and sixth technological modes, the basis of the economy of Russia is still industries of the fourth mode where the USSR has once been a world leader. For comparison, the share of industries of the sixth mode in the economy of the USA is about 10% now, and of the fifth one exceeds 60%. The share of technologies of the fifth mode In Russia is only 10%. And they are mostly formed under the influence of development of military industrial complex industries and the aerospace industry. More than 50% of the technologies used in Russian industry belong to the fourth mode, and nearly a third part - to the third one [6].

SCIENTIFIC COMMUNITY OF THE 21ST CENTURY

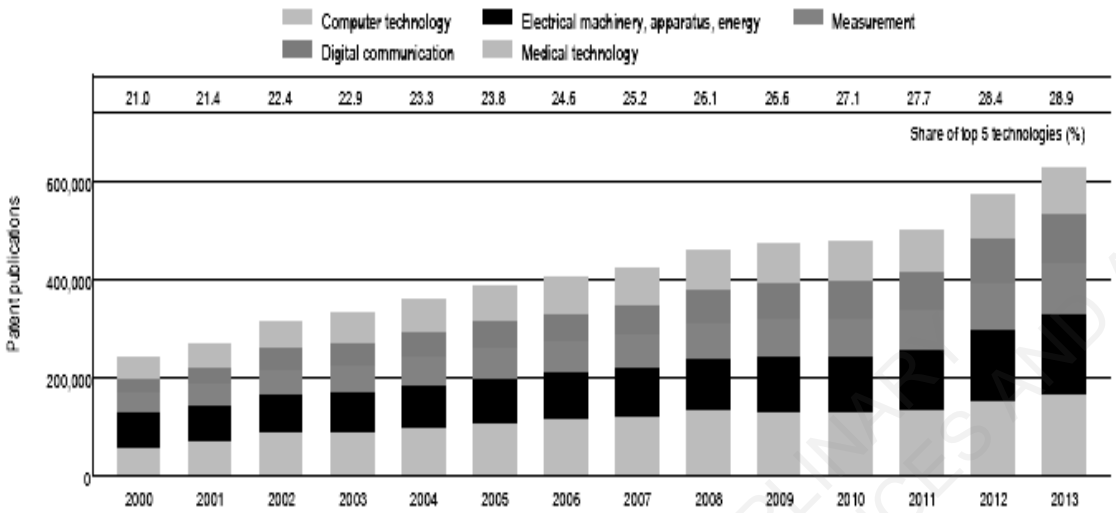


Figure1. Patent applications worldwide by field of technology [7]

In this regard a strategic task of development of Russia is a high-quality break to the technologies of the fifth and sixth modes. Considering the current situation, it is advisable to focus on the use of the gained technological experience of developed countries when forming a contour of the new technological mode.

POSITIONING OF ENERGY SAVING AND ENERGY EFFICIENCY AS A PRIORITY DIRECTION OF INNOVATIVE DEVELOPMENT OF THE RUSSIAN ECONOMY

Discussions on the choice of such development priorities which could set a powerful impulse for innovative modernization of the Russian economy and contribute to providing its competitiveness in the conditions of formation of the new technological mode [8, 9] are still being conducted till present. In our opinion, energy saving and energy efficiency can act as such a direction. First of all it is explained by the high level of power consumption of the economy of Russia in comparison with a similar indicator of developed countries (figure 2).

It should be mentioned that the size of power consumption of GDP of the Russian Federation had been decreasing during a number of years up to 2008. During the crisis period of 2008-2009 it tended to increase. Gradual decrease was resumed only in the middle of 2012. However even while decreasing its value in 2014 it was 1,5 times higher, than in Canada, 2,5 times higher, than in the USA and Australia and 3,5 times higher, than in Germany and Japan.

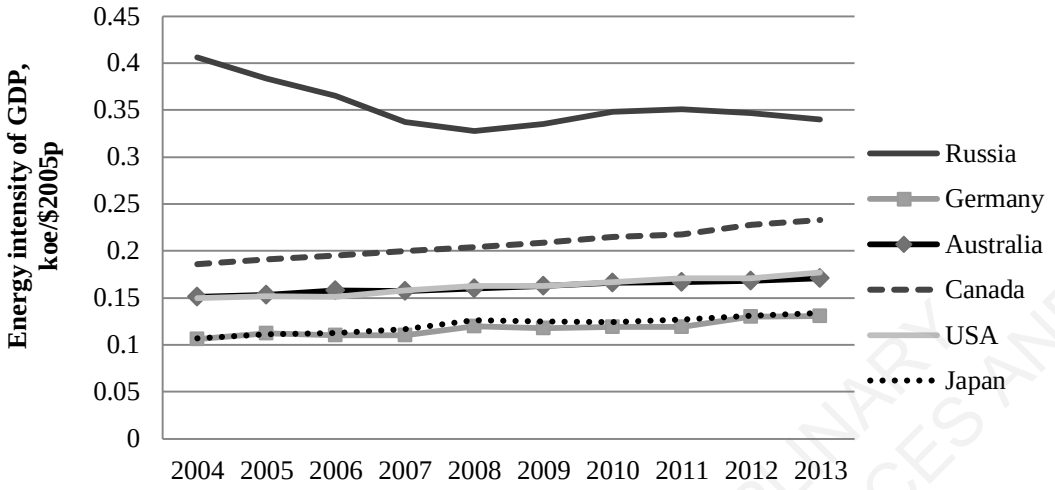


Figure 2.Dynamics of power consumption of the economy of Russia and other countries of the world [10]

In the analysis of GDP growth rates of mentioned countries in dynamics of change of final energy consumption it is possible to identify the following tendencies. Thus GDP growth is observed in Canada, Australia and Germany in case of simultaneous decrease in growth rates of final consumption of the electric power. In the USA, Japan and Russia increase in growth rates of GDP, and final consumption of the electric power is accurately traced. However, at the same time the amount of power consumption of the Russian economy continues to exceed a similar indicator of the USA and Japan considerably.

Nowadays the economy of Russia faces rather ambitious aims on decreasing GDP power consumption by 2020 at least for 40% in comparison with 2007. In this regard inclusion of energy efficiency and energy saving into the number of priority directions is quite logical. This direction along with other priorities, including information and telecommunication systems, the industry of nanosystems, life sciences, transport and space systems and some other, determines the vector of modernization and technological development of Russian economy according to national interests and tendencies of world scientific, technological and innovative development. Work on the specified priorities should make the greatest contribution to safety of the country, acceleration of economic growth and increasing its competitiveness in the world economic territory.

At that it should be noted that energy saving and energy efficiency have a core character among all priorities, exerting mutual impact on all development directions. So, for example, on the one hand, the development of the nanosystems industry predetermines the need of the resolution of the problem of effective nanomaterialsenergy release. On the other hand, nanooptical components should become a basis of the power effective lighting engineering. Creation of materials with new, first of all, energy saving properties is one of priority tasks in the sphere of rational environmental management. Besides, power effective technologies development is one of the priority directions of the microprocessor technology development. Accurately traceable interrelation shows

itself also between energy efficiency and other priority directions of science, technologies and engineering development in the Russian Federation.

However the achievement of target reference points on the Russian economy power consumption decreasing is restrained by the number of unresolved problems mostly connected with the imperfection of the standard legislation at the state, regional and municipal levels and insufficient financial support of work in the energy saving field. In the presence of quite a large number of legal acts in the sphere of energy saving lack of the approved tools for practical implementation of such an ambitious aim should be mentioned. In our opinion, use of the best foreign practices in this area could increase the efficiency of energy-saving technologies implementation significantly.

It is necessary to say that an important role in formation of the new sixth technological mode will be played by the state investments and venture funding institutes. Therefore, in our opinion, enhancement of the legal basis of activities of venture funds, as well as creation of conditions for public and private partnership activization are required as the implementation of effective investment projects is one of the most important conditions of the Russian economy modernization, its transition to the innovative way of development.

Besides, creating favorable conditions for activization of the innovative activity both for the scientific organizations, and industrial enterprises, as well as more effective use of innovative developments in production of competitive products is required. For this purpose it is necessary to increase the efficiency interaction of the state, science and industry in this area.

CONCLUSION

As a result of the conducted research it is possible to draw the following main conclusions.

First, one can observe a considerable lag from developed countries on the level of development of engineering and technologies in Russia. Industries of the fourth mode, where the USSR has once been a world leader, continue to be the basis of the economy. With respect to it a strategic task for Russia is a high-quality break to the new development technologies. For this reason considerable efforts on creation of necessary conditions for the subsequent transition of the economy to the sixth technological mode of development are made in Russia now.

Secondly, due to the high level of power consumption of the Russian economy energy efficiency increase is offered to be considered the most important priority of innovative development which should have a core character and penetrate all other priorities of technological modernization. Only complete concentration of efforts on its increase will contribute to activization of processes of development of competitive in the world market power effective technologies, which should become basic within the new technological mode of development of the world economy along with nano-, bio-information and nuclear technologies.

Thirdly, the whole number of unsolved problems connected with the imperfection of the legislation in the sphere of energy saving at various levels of the economy management as well as the insufficient activity of public and private partnership in case of

implementation of organizational, financial and economic and legal support of priorities in the sphere of energy saving and increase of energy efficiency considerably complicate the achievement of target reference points on decrease in power consumption of Russian economy and its transfer to the innovative way of development.

ACKNOWLEDGEMENTS

The study was performed by a grant from the Russian Science Foundation (project №16-18-10227).

REFERENCES

[1] Vayre J.-S Les tableaux de bord sur données massives, pour un nouveau management del' innovation?, Innovations, vol. 47(2), pp101-121, 2015.

[2] Kalenskaya N., Pratchenko O. Analysis of the State and Prospects of Innovative Development of the Russian Economy in Conditions of Its Modernization, Asian Social Science, vol. 11(11), pp357-363, 2015.

[3] Dudin M.N., Lyasnikov N.V., Veselovsky M.Y., Sekerin V.D., Aleksakhina V.G. The problem of forecasting and modelling of the innovative development of social-economic systems and structures, Life Science Journal, vol. 11(8),pp549-552, 2014.

[4] Parahina V. N., Boris O. A., Bezrukova T. L., Shanin I. I. State Support for Creation and Development of Socially-Oriented Innovative Enterprises, Asian Social Science, vol. 10(23), pp 215-222, 2014.

[5] Kirshin I.A., Datsyk A.A., Titov A.V. Forecasting the dynamics of an innovative cycle, World Applied Sciences Journal, Pakistan, vol.27 (13), pp 197-201, 2013.

[6] Perez C.Technological revolutions and techno-economic paradigms, Cambridge Journal of Economics, vol. 34 (1), pp 185-202, 2010.

[7] Official site of World Intellectual Property Organization 02.06.2016 http://www.wipo.int/ipstats/en/wipi/

[8] Anisimova T.Y. Analysis of the Reasons of the Low Interest of Russian Enterprises in Applying the Energy Management System, Procedia Economics and Finance, vol. 23, pp111-117,2015.

[9] Melnik A.N., Dyrdonova A.N. Formation and development of industrial clusters in the region, International Multidisciplinary Conferences on Social Sciences and Arts SGEM 2014, Bulgaria, 2014,pp 215-222.

[10] Official site of Global Energy Statistical Yearbook 02.06.2016 https://yearbook.enerdata.net

SCIENTIFIC COMMITTEE INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

EVALUATING ENERGY SECURITY IN RUSSIA: CHALLENGES AND OPPORTUNITIES

Pavel Pykhov, PhD

Tatiana Kashina

Institute of Economics, Ural Branch of the Russian Academy of Sciences, **Russian Federation**

ABSTRACT

The paper contains an analysis of approaches to address the concept of energy security. It proposes an original method for the quantitative evaluation of energy security of a territory. It is based on an indicative analysis and consists of a set of performance indicators that describe individual threats to Russia's energy system. The methodology is based on 7 units of indicators, including technical, economic, and environmental performances. Such a structure of the set of diagnostic tools allows detecting a wide range of energy security threats. A brief description of all the units within the methodology is provided. This set of indicators reflects (describes) key threats to energy security. The main results of the study relate to evaluating of the dynamics of changes in energy security in Russia's regions in 2000-2015. Key factors that lower the level of energy security in Russia have been identified. Among them, a high level of wear and tear, higher fuel consumption, increased emissions of pollutants, and low rates of technical reequipment of the energy complex. The paper represents calculated levels of energy security for major regions of Russia by diagram. It proposes directions of the country's energy policy to increase the level of energy prosperity.

Keywords: energy security, infrastructure, factor analysis, energy infrastructure.

INTRODUCTION

Despite the number of works on energy security, the relevance of this problem has not only remained at the same level but on the contrary – it is increasing more and more. Apparently, this is due to the technological progress, increasing anthropogenic intervention in nature, and expansion of energy-related human activities.

In general, the issue of sustainable development of regions have been studied by the Ural scientific community in conjunction with dividing it into separate areas: economic security [1, 2], energy security [3], sociodemographic security [4–9].

In this paper, we look into the tasks of evaluating the state of energy security in Russia's regions to identify the main threats to the formation of this security determined by both internal and external crisis factors.

The World Energy Council defines energy security as the certainty that energy will be available in the quantity and of the quality required by current economic conditions; as the capability to meet the demand, produce the required amount of fuel and electricity, and deliver them at affordable prices to countries that need them to ensure the

functioning of their economy, normal living conditions of the population, and the protection of national borders.

Some Russian researchers believe that energy security is defined as the state of protection of individuals, society, and the economy as thewhole against threats to reliable fuel and energy supply. Energy security is also understood as a regulated system of "safe and secure movement of energy resources and related production factors of a global scale that provides sustainable economic and social development in the world." [10].

The definition of energy security proposed by scholars of the Institute of Energy Systems has become widespread among the Russian scientific community: energy security is a state of security of citizens, society, the country, and the economy against shortages, when their needs in energy are met through economically accessible energy resources of acceptable quality and against threats of violation of uninterrupted energy supply [11].

In foreign sources, energy security is often understood more as security of supply – the creation of guaranteed internal and external sources of energy to overcome any external energy dependence. This is evidenced even by the wording in the title of the EU energy strategy sounding as "Sustainable Energy Security Strategy." This approach reflects the vision of energy security issues by importing countries exclusively.

The Asia-Pacific Research Center of Power implies that energy security should be seen as a model of "Four As" – that is, availability, accessibility, acceptability, and affordability [12]. A Canadian energy teacher Larry Hughes argues that energy security can be described through the "Four Rs" – that is, review (to understand the problem), reduce (to use less energy), replace (to change to ensure availability of sources), and restrict (to limit a new requirement) [13]. Drexel Kleber, head of the department in the U.S. Ministry of Defense, believes that energy security is a combination of "Five Ss":

- Surety: degree of certainty with respect to access to energy and fuel sources;
- Survivability: flexibility and duration of the current system in the face of potential damage;
- Supply: physical availability of energy resources;
- Sufficiency: compliance with delivery from multiple sources;
- Sustainability: degree to which the supply may be prolonged, while environmental impact associated with the use may be mitigated [8].

The authors refer to energy security as the state of security for individuals, society, state, economy against threats of violation of sound energy and energy resources demands under normal conditions and in emergency situations as well as threats of violation of uninterrupted power supply at a reasonable cost, reasonable prices for fuel and energy resources.

We offer our own methodological complex to research energy security of regional level areas. It is based on the method of indicative analysis that compares current actual values of performance indicators with threshold (critical) values for them. The crisis degree in accordance with the proposed methodology is evaluated by two levels – precrisis and crisis (excluding the normal state). For a subtler assessment of security

threats, each of these areas needs to be divided into sublevels that characterize the degree of worsening of the crisis situation.

In accordance with this procedure, seven units of energy security performance indicators are formed, which reflect the degree of certain types of security threats:

1. Electrical and thermal energy provision unit.

2. Fuel supply provision unit.

3. Structural and modal unit.

4. Unit of basic production assets (BPA) recovery in the energy sector.

5. Environmental unit.

6. Financial and economic unit.

7. Energy saving and energy efficiency unit.

The first two units correspond to the technological structuring of energy systems, thus combining related substructures of energy consumption and energy supply systems. The third and fourth units reflect the aspects of security from the standpoint of future requirements to the fuel and energy complex as a service industry to meet the demand for energy resources and energy (BPA recovery in the energy sector) and to ensure safe operating conditions of the industry itself (structural and modal unit). The need to introduce the BPA recovery unit in the energy sector is determined by high capital intensity and inertia of the fuel and energy complex; and the need to introduce the structural and modal unit, by high technological requirements of energy systems (automation, process reliability) and requirements to overcome monopolism in the industry. The environmental unit reflects the aspect related to harmful influence of the fuel and energy sector on the population's living conditions. Finally, the financial and economic unit as well as the energy saving unit reflect the current financial situation and the efficiency of the fuel and energy sector.

The diagnostic results have shown to us that there is a number of interrelated problems in the energy sector of Russia.

The level of depreciation of basic fuel and energy equipment, particularly in the electric energy sector, can be identified as the key problem. For a quarter of Russia's constituent entities, the degree of deterioration of basic equipment has exceeded the level of 45%–50%; with 5% of regions havinga wear of over 60%. It should be noted that this applies to the estimated wear and tear only, which is not proportional to the age of equipment. During a life cycle, basic power equipment undergoes repairs, a number of elements get replaced. Currently, the average service life of BPA in the power sector is about 25 years. This means that relatively recent equipment is operated along with BPA of the 1950s–1960s, which have not undergone substantial modernization since commissioning. Therefore, at this time, the obsolescence of equipment across the entire power system can be rated as only slightly less than 100%. The situation is better for the fuel industry – in 7 out of 40 fuel producing regions (17.5%) the level of depreciation is above 60%.

The qualitative state of the energy complex results in its fuel and economic inefficiency. This is expressed, for example, in extremely high specific consumption of equivalent

fuel for electricity generation in a number of regions. Thehighest figures are observed in the Far East with 390 grams of coal equivalent/kW•h, Siberia and the Urals with about 340 grams of coal equivalent / kW•h.

This trend can be reversed only by the transition to new high-tech equipment. For this purpose, it is necessary to implement plans for reconstruction and modernization of power plants, at least the ones that have already been scheduled.

An increased environmental load coming from fuel and energy facilities depends on the condition of equipment as well. An excessive level of human impact on the environment is caused by the production of electricity and heat with the use of outdated technologies of production, preparation, processing, and combustion of fuel and a high level of use of low-quality coal. Currently, there is an acute problem of recycling waste of energy producing facilities (e.g., full ash dumps of power plants in the absence of new space for them).

The above problems are largely determined by the situation of chronic underinvestment, which lasted for one and a half decades (1990s and early 2000s). In this period, investments in the energy sector and particularly in the electricity industry were minor. Although investments in the energy sector have sharply increased since 2005–2006 (in the power sector, the level of investments has grown twofold or threefold in most regions; in the fuel industry, about 1.5 times), it will not be easy to eliminate the accumulated backlog because of high capital intensity and major construction lags in the energy construction. In addition, a new crisis in the Russian economy has slowed down the barely launched investment revival, again.

The development of levels of automation of the production and transmission of electrical energy does not keep with advanced Western technologies. Russia has a certain energy surplus that could be exported. Moreover, it is economically feasible to build up such a surplus by means of the construction of power stations in view of a great number of fuel and energy resources of Russia. Electricity is a much more advanced product type than primary fuel. However, there are virtually no interconnections between Russia and European countries. One of the main reasons is the difference in electric mode control automation levels. European energy equipment allows maintaining the frequency of alternating current within 50 ± 0.01 Hz, while in Russia's UES it is only in the range of 50 ± 0.2 Hz.

Almost all the electrical substations of Western Europe are equipped with modern means of continuous metering of electricity flows. In Russia, however, such tools are available at a limited number of substations. In addition to European destinations, exporting of electricity from Siberia to China is a very topical issue as well. The obstacle is large distances, since the industrialized areas of China are located in the center and in the east of the country. However, Russia has the capability and experience of transmitting power over long distances, and it should be used. It will also stimulate the development in the national electrical engineering industry.

Let us also note that the western part of Russia has a major proportion of gas consumption in the boiler and furnace fuel consumption balance, which poses a threat of depending on the presence of a monopoly fuel supplier. Calculation results show a high degree of fuel monopoly for 56 Russian regions. By this indicator, they are in the zone

of unfavorable conditions since monopoly suppliers hold more than 80% of the market, especially in the central, southern, and Volga regions.

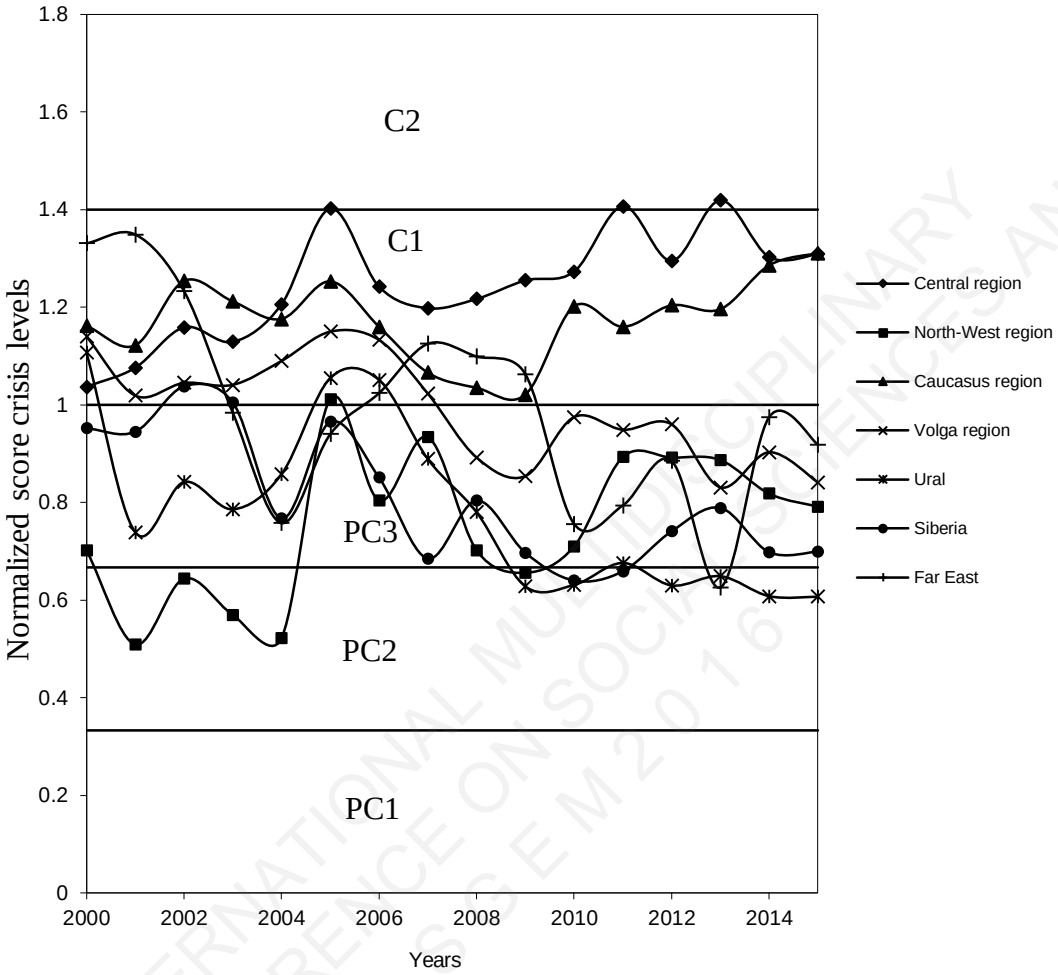


Fig. 1. Dynamics of a comprehensive assessment of energy security of the RF regions in 2000-2015 years*

* In the figure, the ordinate shows levels of crisis as they increase (precrisis 1, precrisis 2, precrisis 3, crisis 1, crisis 2).

Compared to 2000, the situation with energy security has improved mainly due to better indicators for the units of fuel security as well as structural and modal, and financial and economic units, and to a lesser extent, due to indicators of the BPA recovery unit and energy saving and energy supply units. Regions of the Central, Northwestern, and Ural Districts have improved their positions most of all.

CONCLUSION

The current situation in Russia's energy sector makes it necessary to give prominence to areas of the energy policy in terms of energy security of regions. The main areas ensuring regional energy security are as follows:

1. Streamlining the use of subsurface resources. This area includes exploration of energy resources, development of fields, complexity of the use of resources therein, efficiency (energy, technological, economic).

2. Creating a rational fuel and energy balance for the territory that corresponds to its natural conditions, structure of the economy, transport links with other regions, requirements to technological development, environmental safety, principles of self-development of regions, economic efficiency, diversification of energy resources, and other factors of sustainable and safe development.

3. Stepping up investment activities. It is possible to attract additional investments for the development of energy companies through the creation of concessional lending facilities at the expense of federal, regional, and local budgets; implementation of targeted bonds for the construction of specific objects; attraction of long-term bank loans, including loans from foreign banks; provision of light-duty access to leasing schemes through guarantees from authorities; attraction of shareholders' dividends, including the state; methods of indirect participation of consumers.

4. Restoring the design, construction, and energy complex of the country – it is perhaps now the most challenging area for improving energy security.

5. State economic policy on the energy market. Tax and tariff regulation is one of its components.

6. An increase in the number of anthropogenic accidents in the energy production and transmission systems and severe negative socioeconomic consequences urge to establish special regional structures to monitor the status of energy facilities in the form of regional committees on energy security. The functions of these institutions along with regional energy committees should include controls over the activities of guarantee suppliers.

The above measures will ensure safe development of Russia's territories and become a powerful factor of maintaining the required rates of economic growth of Russia in general.

ACKNOWLEDGMENTS

The study was conducted with the support of the Russian Science Foundation (Project No. 14-18-00574).

REFERENCES

[1] A. I. Tatarkin, A. A. Kuklin, A. L. Myzin, et al. Complex Technique for Diagnostics of Economic Security of Territorial Entities of the Russian Federation (Second Edition). Part 1. Methodical Techniques for Diagnostics of Economic Security of Territories at the Regional Level. Russia, pp 71, 2001.

[2] P. A. Pykhov, O. A. Denisova. Assessment of the Contemporary and Prospective State of the Urals Federal District in Terms of Energy Security. Economy of Region. Appendix 4 (16), Russia, pp 52–62, 2008.

[3] A. L. Myzin, P. A. Pykhov, P. Ye. Mezentsev, O. A. Denisova. Study of Sectoral and Regional Problems of Energy Security Formation. Economy of Region, Russia, No. 3 (15), pp 81–88, 2008.

[4] I .A. Gurban, A. E. Sudakova. The Development of Higher Education in Russia: An Assessment Methodology. Procedia – Social and Behavioral Sciences, vol. 214, December 5, pp 596–605, 2015.

[5] A. S. Naydenov&I. A. Krivenko. Shadow Economy in the Context of Economic Crisis: Circumstance Analysis and the Forecasting of Consequences. Economy of Region, Russia, issue 1, pp 46–53, 2013.

[6] Ye. V. Vasilyeva, I. A. Gurban. Diagnostics of the Quality of Life: International Experience and Russian Reality. Polzunovsky Almanac No. 3, Russia, pp 12–20, 2011.

[7] I. Gurban & A. Klevakin. Distinctive Features of the Market of Drugs in Russia/SGEM International Multidisciplinary Scientific Conferences on Social Sciences and Arts. September 3–9, 2014, Bulgaria. vol. IV, pp 209–216, 2014.

[8] V. P. Chichkanov& A. S. Naydyonov & A. S. Krivenko. Socioeconomic Nature of Terrorism. Economy of Region, Russia, issue 4, pp 65–75, 2013.

[9] A. S. Naydenov. Influence of Socioeconomic Consequences of World Economic Crisis on a Shadow Economy, Vulnerability, Uncertainty, and Risk: Analysis, Modeling, and Management – Proceedings of the ICVRAM 2011 and ISUMA 2011 Conferences, USA, pp 410–416, 2011.

[10] A. V. Baitov, V. V. Velikorossov, A. M. Karyakin. Russia's Energy Security in the Conditions of Market Relations. Russia, pp 224, 2012.

[11] N. I. Voropay, S. M. Senderov. Energy Security: Nature, Basic Problems, Methods and Results of Research. Publishing House of RAS Institute of Economic Forecasting. Moscow, Russia, pp 91 , 2011.

[12] K. V. Trachuk. Evolution of Approaches to Energy Security: Countries-Importers against Exporting Countries. MGIMO University Bulletin No. 6, Russia, pp 258–263, 2011.

[13] Hughes, Larry. The four ‘R’s of Energy Security. Energy Policy 37(6), pp 2459–2461, 2009. doi:10.1016/j.enpol.2009.02.038.

[14] Kleber Drexel. The U.S. Department of Defense: Valuing Energy Security. Journal of Energy Security; June, pp 7, 2009.

SCIENTIFIC CONFERENCE GLOBAL INTERNATIONAL ASSOCIATION SOCIAL SCIENCES AND ARTS

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

EVALUATION OF ECONOMIC BENEFITS FROM MIGRATED LABOUR FORCE

Assoc. Prof. Mgr. Sergej Vojtovič, DrSc.

Ing. Magdaléna Tupá, PhD.

Department of Management and Human Resource Development, Faculty of Social and economic relations, University of Alexander Dubchek in Trencin, **Slovakia**

ABSTRACT

The given study deals with, on the one hand, the issue of economic benefits from migrated labour force in Germany as the country with pro-immigration policy and, on the other hand, the importance of the right management of migration flows which may significantly influence the economic development of the country, increase of labour productivity as well as the development of demography and sustainability of retirement systems. Based on the statistical data and mathematical calculations it introduces a system of evaluation of economic benefits from immigration on the labour market and on selected macro-economic indicators. Moreover, it shows the saved costs on education and preparation for profession of such a labour force, incomes from GDP or VAT produced by immigrants. In conclusion, it evaluates the balance of benefits and shows further profit from the saved costs on health and social care and care for a child while preparing for profession, incomes from income and consumption taxes, but also payments to social and health insurance agency from salaries of immigrants. A significant benefit from the immigration of labour force is a significant development potential of economy and society.

Keywords: immigration, labour force, benefits, macroeconomic indicators

INTRODUCTION

Demography of Germany has long been dependent on immigration flows. Throughout history, Germany recruited foreign labour to accommodate the rising labour demand [9]. Short-term costs for the integration of foreigners who entered Germany for economic or humanitarian reasons can be high. On the other hand, effective integration programs that would help integrate immigrants faster into broader society may become evident in the long run as an investment into substituting for the decreasing numbers of domestic labour. Low or even negative natural population growth and significantly increased life expectancy bring about endangered financial sustainability of pension systems. In addition, the proportion of active workers to pensioners is insufficient to financially support the system. At the same time, German economic growth relies heavily on high-skilled labour that is a source of high added value. As a rule, low-skilled job openings are filled by immigrants [1, 8, 11].

Labour migration has long been an issue of major interest in scientific and professional publications. There are a large number of studies on positive and negative effects of migration. Professionals and scholars say that migration has positive consequences for

both the host and home countries [3, 7, 15]. Migration is real evidence of a free movement of labour in the European labour market, which is one of the fundamental freedoms resulting from the European integration processes [4, 6]. Professional researchers, policy makers, government agencies and others focus on economic and social development implications for a host country [13]. There are no sufficient and exact data labour migration. Majority of information are merely estimates, assumptions, judgments and myths that give a roughly accurate approximation about the scope of the labour migration consequences. An exact evaluation of migratory flows of labour to Germany, their scope and intensity in time and space under the current migrant crisis are not available for the time being. Moreover, there are no calculations regarding gains and losses for the economy, society, and immigrants themselves. Such evaluations are not included in any of the measures and policies of the government and scientific and expert publications.

The main purpose of the present study is twofold. First, it is to identify the basic principles for the evaluation of economic losses and gains caused by labour migration to Germany. To do so, a set of economic criteria is elaborated and mathematical calculations are selected in order to calculate economic losses and gains caused by immigration. Statistical data available in Eurostat, WTO, Statistical Office of the SR, Ministry of Labour, Social Affairs and Family of the SR, World Bank, International Monetary Fund, and research data published in scientific and expert publications are used to perform the calculations. General scientific and research methods are employed in the study, such as methods of induction, deduction, abstraction and comparison, analysis and synthesis of selected facts, phenomena and processes. Statistical and mathematical methods are used to make the calculations.

PRINCIPLES APPLIED IN THE EVALUATION OF LOSSES AND GAINS CAUSED BY IMMIGRATION OF WORKFORCE TO GERMANY

From 2000 to 2009, there was not a significant rise in the number of immigrants as the number rose from 350,000 to nearly 400,000. In 2009, Germany was at a turning point regarding migratory flows due to the deepening economic crisis. From then on, immigration into the country has intensified. In 2014, there were 1,149,045 immigrants. Net migration was 103,903 immigrants in 2006 with an increasing trend in the following year and an increase of almost 18%. In 2008, net migration dropped to 83,060 people, and increased by over 19,540 persons in the following year. Net migration had grown since then, reaching 676,730 persons in 2014 [5]. (Table 1).

According to the Federal Statistical Office, there were 16.4 million immigrants (i.e. 20.3% of the population of Germany) at the end of 2014. Out of this this number, 9.2 million hold German citizenship, and 7.2 million are still registered as foreign nationals. Out of 7.2 million, there are approximately 21,000 Slovaks, yet some unofficial sources indicate that there are 40,000 to 60,000 Slovaks working in Germany. [5].

Table 1 Migration flows of workforce in Germany

Evolution of migration in Germany			
Year	Immigrants	Emigrants	Net migration
2006	361,562	257,659	103,903
2007	393,885	267,553	126,332
2008	394,596	311,536	83,060
2009	396,983	294,383	102,600
2010	475,840	295,042	180,798
2011	622,506	302,171	320,335
2012	738,735	317,594	421,141
2013	884,493	366,833	517,660
2014	1,149,045	472,315	676,730

Source: Ausländerzentralregister [2]

The majority of immigrants were aged 25−35 years. The average age of immigrants is 35.4 years, whereas the average age of the German population is 46.8 years. It follows that immigrants in this age group can be seen as the most productive part of the population. In addition, they have a higher reproduction rate than the German population, and their contribution to the population growth helps the economic development of Germany.

From 1990 to 2014, 18.1% of immigrants held university degrees compared to 43.7% since 2011. Since 2011, the number of immigrants aged 25 to 35 years with a university degree has increased to 61.7%, compared to 47.1% of German population in the respective age group holding university degrees. On the other hand, 8% of immigrants have primary school education compared to a mere 1.9% of German nationals. [12].

Since 1960, family reunification was the reason for immigration for 37% of immigrants and employment purposes for 17.9% of immigrants. From 2008, the reason for migration for employment purposes has accounted for 28.1% persons compared up to 56.9% persons in 2015.

In 2013, the highest number of immigrants came from the European Union, namely from Romania (156,440), Poland (143,760) and Bulgaria (63,140). Emigration patterns of these countries were as follows: 70,700 people emigrated from Romania, 63,363 emigrated from Poland and 24,466 people emigrated from Bulgaria. Immigration to Slovakia rose dramatically, namely 5,307 immigrants in 2010, 11,475 immigrants in 2013, and 12,567 immigrants in 2014. In 2013, 6,000 people emigrated from Slovakia, and 7,082 persons in 2014. Thus, net migration increased from 943 immigrants in 2010 to 5,475 in 2013 and 5,485 persons in 2014.

Immigrants from the remaining EU countries accounted for 72,000 persons with an annual increase amounting to 73%. There were 47,000 immigrants from Africa, mainly from Somalia, Nigeria, and Tunisia. 133,000 persons emigrated to Germany from Asia, mainly from Syria (62, 000) with an annual increase amounting to 271%. [14]. Forty three million persons worked in Germany in 2015. Over the last ten years, employment has been growing with the annual growth ranging from 0.8 to 0.9% in 2015. (Table 2).

Table 2 Evolution of the German labour market from 2011 to 2015

Evolution of the German labour market					
	2011	2012	2013	2014	2015
Population	80,275	80,426	80,646	80,983	81,563
Workforce	43,933	44,231	44,451	44,730	44,914
Unemployment	2,399	2,224	2,182	2,090	1,950
Unempl. Rate	7.1	6.6	6.7	6.7	6.4
Employment	41,534	42,007	42,269	42,640	42,964

Source: Destatis [5].

One in ten workers in Germany was an immigrant in 2014. This is also confirmed by our calculations − 69% out of 7.2 million foreigners (78% of foreign males in employment, 60% of foreign females in employment) represent more than 11% out of the total number of persons in employment in 2014 (42,496 persons in employment). 60% of migrant workers were EU nationals: 32.9% were from Romania, 24.8% from Bulgaria, 15.6% from Hungary, and 10.5% from Poland.

In 2009, employment of male immigrants aged 15−65 years stood at 78.3% (by 4.6% less than the native male population). On the other hand, employment of female immigrants aged 15−65 years stood at 60% females (by 12.8% less than the native female population). Employment of immigrants aged 25−55 years, who make up the largest proportion on the labour market, stood at 90.7%, which was only 3.6% less than the native male population. A more striking difference was found in immigrant females in employment. Employment of immigrant females aged 25−55 years stood at 68.3% compared to 84.2% of native females in employment.

THE IMPACT OF IMMIGRATION ON GDP

Immigrants represent a large proportion of economically active population, and they help raise German GDP. In 2015, Germany's gross domestic product in current prices stood at € 3,025.9 billion and there were 42.8 million people working. GDP per capita stood at € 37,099. In 2014, net migration was 676,730 people. This number of migrant workers created a GDP of € 47.81 billion. According to the German Office for Migration, the percentage of immigrants gainfully employed represented 11% out of the total number of persons in employment in 2014. Having calculated GDP per capita, foreigners produced € 320.7 billion with value added of € 293.2 billion in 2014.

Immigration is a chance to get educated people with no need to invest into their education. In calculating the spending on education per pupil, statistical data on the number of immigrants and their educational level are used. In 2014, the average annual spending on education was € 6,300 per student in Germany. Current spending per primary school pupil amounted to € 5,400, per general secondary school student amounted to € 6,800, and per secondary professional school student amounted to € 4,300. Annual spending per student in higher education was € 7,200 and the total spending for completed higher education amounted to approximately € 50,000. Average spending on education ranged from € 5,100 in 2008, € 5,800 in 2010 to € 6,200 in 2011 (Table 3).

Table 3 Spending on education in Germany in 2014

Germany's spending on education in 2014	
	2014
Public expenditure on education	€ 123.7 bil.
Expenditure on education per citizen	€ 1,182
Expenditure as a share of GDP	4.98%
Average expenditure per pupil in public schools	€ 6,300
Expenditure per elementary school pupil	€ 5,400
Expenditure per student in higher education	€ 7,200
Expenditure on completed higher education	€ 50,000

Source: Destatis

Compulsory schooling for all children begins at the age of six in the first year of elementary school. Children attend elementary schools for four years, after which they transfer to a secondary school for nine years on average. Studying at some of the institutions of higher education takes 8 – 12 semesters, i.e. 4 – 6 years. In total, Germany spends € 21,600 per primary school pupil, € 56,700 per secondary school student and € 50,000 per higher education student, which makes € 128,300 in total. A person who has completed primary education would have to work 1.32 years to pay back the investment of German government in his/her education. A person who has completed secondary education would have to work 2.11 years and those holding a degree would have to work 3.58 years to pay back the investment of German government in their education.

Compared to the Slovak Republic, there are one year of preschool education, nine years of elementary education, four years of secondary education and five years of higher education, and the total expenditure per elementary school pupil amounts to € 42 925, per secondary school student € 59,552.20 and per student in higher education € 89,694.90 [15]. It follows that these costs in relation to the level of education (number of years of education) of Slovaks working in Germany make the total expenditure on education amount to € 306.47 million. In Germany, however, the total expenditure would have amounted to € 509.81 million. (Table 4).

Table 4. Annual expenditure of educational institutions per student

Annual expenditure of educational institutions per student **(2009, USD PPP)**					
	Pre-school	Lower primary education	Upper primary education	Secondary education	Higher education
Germany	-	5,400	6,300	6,300	7,200
Slovakia	4,433	5,099	4,658	4,658	6,758
EU 21	6,807	7,762	9,513	9,513	12,967
V3	4,936	4,655	5,381	5,381	8,177
OECD	6,670	7,719	9,312	9,312	13,728

Source: OECD [10].

Regarding immigrants in employment with completed primary education (8% - 374,000 people), Germany saved € 17.73 billion on education. Regarding immigrants in

employment with completed secondary education, € 176.78 billion were saved and € 262.09 billion on education of immigrants holding a university degree. Thus, total amount of savings on education of immigrants represent € 459.9 billion.

Expenditures of educational institutions vary country by country. Expenditures of educational institutions in OECD countries, V3 or EU 21 average are considerably higher than in Slovakia. Most immigrants within the European Union come from Romania, Poland and Bulgaria, where the expenditures on education are much lower than in Germany or the European Union average.

DISCUSSION AND RESULTS

According to the United Nations report (Population Division), Germany would annually require 3.6 million immigrants to maintain the current level of the welfare state. A report commissioned by the Immigration Council in 2004 listed 14 areas with labour shortages in Germany, including health (doctors, physiotherapists, pharmacists, pharmaceutical technicians), engineers (mechanics, automotive, mechanical engineering) and services (insurance experts, qualified trade representatives). The German government as well as governments of other countries do not accept that this scale of immigration would be desirable. Instead, they suggest to carry out reforms influencing domestic labour supply (encouraging better participation rates by means of welfare and social programs that encourage people to re-enter the labour market, improving the employment perspectives for older workers, education and training to meet future labour demand, promoting regional mobility, providing incentives for unemployed people). These intended reforms have, however, some limits. On one hand, immigrants are filling labour needs by taking up jobs regarded by domestic workers as unattractive and low paid. Official data indicate that there are more than 300,000 unskilled immigrants, who are mostly employed in the catering, the hotel industry, agriculture, construction and the like. Foreign workers also carry out industry related services and the number of people engaged in this type of work alone amounts to 100,000 every year. There are also highly qualified and skilled foreign workers that cannot be substituted by domestic workers.

Almost half of immigrants are university educated individuals. 35% of immigrants are professionally trained and 22% of foreigners have no qualifications. It follows that those entering Germany are either highly qualified or unskilled individuals, while only one in four immigrants was a member of academia.

Thus, Germany receives educated and ready to work people with no need to finance their education, health and social insurance during their childhood and studying, etc. Immigrants entering the German labour market are in the most productive age and help solve economic growth in terms of raising GDP and added value. High-skilled immigrants generate the highest added value, which is critical for economic growth. At the same time, immigration helps put down pressure on wages in sectors and jobs that are unattractive to or difficult to fill in by native workers.

One of the benefits of immigration is the consumption of immigrants in the host country. It holds that the longer immigrants live and work in a given country, the higher proportion of their income is spent on consumption. This is how immigrants affect consumption levels and thereby reinforce economic growth. Income and consumption

determine not only the amount of taxes to be paid to the state budget but also the amount of money to finance health and social insurance. Since the average wage received by immigrants is much lower than the one received by natives, lower are also direct taxes and contributions to health and social insurance system. According to official statistical data the wages paid to immigrants amount to only two-thirds of the one paid to natives. Wages vary across different immigrant groups and jobs. The lowest wages are paid to immigrants from Turkey, Portugal, former Yugoslavia who, upon entering the labour market receive only 54 – 59% of the wages paid to natives, and 61 – 64% after 6 to 8 years of working. Upon entering the labour market, Spaniards, Czechs and Slovaks are paid 70 – 80% of the wages paid to natives, and after working a required number of years in Germany, their wages are almost as high as those of native population. French, Austrian, Dutch and British people enter the German labour market with above-average wages. In general, these workers are highly qualified, having adequate education and as a rule an extremely high income. Wages are age-differentiated, and it holds true that the younger an immigrant worker, the higher the wages.

Funds collected from taxes and contributions are also of great importance. Contributions to be paid are high in Germany (pension insurance 18.7%, unemployment insurance 3%, care insurance 2.05%, sickness insurance 14.6%, and other additional contributions). Taxation is performed according to 6 tax classes based on the personal status. These funds are brought into the state budget, social security and welfare systems, and subsequently redistributed. Thus, immigrants make a considerable contribution to the public budget since there are only limited numbers of immigrants entitled to social benefits.

CONCLUSIONS

An attempt to create a methodological and methodical approach to evaluate the benefits of immigration for a host country, the country with a long history of receiving and integrating immigrants shows that there are missing accurate statistical data on migration flows, push and pull factors and their impact on the host country economy that could be utilized to make the relevant calculations. Moreover, a purely economic approach to positive factors of immigration is insufficient since the benefits have to be evaluated from economic, social, demographic as well as other point of views and a long-term perspective.

The approach used to evaluate economic benefits of immigration tends to highlight the positives, on condition that immigration processes are well regulated in order to maximize the benefits of immigration. On the other hand, there are threats and risks associated with migration which can include failed integration of immigrants, safety threats as well as economic challenges that might occur in the labour market when migration flows are not well and correctly managed.

ACKNOWLEDGEMENTS

This publication was created within the frame of the project funded by VEGA agency „Trends in the migration of labor force in the EU countries and its impact on the economic and social development of Slovakia" (č.1/0736/14).

REFERENCES

[1] Adepoju, A., Van Noorloos, F., Zoomers, A. (2010). Europe's Migration Agreements with Migrant-Sending Countries in the Global South: A Critical Review. Journal of International Migration, 2010, (48) 3, pp. 42-75.

[2] Bundesagentur für Arbeit, Der Arbeitsmarkt in Deutschland – Menschen mit Migrationshintergrund auf dem deutschen Arbeitsmarkt, Arbeitsmarktberichterstattung, Nürnberg, 2014, [online]. Available at: http://statistik.arbeitsagentur.de/Statischer-Content/Arbeitsmarktberichte/Personengruppen/generische-Publikationen/Broschuere-Migranten-2014-07.pdf [2016 – 31 – 05]

[3] Daugeliene, R., The position of knowledge workers in knowledge-based economy: migration aspect, European Integration Studies, 1, Lithuania, 2007, pp. 103-112.

[4] Dagiliene, L., Leitoniene, S., Grenčíková, A., Increasing business transparency by corporate social reporting: development and problems in Lithuania, Engineering economics. (25) 1, Lithuania, 2014, pp. 54-61.

[5] Destatis – Statistisches Bundesamt, [online], Available at: https://www.destatis.de/DE/ZahlenFakten [2016 – 31 – 05]

[6] Habánik, J., Koišová, E., Regionálna ekonomika a politika, Bratislava: Sprint, Slovakia, 2012, pp. 33-38.

[7] Kahanec, M., Labour market impacts of post-enlargement migration on hosts and stayers in EU labour markets, Transfer: European Review of Labour and Research, Ungaria, 2015, vol. 21, 3: pp. 359-372

[8] Kazlauskienė, A., Rinkevičius L., The Role of Social Capital in the Highly-Skilled Migration from Lithuania. Engineering Economics, Lithuania, 4, pp. 69-75, 2006.

[9] Liebig, T, The Labour Market Integration of Immigrants in Germany. In OECD Social, Employment and Migration Working Papers, OECD, 2007, pp. 47, 8.

[10] OECD, Zuwanderung ausländischer Arbeitskräfte: Deutschland, 2013

[11] Pajnik, M., 'Wasted precariat': Migrant work in European societies, Progress in Development Studies, vol. 16, 2, 2016, pp. 159-172

[12] Romiti, A., Trübswetter, P., Vallizadeh, E., Das soziale Umfeld gibt die Richtung vor, Institut für Arbeitsmarkt- und Berufsforschung, Lohnanpassungen von Migranten, Deutschland.

[13] Schaeffer, P. Refugees: On the Economics of Political Migration. Journal of International Migration. 2010, (48) 1, pp. 1-22.

[14] Seebaß, K., Siegert, M., Migranten am Arbeitsmarkt in Deutschland, Bundesamt für Migration und Flüchtlinge, Deutschland, 2011.

[15] Williams, AM.; Baláž, V. and Kollár, D.: Coming and Going in Slovakia: International Labour Mobility in the Central European 'Buffer Zone', Environment and Planning A, vol. 33, 6, 2001, pp. 1101-1123

SCIENTIFIC MULTIDISCIPLINARY SCIENCE CONFERENCE 2016 SOCIAL SCIENCES AND ARTS

EVOLUTION OF SOCIAL RESPONSIBILITY OF ECONOMIC ENTITIES

Prof. Dr. Elena L. Andreeva[1,2]

Cand. Yuliya G. Myslyakova[1,3]

Dr. Dmitry A. Karkh[2]

Prof. Dr. Vladimir G. Loginov[1]

Cand. Artem V. Ratner[1]

[1] Institute of Economics of the Ural branch of the Russian academy of sciences, **Russia**
[2] Urals state university of economics, **Russia**
[3] Ural federal university named after the first President of Russia B.N. Yeltsin, **Russia**

ABSTRACT

The retrospective excurse is carried out showing basic evolutionary stages of development of social responsibility of economic entities during 1930–2016. Such stages are revealed as: well-doing business practice, guaranteeing the employment and safety of work, formation and development of local community, preservation of environment, orientation on a consumer and a quality of products, stimulation of innovative activity. The evolutionary stages of social responsibility development by economic entities listed form social potential for transition to a new type of industrial development. Specific attention is paid to neo-industrialization experience in Germany, that is carried out in the form of development of ultramodern production sector within the concept of "the Industry 4.0". Within its is carried out an integration of production and automation sector with information and communication technologies. The investigation carried out suggest an idea that new industrialization is, first of all, a new stage of evolutionary development of social and production consciousness, when the human is perceived as the valuable resource having the bigger importance, than natural resources or the wealth accumulated. Therefore social responsibility plays an important role on current stage of neo-industrialization. The results of practical research illustrate high theoretical and practical importance of the author's approach to the model of social responsibility of economic entities and necessity of its realization in a life.

Key words: social responsibility, neo-industrialization of economics, innovation activity, human potential, industrial development

INTRODUCTION

Current geopolitical situation is characterized through aspiration of many states to strengthen their influence on world community due to development of groundbreaking technologies and realization of innovative ideas. It serves as a direction for the majority of countries to pass to new type of industrial development representing a specific system of economic managing on the basis of new knowledge formation, inventions creation, application of the advanced means of production suitable for a mature stage of civilization development of society and a high standard of population living. The features of new industrialization emphasizing its methodological basis were investigated by many researchers. So, these features are described as: realization of strategies of diversified industrial complex revival and of increase of its economic role (V.

Ryazanov; G. Vechkanov [14]), wide use of the latest developments of science in organic interrelation of enterprises with social and natural environment (V. Cherkovets [6]), presence of industrial production in which the great value is given to a quality of information space and the new constructional materials are used (S. Lyubimtseva), the large-scale technological rearmament of real sector of economy (A. Neshitoy), public jump on a higher level of technological development leaning on intellectual potential of the country (B. Davydov, P. Evstratov), active use of the most important domestic innovative tools of the technological reorganization of industry promoting a creation of new hi-tech sectors of economy (O. Romanova, N. Bukhvalov), intensive interaction of production, science and education (S. Bodrunov [4]).

As one of the leaders in the sphere of new industrialization acts the German economy, a basis of which growth is the industry [1, p. 177]. Neo-industrialization in Germany, according to the remark of the president of the German academy of technical science, Doctor of physical sciences, professor H. Kagermann, is carried out in the form of development of ultramodern production sector on the way to "the Industry 4.0" within which is carried out an integration of production and automation sector with information and communication technologies [7, p. 30-31]. "Smart" factories arise which use high technologies and at that are oriented on individual orders like "Smart Factory KL" on production of soap of professor D. Zuelke, a head of the production automation department at Technical university of Kaiserslautern. The Bremen institute of production and logistics develops more perfect mechanisms, such as omnidirectional chain driving gears for building machines, and also one of the projects is aimed on increase of safety and efficiency of floor transport means (internal logistics) by means of information and communication technologies. The Institute of high-frequency equipment of F. Braun (Berlin) studies the key technologies applied in the field of microwave equipment and optoelectronics. The "BMW" company plans to develop the software that makes able to control production and to correct mistakes in real time. In Stuttgart within the Arena 2036 platform on the basis of University is carried out a cooperation of various partners from science and economics which project a production of machines and equipment of the next generation.

These features suggest an idea that new industrialization is, first of all, a new stage of evolutionary development of social and production consciousness when the human is perceived as the valuable resource having the bigger importance, than natural resources or the wealth accumulated.

It is possible to provide readiness of society only by full satisfaction of mass material (income) and non-material needs of the population: long and healthy life, familiarizing with culture and science, creative and social activity, preservation of environment and life in a uniting with it, and also transition to satisfaction of their considerable differentiation [11]. All this serves as the main condition of successful transition to the new type of national economy industrialization.

Satisfaction of all needs listed above is able to provide a social responsibility of economic entities.

BASIC STAGES OF SOCIAL RESPONSIBILITY DEVELOPMENT

Social responsibility of economic entities in its content was changed simultaneously with evolution of social cohesion and was an answer reaction on reevaluation of those values, which seemed earlier firm in the society.

The 1st stage (1930th – 1950th). During the Great depression of the 1930th years the main care of the majority of economic entities was an elementary survival, to provide which was possible by the production of products and services necessary for society with free market economy, ensuring at the same time a work for citizens and the maximum profits and reward for shareholders.

M. Fridman defined the essence of social responsibility of those times as use of energy and resources in activity directed on increasing a profit by the conditions that the entity adheres to the rules of the game established… (and) participates in open competitive fight, without resorting to swindling and deception [12].

This stage can be designated as especially economic within which social responsibility of an economic entity is directed on maximizing the income of owner and is realized by the motto "the maximizing a profit, without violating a law is the only duty of business".

The 2nd stage (1950th – 1990th). In the 1950th years the concept of a social role of economic entities started to change. It was caused by the strengthening autonomy of owners from management in the context of activity of a firm and by appearance of new approaches to management thanks to which economic entities started thinking also about other purposes besides simple increase of income. At the same time a cooperation starts to develop between business and government.

In the1950th years the first thorough work was appeared "Social responsibility of the businessman" of Houard R. Bowen. The main idea is that the organization should balance purely economic targets with economic and social interests of these composing stratums.

In the 1960th years businessmen and economists appeared who argued as follows: "Large business turns into noticeable economic force. So, there comes the moment when large business has to take part of responsibility for society in general [9].

At the end of the 1960th in public consciousness there was appeared an opposition to the world of economy management – the was displayed an active interest in civil rights, pollution of environment by industrial waste. The trade unions played a big role. All this led to appearance of the concept of "corporate social responsibility" which at an original stage of its development was directed on solution of the questions of social securing of own personnel.

Then, in the 1970th – 1980th to the foreground in the world in economic part came saving the Third World countries from hunger, protection of flora and fauna, etc. The important task is also preservation of public health, which depends on economic stability or instability [10, p. 64]. Now economic entities have to direct a part of their resources and efforts to social development of society. The social responsibility starts being interpreted as a voluntary contribution to development of society, directly related on primary activity of company and exceeding the frameworks legislatively determined.

The 3rd stage (the end of the 1990th – the current time). This stage of social responsibility development of economic entities is related on globalization processes. For this period the concentration of power in hands of relatively small amount of corporations is characteristic. Multinational corporations have been more and more depending on their shareholders. Position of companies becomes paradoxical: in spite of the fact that they have a huge influence behind the borders of states, they, nevertheless, become more and more vulnerable, dependent on opinion of various groups making impact on policy. Thus, long-term profitability is defined now by the readiness of organization to observe public laws, and is based on three "pillars". Firstly, this is an employer's responsibility for more effective managing and leading of a company. Secondly, the factor which is a support of long-term profitability is the competitiveness growth. Thirdly, the important support for long-term profitability of company is shown the forecast for the future and preparation for it.

This stage can be characterized as a stage of participation activation of economic entities in various spheres of society's life for the purpose of receiving the long-term economic effect.

So, it is possible to mark out some evolutionary steps of social responsibility development by economic entities:

1. *Fair business practice* – assistance to accepting and spreading the fair relations with employees, suppliers, business-partners and clients of the companies.

2. *Guaranteeing the employment and safety of work* – support of the existing and creation of the additional workplaces, carrying out the safety conditions on workplaces, in according to the legislatively fixed norms of health protection.

3. *Formation and development of local community* – patronage, philanthropy, charity as the forms of ensuring a cultural development of society.

4. *Preservation of environment, namely transition to the principles of sustainable ecologically safe socio-economic development* – ecological modernization of production which result is, on the one hand, reduction of power, water and materials consumption on the unit of the production made, on the other hand, minimization of harmful emissions and dumping.

5. *Orientation on a consumer and on output of qualitative products* – production of the products of high quality demanded by society.

6. *Ensuring the innovative activity of enterprises.* The main aspects of displaying of this social responsibility form are: stimulation (moral and material) of innovative activity of employees; development of human resources through the training programs and the programs of professional development; socially oriented restructuring, namely carrying out the structural transformations taking into account the interests of personnel.

FOREIGN EXPERIENCE OF SOCIAL RESPONSIBILITY FORMATION BY HIGHER EDUCATION INSTITUTIONS

It seems to be relevant to consider social responsibility on the example of higher education institutions which activity is oriented directly on social development.

As for *the British model* of social responsibility, it presupposes educational, cultural-developing and health care function.

The American model of social responsibility of higher education institutions provides an open interaction of educational organizations with local communities [8].

The German model of social responsibility of higher education institutions is focused on ensuring the social comfort of country's residents: ensuring a general availability of education, including for the youth with migratory roots; ensuring a safe activity of society in the course of entrepreneurial practice; humanitarian assistance; care of elderly people.

The Israeli model of social responsibility of higher education integrates in itself educational, ecological and innovative responsibility.

The Scandinavian model integrates in itself economic, ecological and labor responsibility [13, p. 17-19].

PROPOSITIONS: INNOVATIVELY FOCUSED MODEL OF SOCIAL RESPONSIBILITY OF RUSSIAN HIGHER EDUCATION INSTITUTIONS

Russian model of social responsibility of higher education institutions is situated just at initial stage of its forming. To the opinion of different authors (S.V. Barablina, L.L. Mekhrishvili [2]; Zh.S. Belyaeva [3]; N.N. Bogdan, N.N. Klimova [5]), higher education institution has to carry out following functions:

– educational – through training the highly qualified staff (elite of society);

– market – through forming the labor market;

– cultural – through development of behavioral standards;

– development of town environment, region, country;

– social (forming an intellectual space)

– cooperation with organs of state governing in carrying out the actions of socially directed activity.

It's evident that these models of social responsibility of higher education institutions are focused on improvement of social life of civil society, however in them the economic target of the measures offered isn't shown.

It seems to be that as the purpose of social responsibility development by higher education institutions has to serve formation and development of the social potential providing the transition to a new type of industrialization. The features of the new industrialization given above cause consideration of it through a prism of such potentials as personnel, research, international, social and production potential. Moreover, the greatest return or productivity of involvement of these potential types, providing a peculiar "flourishing" of the phenomenon of social responsibility, is defined just by completeness, complexity and complementarity of the components integrated into the innovatively focused model of social responsibility of higher education institutions:

– forming the personnel potential of new industrialization is possible through ensuring the availability of technical education and increasing its quality due to introduction of the scientific schools providing the creation of the intellectual atmosphere stimulating an exchange of knowledge between teaching staff, students, the leading industrial and innovative enterprises (educational function);

– forming the research potential of new industrialization through strengthening of activity of postgraduate study and research supervisors; organizing the interaction of higher education institutions with enterprises within carrying out the researches demanded; recruiting the leading experts of industrial enterprises in the projects of knowledge-intensive products creation carried out by higher education institutions as the experts (research function);

– forming the international potential of new industrialization through activation of interaction with foreign higher education institutions within research projects, involvement of teaching staff of foreign higher education institutions from the countries – partners of Russia by the BRICS and Eurasian economic union into carrying out the scientific schools for the purpose of experience exchange and generation of the ideas demanded in the world (international function);

– forming the social potential of new industrialization through satisfaction of inquiries of local communities, including in ensuring the health; involvement of youth into social (ecological) projects and initiatives, formation of the interest by youth in employment at industrial enterprises and providing a worthy standard of living, both of students and teaching staff (social function);

– forming the production potential of new industrialization through activating the interaction of higher education institutions with enterprises within creation of basic chairs; through passing the work practice by the students of older years and the externship by the graduates of technical specialties; through involvement of students and graduates into the objects of innovative infrastructure: techno-parks, business incubators, innovative projects, etc.; through joint (higher education institution + industrial enterprises) development of the educational programs (disciplines) adapted for the activity of modern Russian enterprises and situations in industry; through organization of training for the leading teachers at industrial enterprises for the purpose of receiving by them the relevant knowledge and of transferring it to students in the teaching process (production function).

It'll be received that this understanding of social responsibility of higher education institution expands significantly its functions and increases the scientific and practical importance for ensuring the transition to a new type of industrialization.

CONCLUSION

The research conducted testifies that the acting model of social responsibility of higher education institutions doesn't allow to prepare fully a society for transition to the new type of industrialization and to create necessary potentials, that's its level of innovative orientation is very low. It serves as an incentive for realization of the model offered which will allow providing:

– the graduates with necessary level of modern knowledge, with receiving the profession and competences demanded and necessary for realization of their labor, innovative, entrepreneurial and creative potentials;

– the industrial enterprises with highly qualified personnel, innovative research and development works, fresh ideas demanded in the world;

– the staff of a higher education institution with social guarantees, comfortable working conditions, social investments;

– the regional communities with social and ecological projects, with youth initiative in participation in innovative projects;

– the state power with assistance to innovative and industrial development, and also with formation of active living position of youth.

REFERENCES

[1] Andreyeva Y.L., Date M., Ratner A.V. Russia and Germany: Search for a new model of neo-industrial social state / Economy of region, Russia, issue 1 (41) / pp. 169-182, 2015. (doi: 10.17059/2015-1-15)

[2] Barablina S., Mehrishvili L. Social responsibility: the role of higher education institutions / International organizations research journal, Russia, issue 1 (36) / pp. 203-218, 2012.

[3] Belyaeva Z. Systemic approach to social responsibility: building and mapping sustainable practices at Ural federal university / 8th EMAB conference readings book proceedings, Italy / pp. 158-170, 2015.

[4] Bodrunov S.D. Integration of manufacturing, science and education as a basis for the re-industrialization of Russia / World economy and international relations, Russia, issue 10 / pp. 94 – 104, 2015.

[5] Bogdan N.N., Klimova N.N. Social policy and social responsibility of organizations in modern society, Russia. Publishing house of Siberian academy of public service / 272 p., 2008.

[6] Cherkovets V. Peculiarities of the new stage of Russia's innovative development / Economist, Russia, issue 12 / pp. 38-55, 2008.

[7] Prospects of the economy of the future : interview with H. Kagermann / DE Magazin Deutschland. Policy, culture and economics, Germany, issue 4 / pp. 30-31, 2013.

[8] Filbert M.I. Model of a socially-active university as a possibility to accomplish "the third role" of a higher educational institution / Vestnik [News] of Samara state university of economics, Russia, issue 8 (106) / pp. 118 – 121, 2013.

[9] Juholin E. For business or the good of all? A Finnish approach to corporate social responsibility / The journal of social policy studies, Russia, vol. 3, issue 3 / pp. 379 – 396, 2005.

SCIENTIFIC MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

[10] Kuklin A.A., Vasilyeva E.V. Welfare and public health of the population of Russia: Adaptation to economic instability / Economy of region, Russia, issue 1 (41) / pp. 64-76, 2015. (doi: 10.17059/2015-1-6)

[11] Romanova O.A. Cooperation of the state, corporations, institutions of the civil society within the frames of the national industrial policy / Izvestiya (News) of the Urals state university of economics, Russia, issue 1 (45) / pp. 39 – 44, 2013.

[12] Solodkaya M.S. Moral-ethical responsibility of a subject of management / Credo, Russia, issue 11 / 1998 [Electronic resource]. URL: http://www.orenburg.ru/culture/credo/13/4.html/

[13] Vakhshtayn V.S. System of education of Finland: progresses of school teaching and "the third role" of universities / Relevant questions of development of education in the OECD countries, Russia / ed. by M.V. Larionova. Publishing house of Higher school of economics / 2005.

[14] Vechkanov G. The modernization and new industrialization / Bulletin of Sankt-Petersburg state university of economics, Russia, issue 2 (45) / pp. 7-19, 2011.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

EXPORT POTENTIAL ASSESSMENT OF RUSSIAN PHARMACEUTICAL CLUSTERS

Prof. Dr. Elena L. Andreeva[1,2]

Elena V. Sapir[3]

Igor A. Karachev[3]

Daniil V. Zherenkov[1]

[1] Institute of Economics of the Ural branch of the Russian academy of sciences, **Russia**
[2] Urals state university of economics, **Russia**
[3] P.G. Demidov Yaroslavl State University, **Russia**

ABSTRACT

This article brings together geo-economic cluster theory and enterprise export potential theory to undertake the export potential assessment in the pharmaceutical industry. Qualitative and quantitative comparative analysis is used to identify correlation of micro and meso level cluster determinants (production potential, market potential, financial potential and labour potential), associated with high and low export potential assessment in Central Russia pharmaceutical clusters located in Russian regions. Findings identify a strong link between production potential as well as market potential and high exports potential capacity in most of clusters. The econometric model is deployed to clarify an objective causal link of the enterprise exports potential growth with the competitiveness factors of cluster origin (interactive business chains, local production chains width etc.). The authors worked out a set of measures to maximize the competitive advantages of cluster organization in the export activity of the enterprises in the pharmaceutical industry. Conclusions and recommendations of the study can be claimed by experts concerned with the export-oriented strategies of pharmaceutical enterprises in Russian regions based on cluster approach.

Keywords: regional cluster, export potential of the enterprise, geo-economics, micro-, meso- and macro-level factors, pharmaceutical industry

INTRODUCTION

Objective trends in international division of labor development together with modern world economy transformations strongly dictate for Russia the need of integration into global economy [1]. So far Russian companies face the challenge for competitive development on the base of global value chains involvement in order to get access to global economic benefits and provide the long-term sustainable development and public welfare. Aggravation of geopolitical and geoeconomic contradictions, increased economic instability, rising financial tensions make particularly relevant the issue of seeking for new destinations and tools for foreign economic relations development that allow to generate new sources and resources of economic growth. Paradoxical as it sounds, increase in competition in the world markets and global economic turbulence

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SCIENCES AND ARTS

actualize the search for solutions of domestic economic problems through the strengthening of international competitiveness.

Among the priority tasks for the Russia's national economy development in accordance with the RF Government Program «The Pharmaceutical and Medical Industries Development for 2013-2020», there is the creation of innovative export-oriented domestic pharmaceutical and medical world-class industry. Innovative high-tech production in Russia will provide the quality growth of domestic technology and drugs produced up to the world level that will enable in turn exports increase and successful competition with foreign producers both on the domestic and foreign markets. Applied science and engineering will give a new impetus to the Russia's economy development.

In accordance with the State Program the export capacity of the Russian pharmaceutical industry have to reach a new level. The volume of exports of pharmaceutical products in 2020 should reach 38 billion rubles, while the volume of exports of medical equipment and medical supplies - 17.4 billion rubles. This, in turn, requires the rapid growth of enterprises exports potential through the regional clusters organization and development [2, p. 12].

Thus, the task for this research was to identify the main factors contributing to the growth and efficiency of the enterprises exports potential implementation and to model development of the enterprise exports potential as the variable formed under the influence of these factors. A wide variety of factors that affect the export potential of companies under the current conditions actualizes the need for their particular classification, systematization and ranking in order to highlight the most important factors to improve the export performance of the enterprise. The analysis aims to address the following questions:

- How do micro- and mesolevel factors impact the exports potential growth?
- What are the main links between cluster development and major constituents of exports potential (production, financial, marketing, labor) improvement?
- What combinations of these factors result in high or low exports potential performance?

THEORETICAL FRAMEWORK AND RESEARCH ISSUES

The article seeks to answer these questions by bringing together exports potential theory [3, 4, 5] and regional clusters theory [6, 7, 8] to explore "What configurations of micro- and mesolevel factors are associated with high and low firm's exports potential performance in Russian emerging pharmaceutical clusters?" To answer this research question, we adopt a set-theoretic analytic approach, namely econometric modeling using math statistics.

Export potential is a scientific category, which expresses, in a concentrated form, the essence of the enterprise economic opportunities to increase export sales and export earnings due to a whole range of specific factors. We can select the following approach to the concept of «enterprise export potential» (hereinafter referred to as the «EEP»):

1. The resource-based approach (EEP as a set of factors and resources) [9];

2. The functional approach (EEP as a dynamic component of economic potential, providing the company's activity in the foreign market) [10];

3. The competitive approach (EEP as the ability to identify and realize competitive advantages on the foreign market) [11];

4. «Commercial» approach (EEP as the ability to obtain the maximum revenue from sales in the foreign market) [11];

5. Progressive approach (EEP as the ability to further development in the global environment) [12].

We rely on progressive approach to the export potential, which in combination with the unique regional features creates a fundamental basis of the analysis, calculation and prediction of the enterprise export potential. Thus, the factor of regional structural organization refers to the decisive ones in the formation, increase or decrease of export potential, especially in such a large and geographically diverse economic system as the Russian economy.

Cluster theory as a concept of compactly arranged economic agents and institutions, interconnected and deeply integrated into the regional economic system, in particular, allows identifying the geo-economic situation of the enterprises-exporters, to model their potential in terms of growth in world space. Regional cluster is local, but necessary environment for creating points of global growth and reproductive systems that have access to the global economy and are formed within the economic rather than administrative boundaries. Inside a cluster the basic components of export potential are establishing (production, labor, marketing and financial elements).

FACTORS OF EXPORT POTENTIAL GROWTH

The study embraces the exports potential factors analysis covering three levels: macro level, meso level (regional and cluster sub-levels) and micro level. The factors contributing to the great extent into enterprise exports potential increase and ensuring the genesis of geo-economic growth points in the local environment are identified in the study.

The micro-level factors include the following elements: an enterprise system of strategic and marketing planning, product quality, the level of costs and prices, the effectiveness of brand management system, the financial state of the enterprise [10, p. 93]; product concept, the level of business diversification, research and development base of the enterprise; time existence of the company, the industry or sector of enterprise activity, size of the enterprise; factors associated with the human capital development [13, 14]; factors associated with innovation and technological development; sophistication and breadth of the export-import chains. All the micro-level factors, as the study found, can be divided into three groups according to the stages of the production process.

The meso-level factors we divided into factors of cluster and regional sublevels. The first sublevel (cluster) include: a compact localization of production and services; internationalization of experience and technology, the removal of barriers to enter foreign markets; facilitating access to finance, to new contractors and the necessary marketing information; development of inter-organizational relationships within the cluster, a unique combination of infrastructure conditions and institutional support. The

second sublevel (regional) include: the maturity of commercial, financial and banking networks; the quality of the most important institutions in the region, namely the protection of property rights, the rule of law, the level of business regulation, export policy; urbanization factor, localization of companies within urban agglomerations [13, 14].

Impact of macro-level factors significantly manifested at the stage of realization of export potential. Managing them at the enterprise level is either impossible or difficult due to mainly supra-regional (national) nature of their influence. Therefore, in the analysis, registration, monitoring and forecasting macro-level factors it is necessary to achieve the maximum adaptability of enterprises to their conditions of exposure.

METHODOLOGY AND MODEL

In the selection of economic variables for inclusion them in the model, we guided by the following basic principles. Firstly, each variable is to have a theoretical substantiation in terms of closeness of connection between it and the resulting variable. Secondly, it is recommended that the number of independent variables were small and at least 5-6 times less than the number of observations. Thirdly, the explanatory variables should not be bound by functional or close correlation dependence, as this may distort the results.

In general, the econometric model of the export potential can be expressed as follows:

$$Y = f(X_1,...,X_p) + \varepsilon, \quad (1)$$

Y - the export potential of the enterprise; $f(X_1, ..., X_p)$ – explaining part, depending on the values of micro-, meso- and macro level factors; ε - the random component. The study describes the coefficients of the regression equation and the estimation of their significance. The coefficients of the regression indicate how many units at an average varies Y, when X increases by one unit, what means they can serve as measures of closeness of the connection. Assessment of the significance of regression equation parameters is based on the definition of a standard error (the standard deviation of the estimates obtained in multiple random sample from the regression line) for each factor.

The main factors affecting the export potential of the pharmaceutical companies, aggregated in four types of potential: production potential, marketing potential, labor potential and financial potential (Table 1).

The authors carried out a sample of pharmaceutical enterprises of the Central Federal District (CFD), which already account for scientific and industrial core of regional clusters, as well as their potential participants. Cluster building is actively conducted in five regions of the Central Federal District (Moscow Region, Yaroslavl region, Belgorod region, Kaluga region and Oryol region).

Evaluation of impact of micro, meso- and macro-level factors on the pharmaceutical companies' export earnings was implemented on the basis of two econometric models and correlation matrices (for meso-level factors (regional sub-level) and macro-level factors).

Table 1. The aggregation of company's exports potential factors

Type of potential	Factors	Groups of factors
Production (X_1)	– Investment in research and development; – Fixed assets, technological capabilities; – Factor of active implementation of research and innovation activity at the company level and in the cluster; – Level of capacity utilization (the possibility of identifying and formation of reserves); – Intangible assets.	Micro- and meso-level factors
Marketing (X_2)	– Market share; – The level of cluster internationalization; – Accumulation, mobilization and sharing of critical and scarce resources (providing of interorganizational loans); – Implementation of marketing innovations; – Implementation of organizational innovations; – Selling expenses within the company and cluster.	
Financial (X_3)	– The possibility of obtaining export credits; – The ratio of debt to equity.	Micro-level factors
Labor (X_4)	– The possibility of training in the workplace; – High salaries; – Education of employees; – The level of labor productivity.	

The analysis of correlation coefficients will reveal how close the trends of the enterprises export potential and the state of the regional space are.

RESULTS OF THE ANALYSIS

Within the framework of modeling the impact of cluster sublevel factors on the export potential data were grouped into five regional clusters (indicators for the whole cluster were calculated by summing the similar indicators of enterprises – cluster participants). The most important ones of the four aggregated factors identified in the study of micro-level factors are the production and marketing potential. The number of factors to be included in the second model, built on the principle of time-series was limited by econometrics requirement: at least five measurements must fall on the one factor. Since the analysis period comprises five years, the authors selected one factor for the model. At the same time production potential tends to the internal environment of enterprises and does not allow distinguishing between the impact of the micro-level and meso-level factors (cluster sublevel).

In turn, the marketing potential is aimed to the promotion of products, including exports, to the new markets and opens up for the company opportunities to develop its interaction with customers and suppliers within the cluster through optimization of

commercial expenses. Based on the above, we offer to evaluate the influence of cluster sublevel factors through the marketing potential.

For each cluster authors have made a record of the regression equation, evaluated the adequacy of the values of the model coefficients, and identified the presence and closeness of the relationship between the cluster sublevel factors and export potential of pharmaceutical companies (Table 2).

Table 2. Estimates of the linear regression model for the 2010-2014

Indicator	Yaroslavl cluster	Moscow cluster	Kaluga cluster	Belgorod cluster	Oryol cluster
Multiple R	0,922	0,699	0,933	0,086	0,985
R-squared	0,850	0,488	0,871	0,007	0,970
Normalized R-squared	0,800	0,318	0,827	-0,324	0,960
Standard error	151 014	199 520	25 926	92 296	48 626
Observations	5	5	5	5	5

For all clusters the tabulated value of Student t-test at a significance level of 95% and the number of freedom degrees equal to 3 was 3,182. After comparing the actual value of t-statistics with the tabulated value, in two of the five clusters' factor coefficients were statistically insignificant (Moscow cluster: 1,692 <3,182; Belgorod cluster: 0,149 <3,182). This conclusion is also based on the calculated confidence intervals for the ratios that contain a null value. Thus, the regression equations we can construct for the remaining three clusters (Yaroslavl, Kaluga and Oryol).

$$Y_{EEP_{Yaroslavl_cluster}} = 0{,}091X_2 + 298719$$

$$Y_{EEP_{Kaluga_cluster}} = 0{,}050X_2 + 277539$$

$$Y_{EEP_{Oryol_cluster}} = 0{,}099X_2 + 172988$$

The significance of econometric models, as well as the importance of the determination coefficient confirmed the calculated actual values of the Fisher F-test, which turned out to be higher than the corresponding tabulated values at the level of reliability of 95% (Yaroslavl cluster: 16,991> 10,13; Kaluga cluster: 20,178> 10,13; Oryol cluster: 98,183> 10,13).

According to the study of meso-level factors impact (cluster sublevel) on the dynamics of the export potential of Russian pharmaceutical companies, we came to the following conclusions. Russian pharmaceutical market focused now on the producing non-original goods is targeted more on the use of economies of scale, rather than investing in the development of original products. In this connection the implementation of marketing and organizational innovations aimed at getting a quick effect has special importance. Yaroslavl, Kaluga and Oryol pharmaceutical clusters are functioning according to this principle. In contrast to these clusters Moscow and Belgorod clusters are increasingly investing in research and development, thereby renewing its product line. Optimization of commercial expenses in the cluster is another aspect of marketing potential impact on the enterprises export increase.

CONCLUSIONS AND RECOMMENDATIONS

So, as it was shown, export potential of pharmaceutical cluster serves to national economic security [15].

Findings identified an objective causal link between enterprise export potential growth and competitiveness factors of cluster origin (network business chains, production functions interconnectedness and flexibility, production localization). Also there was proved the need for the following activities in order to maximize the competitive advantages of the cluster organization in export area:

Firstly, the regional pharmaceutical companies should be established within the framework of cluster structures in order to become competitive in the global market.

Secondly, an important aspect of the development of the Russian pharmaceutical industry export potential is organization at the regional level of an effective system of state support of innovation and investment (especially with regard to foreign direct investment) and export activities.

Thirdly, each cluster should have the office responsible for the continuous monitoring of the particular situation of the global commodity markets and capable for regularly generating strategic recommendations in response to the changing demands of the global competitive environment.

ACKNOWLEDGMENTS

Professor Sapir and researcher Karachev's contribution to this research was funded from the Russian Humanitarian Science Foundation under grant agreement (Project No 15-32-01043, "Russian Regions' Integration into Global Area through the New Organizational Structures Development and Adaptation").

REFERENCES

[1] Andreeva E.L., Ratner A.V. Role of interregional partnership in socioeconomic developing of region / Economy of region, Russia, issue 1 / pp. 176-181, 2011.

[2] Balashov A.I. Formation of a sustainable development mechanism of the pharmaceutical industry: the theory and methodology / Sankt-Petersburg: SPSUEF Publ., Russia / 160 p., 2012.

[3] Gubin A.M. Improving foreign trade activities of mechanical engineering enterprises in the conditions of liberalization of FEA. Thesis for Scientific Degree of PhD of economic sciences / Moscow: MAEP Publ., Russia / 203 p., 2006.

[4] Savikov O.V. Assessing the potential of small and medium sized foreign trade activities of business structures. Thesis for Scientific Degree of PhD of economic sciences / Saint Petersburg: SPbGIEU Publ., Russia / 204 p., 2010.

[5] Samokhin R.V. Assessment of the export potential of the paint industry. Thesis for Scientific Degree of PhD of economic sciences / Saint Petersburg: ENGECON Publ., Russia / 172 p., 2000.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS S G E M 2 0 1 6

[6] Kotljarova S.N. Formation of cluster policy in the regions of Russia / Economy of region, Russia, issue 2 (30) / pp. 306-315, 2012.

[7] Shelomentsev A.G., Ratner A.V. Theoretical aspects of clustering in the mineral resources base development / Economy of region, Russia, issue 1 (29) / pp. 242-247, 2012.

[8] Petrov A.P. Laws of formation of regional cluster initiatives / Economy of region, Russia, issue 1 (33) / pp. 133-142, 2013.

[9] Sychev M.S. Development of methodological support of analysis and assessment of the export potential of the enterprise. Thesis for Scientific Degree of PhD of economic sciences / Yoshkar-Ola: Perm State Technical University Publ., Russia / 156 p., 2012.

[10] Volkodavova E.V. Theoretical and methodological bases for the formation and implementation of the export potential of enterprises. Thesis for Scientific Degree of PhD of economic sciences / Samara: SGU Publ., Russia / 347 p., 2007.

[11] Yakovlev G.I. Formation of the company's market strategy: market aspect / Saratov: SSU Publ., Russia / 435 p., 2010.

[12] Rusakov I.A. Managing the development of export potential of the machine-building complex. Synopsis of the thesis for Scientific Degree of PhD of economic sciences / Saratov: SSSEU Publ., Russia / 28 p., 2012.

[13] Bernard A., Bradford J., Redding S.J. and Schott P.K. Firms in international trade / Journal of Economic Perspective, USA, volume 21 / pp. 105–30, 2007.

[14] Mayer T., Ottaviano G.M. The happy few: the internationalization of European firms: new facts based on firm-level evidence / 2007 [Electronic resource]. URL: http://bruegel.org/wp-content/uploads/imported/publications /BP_Nov2008_The_happy_few.pdf. (date of access: 18.04.2016).

[15] Tatarkin A.I., Kuklin A.A. Changing the paradigm of region's economic security research / Economy of region, Russia, issue 2 (30) / pp. 25-39, 2012.

SCIENTIFIC CONFERENCE SGEM 2016 3rd INTERNATIONAL MULTIDISCIPLINARY

FDI INTENSITY AS SIGNAL IN THE DECISIONAL PROCESS OF MULTINATIONAL COMPANIES' EXPANSION

PhD Candidate Andrei Răduțu

PhD Candidate Ioan Lucian Alexă

PhD Candidate Georgiana Oana Moraru

Bucharest University of Economic Studies, **Romania**

ABSTRACT

The expansion of multinational companies is a complex process that depends on a lot of factors. Most of the usual analyzed factors account for specific advantages highlighted usually by the eclectic paradigm proposed by Dunning. The aim of this paper is to go past those usual factors and to observe how the multinational companies act based on information available about other companies from certain regions and if such information is a sufficient signaling mechanism to support a decision or if are there other factors that are also relevant in the first evaluation of such decisions in order to be implemented. The paper analyzes aggregated data at macro level concerning foreign direct investments flows and tries to predict the possible trends in the behavior of multinational companies at strategic individual level. In order to identify these effects the number and value of green field projects and mergers and acquisitions are analyzed for a sample of European Union member countries using a panel model to estimate the relation between different types of foreign direct investments. Also to account for other factors that can influence the investment decisions the quality of infrastructure is introduced in the model as a control factor.

Keywords: foreign direct investments, multinational companies, expansion, decisional process

INTRODUCTION

Foreign Direct Investments (FDI) are seen as a determinant factor of the economic growth by the economic actors, international institutions, politicians or economists, process which is leading then to the solving of various social-economic problems in the developing countries [1]. In the present economic context, the investment decisions have to be adapted to the business environment, which is finding itself in the process of continuous change, the investors being obliged to adapt and act as fast as possible to the demand changes.

The participants with capital in FDI are dividing themselves into Greenfield investments, mergers and acquisitions or companies' development, each of these alternatives, having a specific characteristics and impact towards the exports and growing sustainability. In the developed countries, the Greenfield investments are seeking the top technologic industries and benefit from the preferential regime, as a guardian of the new industries (infant industries) [2].

LITERATURE REVIEW

The foreign investors take into consideration different social-economic aspects before they are localizing their business. An indicator which contributes to these decisions is the Gross Domestic Product (GDP), more specific its growing rate. A high level of the income would imply at its turn a higher level of production, which contributes to increasing the investors' trust [3]. GDP represents the indicator which illustrates the economic performance of a country and it is reflected further through higher productivity and consumption rates. It is to be expected that the macro-economic conditions will have an influence in attracting FDI. The countries with a higher GDP/capita present a corresponding higher interest for the foreign investors, determining in this way the international companies' localization, as an effect of the trust in the investing environment [4].

The business environment represents also a determinant of the foreign investments. A company which wants to extend on a global level will evaluate its options before it will decide at a location for its investment. A main determining factor is represented by the easiness with which it can enter on the market and further on, how difficult or not it is to develop its activity. Although, at the European level, the majority of economies became free and they have opened most of their sectors for foreign investments, some fields still continue to be protected by the external competition. Even though a foreign company could enter on a specific sector, it can encounter other obstacles for its access and market operations. A high number of legislative procedures, excessive requests for licensing and authorization, as well as, the export and import processes, which are time consuming, are finding themselves amongst the factors which can make an economy less attractive for the foreign investors.

The quality of institutions is an important determining factor of the FDI activity, especially for the countries in process of developing. The weak quality of the necessary institutions in order for a well-functioning of the markets, determines a high level of corruption, increasing of costs for doing business, which at its turn, enhances the diminishing of the foreign investors' activity. If, in addition to these costs, the administration of these institutions is reflected in a poor infrastructure, the return of the investments is decreasing.

At the microeconomic level, it can be discussed that the triad of ownership, localizing and internalizing rights is influencing the foreign direct investments, as an eclectic paradigm of production [5]. Each component of this paradigm brings advantages, which from their moment of identification will influence the foreign investments in the sense of extending their production towards new territories.

Even though a performing economic environment is attractive for the foreign investors, the FDI effects towards the economic growth are having opposite effects, determining a debate in the economic literature. Blomström, Kokko, and Zejan [6] show that both, in the developed countries, as well as in the countries in process of developing, the inflow of FDI has a positive effect on the economic growth rate. Mullen and Williams [7] conclude that FDI can affect the regional productivity and the economic growth.

Another part of the literature underlines the difference between the growth level created by the Greenfield investments and the growth determined by the investments in mergers & acquisitions. Wang and Wong [8] showed that the Greenfield investments and the ones from mergers & acquisitions have a different impact on the economic growth.

While the first ones promote the economic growth, the latter are having an inverse relationship with the economic growth of the host country. Mergers & Acquisition could be advantageous therefore only in a host country which reached a certain level of the human capital. Other empiric studies showed that the marginal effect of the mergers & acquisitions towards the foreign direct investments is lower than in the case of Greenfield investments [9].

HYPOTHESIS

Foreign investment is a long term process which usually requires some time before it generates results. Moreover the process of investing in a foreign country usually is a multi-stage process. Green field investments are, usually, the most costly and the ones that have the highest time required to reach maturity therefore are the ones that are being made only in the latest stages of the investing process. In the first phase multinational firms start with small investments or minority participations to local entities in order to understand and test the local business environment. After a starting period, as more and more multinational companies invest in certain country and the ones already present there gain more knowledge, the investing process can lead to consolidations of the MNEs activating in a specific country by gaining majority participations in domestic firms. Another method of consolidating is by mergers or acquisitions of domestic firms by MNEs.

Because gathering information about a specific country's economic environment is usually costly and time consuming, MNE may try to reduce the asymmetrical information about a specific country socio-economic environment by analyzing what other MNEs are doing. Therefore the FDI of other companies in a specific country may act like a form of signaling used by MNEs that are not present on that market to decide whether to enter or not, and more importantly how to enter. Therefore the purpose of this paper is to analyze how MNEs act, based on the information provided by other MNEs.

H1: The FDI stock will attract more investments (as is can be perceived by other MNEs as a good business environment)

After a MNE decides to enter a foreign country, it remains to decide how to enter, thus other country specific traits may influence this decision. Such factor can include: infrastructure, fiscal regime, political stability, geographical factors, dimension of the target markets and many other. The aim of this paper is to see how different types of entering modes chosen by MNEs affect each other. Following the stages of evolution of MNEs we anticipate that as the number of mergers and acquisitions grow, it will attract more green-field investments.

H2: nationwide M&As have a positive influence on attracting greenfield investments.

Besides information from other firms, other aspects are also very important, thus in this case we considered the infrastructure as an important factor that influences firm's decisions. We account both for the available infrastructure as well as for the intensity of usage.

METHODOLOGY

In order to test the factors that influence the activity of foreign firms in other regions than the home countries foreign direct investments (FDI) statistics were analyzed. The

source of data for FDI was the UNCTAD, FDI/TNC database. The sample covers the period 2007 to 2014 as for the cross section components, the data contains information concerning all the 28 countries forming the European Union. The variables from the database account for both inward and outward FDI flows as well as inward and outward FDI stocks at national level in the selected period. For more depth of the analysis data concerning the mergers and acquisitions (M&A's) are accounted for both value as well as the number of total M&A's projects. The last set of variable accounts for the green-field investments both as total number of projects as well as the total values of the green-field projects.

Also to mitigate the effects of the evolution of the economy generated by the short run business cycle, we accounted for other possible factors that could influence MNEs' investment decisions. The indicators used for control taken in consideration the infrastructure development for every country from the sample. We used infrastructure date from World Bank database. We accounted for railroad infrastructure, both as total number of rail kilometers as well as the quantity of good transported on railroads. We also included the quantity of goods transported by air. The data concerning road transport was dropped due to the fact that had too many missing values and it affected the estimation. Also, some of the countries had poor data on infrastructure so they were dropped from the estimation.

Also, to account for the possibility that the MNEs observe the past behavior of other MNEs, and act based on, to a certain extent, past information, lagged data were used in the estimation to test for this effect.

For estimation we used a panel model estimated with OLS. Fixed effects were used in order to isolate any country specific peculiarities. The first model took into consideration the total value of the green-field project based on their destination countries (gfval_dst) as the left hand side variable. The right hand side variables were the value of the mergers and acquisitions grouped by the country of the seller (maval_sell – for the current year and lmaval_sell – for the previous year), the total stock of inwards FDI (fdiis – for the current year and lfdiis), the flow of inwards FDI (fdiif – for the current period and lfdiif – for the lagged variable), the total length of railway tracks (rail), the quantity of goods transported by rail (rail_goods) and the quantity of good transported by air (air_good). The first model's equation was estimated by combining the explanatory variables in different possibilities. The second model used as a left hand side variable the total number of green-field projects within the respective year. The right side variables were the same used in the first equation for the FDI flows and for the infrastructure. For the variable accounting for M&A activity was used the number of mergers and acquisitions from each country from the reporting period (manum_sell).

RESULTS

For the first model the value of the M&As in the current year is significant only in two of the cases (equation 1 and 3), but the lagged value is significant in all the equations in which was introduced. This results supports hypothesis two and it may be explained by the fact that the effects of such transactions between firms are not perceived immediately by the other firms. Also the number of previous year mergers and acquisitions that took place in a country seems to have a positive and significant impact on the value of the green-field FDIs. The stock of inward FDI has a positive impact on

the values of the new green-field FDIs. This supports the first hypothesis. The positive and significant values for the inward flow of FDI in the previous period may further support the first hypothesis, suggesting that MNEs react more intensely to recent evolution of the economic environment from a certain country.

The railroad infrastructure has both positive and negative values, depending on the terms of equation, but in none of the equations the coefficient is statistically significant. With all these, the intensity of usage of the railroad infrastructure has a positive and statistically significant value in all of the equations. This suggests that the MNE are not interested only in the physical presence of the railroad infrastructure, but rather in its capacity to be used.

The intensity of air transport of goods, even though has positive coefficients in all of the equations, it is statistically significant in only three of them. This may suggest that air transport of goods has a limited and uncertain importance on the impact of the activity of the multinational, therefore this result must be interpreted with a dose of skepticism.

In the second model the number of mergers and acquisitions within a year has a negative and statistically significant value in all of the equations. This may suggest that the process of investment is a sequential one, thus each stage attracting or developing the next, but they are improbable to happen at the same time.

The stock of inward FDI, both present and lagged, have no significant impact on the number of green-field projects, suggesting that the stock of FDI is good information for MNE of how much to invest rather than how many projects it will be developed. This effect is compensated by the positive coefficient of the value of the green-field projects suggesting that this my act like some sort of signaling, bigger value projects attracting more green-field projects overall.

The impact of railroad infrastructure is again statistically not significant, but the intensity of usage of the rail infrastructure has positive and significant values, this suggesting further that not only the mere existence of the infrastructure is important but its capacity to be properly used.

CONCLUSIONS

Aggregated values have their own limitations when it comes to underline more subtle causal relations, but are useful in describing larger trends.

This analysis has some peculiarities that are described by the model. First of all, the period of the analysis covers the start of the global economic crisis and the following years which had a significant impact on the evolution of global firms. It was a period of restructuring and consolidations that lead to important changes in some sectors, implicitly affecting also the investing behavior of the multinational companies.

Secondly, the analysis of the overall activity at national level may highlight some specific local evolution of the business environment that influenced the MNEs decisions on entering those respective markets. This aspect can be further analyzed by inserting more variables in order to isolate macroeconomic and microeconomic context of each country.

Georgopoulos and Preusse [10] highlighted, based on sample of 179 transnational companies that had subsidiaries in Greece, how the preferred entry mode affected their performance. They hypothesized M&A's generated better results for companies than green-field FDI. They concluded that firm's specific advantages (FSA) are not enough for the success of a foreign subsidiary, thus buying locally successful firms will generate better results than starting green-field projects.

REFERENCES

[1] Mencinger, J., " Does Foreign Direct Investment Always Enhance Economic Growth?", 2003.

[2] Zaman, Gh., "Aspecte ale impactului ISD din România asupra exporturilor şi dezvoltării durabile", 2011

[3] Martinez-Zarzoso, I., The log of gravity revisited. Applied Economics, 45(3), 311-327. http://dx.doi.org/10.1080/00036846.2011.599786, 2003.

[4] Grosse, R., Trevino L. J., "Foreign direct investment in the United States: an analysis by country of origin", Journal of International Business Studies, 77 (1), pp. 139-155, 1996.

[5] Dunning, J.H., International Production and the Multinational Enterprise, Allen and Unwin: London, 1981.

[6] Blomström, M., Kokko A., Zejan M., "Host Country Competition and Technology Transfer by Multinationals", 1994

[7] Mullen, J.K., Williams M.," Foreign Direct Investment and Regional Economic Performance", 2005.

[8] Borensztein, E., De Gregorio, J., Lee, J.W., "How Does Foreign Direct Investment Affect Economic Growth?", Journal of International Economics, pp. 115-35, 1998.

[8] Wang, M., Wong M. C. S., "What Drives Economic Growth? The Case of Cross-Border M&A and Greenfield FDI Activities", 2009

[9] Harms, P.; Méon, .P.G., „An FDI is an FDI is an FDI? The growth effects of greenfield investment and mergers and acquisitions in developing countries", Proceedings of the German Development Economics Conference, Berlin 2011, No. 38.

[10] Georgopoulos, A., Preusse H.G., "Cross-border acquisitions vs. Greenfield investment: A comparative performance analysis in Greece", International Business Review 18 (2009) pp.592–605

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016 INTERNATIONAL MULTIDISCIPLINARY

APPENDIX

VARIABLES	(1) gfval_dst	(2) gfval_dst	(3) gfval_dst	(4) gfval_dst	(5) gfval_dst	(6) gfval_dst	(7) gfval_dst	(8) gfval_dst	(9) gfval_dst
maval_sell	0.0776**		0.0947**		0.0275		0.00136		0.00136
	(0.0320)		(0.0381)		(0.0337)		(0.0324)		(0.0324)
fdiis	-0.0181***	-0.0123**	-0.0163***	-0.0141***	-0.0174***				
	(0.00548)	(0.00555)	(0.00590)	(0.00521)	(0.00527)				
lmaval_sell		0.181***		0.130***		0.0940**		0.0940**	
		(0.0353)		(0.0405)		(0.0398)		(0.0398)	
lfdiis						-0.00383	-0.00229	-0.00383	-0.00229
						(0.00480)	(0.00486)	(0.00480)	(0.00486)
fdiif		-0.0124	-0.0181						
		(0.0179)	(0.0219)						
lfdiif				0.0404*	0.0707***				
				(0.0206)	(0.0194)				
lmanum_sell						38.58***	51.34***	38.58***	51.34***
						(9.146)	(8.259)	(9.146)	(8.259)
rail	-0.134	0.499	-0.0915	0.285	-0.240	0.351	0.0152	0.351	0.0152
	(0.579)	(0.563)	(0.582)	(0.563)	(0.557)	(0.539)	(0.534)	(0.539)	(0.534)
rail_good	0.274***	0.327***	0.299***	0.269***	0.215**	0.269***	0.246***	0.269***	0.246***
	(0.0897)	(0.0880)	(0.0947)	(0.0863)	(0.0877)	(0.0823)	(0.0837)	(0.0823)	(0.0837)
air_good	1.386*	0.887	1.432*	1.149	1.634**	0.499	0.604	0.499	0.604
	(0.754)	(0.715)	(0.756)	(0.720)	(0.727)	(0.704)	(0.722)	(0.704)	(0.722)
Constant	5,589	-1,898	4,545	392.8	6,097	-5,837	-4,076	-5,837	-4,076
	(5,755)	(5,693)	(5,898)	(5,623)	(5,533)	(5,478)	(5,564)	(5,478)	(5,564)
Observations	176	176	176	176	176	176	176	176	176
R-squared	0.207	0.302	0.210	0.318	0.272	0.360	0.334	0.360	0.334
Number of countries	23	23	23	23	23	23	23	23	23

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

VARIABLES	gfnum_dst	gfnum_dst	gfnum_dst	gfnum_dst	gfnum_dst	gfnum_dst
manum_sell	-0.338***	-0.285***	-0.274***	-0.330***	-0.449***	-0.465***
	(0.0999)	(0.108)	(0.105)	(0.100)	(0.0790)	(0.0751)
fdiis	-8.25e-05	-5.40e-05			6.22e-05	6.06e-05
	(6.41e-05)	(6.77e-05)			(4.94e-05)	(4.93e-05)
fdiif		-0.000297	0.000362*			
		(0.000231)	(0.000218)			
lfdiis			-5.04e-05	-4.80e-05		
			(6.10e-05)	(6.13e-05)		
lfdiif					-0.000122	
					(0.000179)	
gfval_dst					0.00801***	0.00786***
					(0.000742)	(0.000706)
rail	-0.00419	-0.00396	-0.00432	-0.00470	-0.00212	-0.00222
	(0.00669)	(0.00668)	(0.00669)	(0.00672)	(0.00498)	(0.00497)
rail_good	0.0109***	0.0113***	0.0112***	0.0108***	0.00899***	0.00895***
	(0.00104)	(0.00107)	(0.00109)	(0.00106)	(0.000798)	(0.000795)
air_good	0.00848	0.00902	0.00876	0.00942	-0.00261	-0.00190
	(0.00878)	(0.00877)	(0.00884)	(0.00888)	(0.00668)	(0.00659)
Constant	108.2	91.97	95.09	104.8	63.92	66.00
	(67.44)	(68.47)	(69.43)	(69.58)	(50.39)	(50.21)
Observations	179	179	179	179	179	179
R-squared	0.481	0.487	0.487	0.478	0.717	0.716
Number of countries	23	23	23	23	23	23

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
SGEM 2016

FEATURES OF CREATION OF REGIONAL BRANDS IN THE REPUBLIC OF TATARSTAN

Assoc. Prof. Dr. Eidelman B.M. [1]

Assoc. Prof. Dr. Fakhrutdinova L.R.[2]

Assoc. Prof. Dr. Nayda A.M. [3]

[1]Kazan Federal University, **Russia**

[2]Kazan Federal University, **Russia**

[3] University of management "TISBI", **Russia**

ABSTRACT

This article describes the peculiarities of creation of territorial brands in the Russian Federation on the example of Republic of Tatarstan. The basic rules for the creation of territorial brands. Much attention is paid to the formation processes of territorial brands and co-branding on example of Republic Tatarstan and of Kazan. The content of the brand "Heritage of Tatarstan" as an important factor of improving the investment climate in the region.

Keywords: territorial brand, the rules for creating territorial brands, brand identity, co-branding

INTRODUCTION

When developing territorial brands, you should be guided by a set of rules the implementation of which will enhance the efficiency of the process. In our opinion there are three main principles of territorial brands creation [1].

1. Big attention, discussion and involvement in the creation of a territorial brand the general public. In such a case in his process must participate not only residents of this region, but also other people, no matter where they lived at this moment and who are not indifferent to the fate of this region [2].
2. Territorial brand could not be created without the active participation of the relevant regional education administration. Furthermore, it is very often when it is an order from the regional administration that gives incentive impulse to the regional brand creation.
3. Developing territorial brand must be from one side patriotic, and from the other side stay out of politics and bring interethnic and interchurch peace and reconciliation in this territory.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
SGEM 2014

METHODS

However, when working on the creation of territorial brand, you should always remember that its development is not goal in and of itself, but only one of the marketing tools for the promotion of corresponding region, increase of its investment and tourist and recreational appeal among its citizens, public and administration at all levels (including especially Federal level).

CO-BRANDING

Co-branding is one of the most effective methods used in the development and promotion of territorial brands under current conditions. The idea of co-branding is that applying simultaneously of several territorial brands could give significantly greater efficiency and lead to the achievement of desired goals much earlier than their use on a stand-alone basis [3].

In such a case, could be obtained so-called synergetic effect, in other words summing effect from cooperation of two or more factors, characterized in that their effect is much greater than the effect of each individual component in the form of a simple sum. Let us consider in more detail co-branding through the example of development and promotion of territorial brands of Kazan and Republic of Tatarstan [4,5].

Work on development of territorial brands is carried out in Republic of Tatarstan since the early 2000's.

In the beginning in 2009 was created territorial brand of Kazan. (Pic.1)

KAZAN
RUSSIA'S THIRD CAPITAL

Price:	is confidential
Logo:	word KAZAN
Slogan:	Kazan-Russia's Third Capital

Picture 1. *Kazan-Russia's Third Capital*

Tourist brand of Kazan was created immediately after the events dedicated to the 1000-th anniversary of Kazan. Its logo represented word KAZAN made with The Renaissance era font, which was completed with "eastern ornament and a stylized image of a dragon Zilant". The slogan read: "Kazan – where Europe Meets Asia".

However at that it was decided to keep on going, and in 2009 the capital of Tatarstan take out a patent for title "Third Capital of Russia". Was created a new territorial brand with slogan "Kazan-Russia's Third Capital".

RESULT

New logo of Kazan now appeared on advertisements and on all manners of souvenirs. New Kazan's symbols will "work" also in international touristic expositions [6,7].

In 2014 in Tatarstan was created a brand "Heritage of Tatarstan", which is designed to further improve the investment climate in republic, to enhance the business activity in the region and further shape the positive image of Tatarstan not only in our country, but also far beyond its borders [8,9].

In the concept of brand "Heritage of Tatarstan" was used 10 fundamental components:

- Speed;
- Endurance;
- Dignity;
- Inquisitiveness;
- Instinct;
- Tradition;
- Skill;
- Unity;
- Perseverance;
- Purpose.

Considering that Kazan is the capital of Tatarstan, it is necessary to use advantages of both brands in the best way, and in this context develop regional brands for other cities and communities, located on the territory of Tatarstan (Yelabuga, Naberezhnye Chelny, Nizhnekamsk, Bugulma, Almet'yevsk and other). Each of these brands must, from one side, underline specific character of corresponded community, and from the other side complete already existed regional brands, and in any event not to weaken or destroy them [10,11].

CONCLUSION

All of this will strengthen reliance and sympathy to the Republic of Tatarstan, both from the local community, and from people who live outside of this community, and, ultimately, will act to raise the tourist flow to this region [12,13,14]. The consequence of this will be performance improvement of social and economic development of Republic of Tatarstan in the near future and for many years to come, also substantial increase of investment and tourist and recreational attractiveness of the region, it's gradual transformation it into one of the largest tourist centers not only in Russian Federation, but all over the world [15].

REFERENCES

[1] Shabalina S.A., Rubtzov V.A., Pratchenko O.V. Differentiation of the Territory of Tatarstan Republic into Zones Due to their Significance for Domestic and Hational and International Tourism//Mediterranean Journal of Social Scienses, Volume 5, No.24, November 2014. Rome, Italy, 2014. P.398-403.

[2] Mingaleva, Z., Bunakov, O. Innovative ways of using the tourist potential as the basis of territories development // Life Science Journal. Volume 11, Issue 6 SPEC. ISSUE, 2014, Pages 315-317.

[3] Zhang J., Wedel M., Pieters R. "Sales effects of attention to feature advertisements: a Bayesian mediation analysis"// Journal of Marketing Research, Vol. 46, October, 2009, pp. 669-681.

[4] Gabdrakhmanov N.K. and M.V. Rozhko Positioning of Volga Federal District Regions by Demographic Situation Index // World Applied Sciences Journal, Volume 30 Number 6, 2014. – Pages 792-795.

[5] Gabdrakhmanov, N.K. and V.A. Rubtsov, 2014. Tourist and Recreational Positioning of Tatarstan Republic: Cluster Analysis. World Applied Sciences Journal, 30(Management, Economics, Technology & Tourism): Pages 202-205.

[6] Wedel M., Pieters R. "Eye tracking for visual marketing" // Foundations and Trends in Marketing, Vol. 1(4), 2008, pp. 301-350.

[7] Rosenholz R., Li Y., Nakano L. "Measuring visual vlutter" // Journal of Vision, Vol. 7(2), 2007, pp. 1-22.

[8] Gabdrakhmanov N.K., Rubtzov V.A., Shabalina S.A., Rozhko M.V., Kucheryavenko D.Z The role of territorial organization of cities in the touristic attraction of the region on the example of the Republic of Tatarstan // Life Science Journal 2014;11(11), Pages 451-455.

[9] Andrews F., Whitney S. Social Indicators of Well Being 11 American's perception of Life Quality. N.Y., Plenum Press, 1976. - XXI. - 455 p.

[10] Denmukhametov, R.R. and O.V. Zjablova,. Geodemographic situation in the Republic of Tatarstan. World Applied Sciences Journal. Volume 30, Issue 11, 2014, Pages 1684-1688.

[11] L.R. Fakhrutdinova, D.V. Syradoev, T.A. Terehova, N.V. Antonova. Organizational Forms and Methods of Production Management Control // Mediterranean Journal of Social Sciences. Volume 6, Issue 3, 2015, Pages 727-731

[12] Fakhrutdinova L.R., Eidelman B.M., Rozhko M.V., Pratchenko O.V. Methodological Approaches of Formation of Evaluative Indicators of Quality of Life // Mediterranean Journal of Social Sciences, Vol. 5, No. 24, 2014, pp. 251-255.

[13] Gabdrakhmanov, N.K. and V.A. Rubtzov, 2014. Geodemographic Polarization Processes: Municipal Level (The Case of the Kukmorsky Municipal District of the Republic of Tatarstan). World Applied Sciences Journal, 30(10): Pages 1317-1320.

[14] Bagautdinova, N., I. Gafurov, N., Kalenskaya and A. Novenkova, 2012. The regional development strategy based on territorial marketing (the case of Russia) World Applied Sciences Journal, 18. SPL.ISSUE., 18: Pages 179-184.

[15] Shabalina S.A., Fakhrutdinova L.R., Mustafin M.R.,Shakirova A.R., 2015. Factors that affect the quality of life in Tatarstan.// Procedia Economics and Finance 24(2015) p.613-619.

FEELING OF SELF-WORTH AND ASSESSMENT OF MISCELLANEOUS ASPECTS OF MANAGERS' WORK IN VARIOUS HIERARCHICHAL LEVELS

Šárka Bendová, MSc.

University of Economics, Prague, Faculty of Business Administration, Department of Human Resources Management, Prague, **Czech Republic**

ABSTRACT

We have accomplished a research among a total number of 300 employees working in a large power industry company. The power industry company has realized to have a crucial problem in the area of communication as the adequate information was not delivered to proper people. That was an impulse for us to commence the research survey related to the importance of feelings of self-worth within the group of managers and the way how miscellaneous aspects of work of managers shall be assessed in connection with the fact that managers have been working in a variety of hierarchical levels in the power industry company.

The target group comprised of the total number of 200 managers. Finally, the amount of 116 managers responded to our research survey electronically. Managers classified in four hierarchical management levels assessed miscellaneous aspects of work, whereas a majority of them have been satisfied with feelings of their self-worth. Each of these particular levels of management hierarchy exhibits distinctive specifics. The most highly positioned is the top management of the given structure of the organization, their deputies are positioned on the second level of hierarchy, another third level of hierarchy shall be occupied by country level managers of the pertinent country, and the fourth level is represented by the line managers who take control directly over the appropriate positions.

Managers in different managerial levels assessed 12 major information resources based on the AIMQ methodology. The research survey was amended with a few additional questions related to their mutual communication channels and dependency on feelings of their self-worth. Results demonstrate considerable differences in dependence on managers' hierarchical levels. Managers' degree of self-action turns out to be considered a key factor and a predictor of the personal feeling of their concerns. Thus, our research output accentuates the fact that miscellaneous information must be distributed only to the managerial level concerned within the hierarchy of the power industry company. On basis of such an internal company research, the power industry company received prescriptions to make changes that would optimize internal communication processes.

Keywords: internal communication, self-worth, self-action, communication effectiveness

INTRODUCTION

Enhanced scope of information and provision of its effective acceptance by employees who need it is a key provision to a successful company management. We have been investigating 116 managers in the presented research who assessed 12 types of informational resources by qualities stipulated by the AIMQ model together with a few additional questions. Results demonstrate significant differences in ratings of various information resources as well as differences in dependence on managers' hierarchical levels. Therefore, we think it is necessary to manage performance of employees in order to assure a company survival not only by means of the performance factors and KPIs, but also through their motivation, satisfaction, engagement [1], and via communicating a quality of information [2]. Relationships have been one of the pivotal concerns in management research for decades, the significance of relationships between employees and organisations has become even more salient [3]. Without the ability to assess the quality of their information, organizations cannot assess the status of their organizational information quality and monitor its improvement [4]. Communication represents the key to efficiency within an organization along with motivation and professional competence. All the members of the company spend most of their time communicating in a form or another, no matter their position within the hierarchy of their company. Due to the fact that the number of employees from services and offices is bigger than the number of production workers, a need for improving communication has been noticed because it is necessary to have a deeper collaboration between work colleagues and the hierarchical levels as teamwork has been spreading [5]. As Michnik and Lo commented, quality of information serves as the background for all steps in communication process in the modern enterprise: establishing, opening and strengthening of communication channels. Relatively small businesses, which operate locally, have limited ability to access and utilize the large amounts of information. In such cases, managers mostly can operate their businesses relying mostly on their own experience. Large businesses, operating on global scale, need a well established information system as a basis for effective communication among various subjects involved in a business process [6]. Effective managerial communication in an organisation helps to connect with employees, build positive relationships and frame attitudes and behaviours of employees in the workplace [7]. We interpreted how individuals with contingent self-worth process information about social relationships [8]. Although, some people may have self-worth that is more generally contingent on performance than others [9], we were interested in the social information processing of people with domain-specific contingent self-worth. Specifically, we were interested in how people with high domain-contingent self-worth associate domain performances with social relationships compared to people whose self-worth is less domain-contingent. Baldwin and Sinclair found associations in memory between success and social acceptance and failure and social rejection. Nevertheless, their findings suggest that this pattern of association varies as a function of the importance of the domain to evaluations of self-worth [9]. Good work in this role requires both a detailed understanding of the business from operating and financial perspectives and understanding of the strategic aspects of the organization and ways of realization of the strategy within organization mainly from the point of the human resources [10], [11]. Bell and Martin argue that managerial communication (MC) is a merger and a combination of four fields: corporate communication, business communication,

organizational communication and management [12]. Managing company brings many challenges to managers. Not only delivering expected results, running day-to-day operation with all responsibilities, but also managing people of various backgrounds [13]. While it may be illusory to believe that any organization can enjoy complete teams among its workforce, it is clear that certain communication characteristics can result in greater trust in manager-employee relationships, even within the context of organizational constraints [14]. The technology development is a big challenge for the leaders themselves as well as the businesses, which must adapt to rapid technology development that goes hand in hand with customer demands [15].

RESEARCH

Results which we aimed at and like to present herein shall form an integral part of the research of a larger scope carried out for the power industry company in Bulgaria. The target of this academic paper is to introduce a particular comparison of the research results implemented among managers structured in 4 different hierarchical levels in the company. To be able to compare it, we shall use 10 questions to assess diverse aspects of working environment by virtue of them we are focusing primarily on personal relevancy experienced by an individual person in the working place, and together with it a related feeling of self-worth.

HYPOTHESIS

Cardinal hypothesis of the research says that managers positioned in lower levels (3 and 4) shall be feeling as people of a lower self-worth than managers positioned in higher hierarchical levels (1 and 2).

SUBJECTS

Total amount of 406 respondents participated in our research, of whom the amount of 300 were employees and 106 equalled to managers. The distribution of questionnaires based on managerial levels of hierarchy shall be depicted in the following Table 1 below:

Table 1. Distribution of Questionnaires based on Managerial Level

Managerial Level	No. of Forms	Percentage [%]
Board – 1	30	28.3
Board – 2	41	38.7
Board – 3	29	27.4
Board – 4	6	5.7

Source: Author's Ultimate Data Analysis

METHOD

Results we are presenting in this paper shall form an integral part of a more extensive research implemented and established on principles of the AIMQ model assessing quality of information. This particular research formulates 10 additional questions to assess miscellaneous aspects of working environment most related to personal relevancy, which is experienced by a human being in the work place and the accompanying feeling of self-worth. Thus, we are demonstrating results monitoring 10

additional questions in this paper. Participants of our research replied to every question within the scale from 0 (i.e. not my case, at all) to 10 (reflecting me, totally).

PROCEDURE

In the first phase of the research, we distributed questionnaires to a number of 200 managers, out of which we received 106 pieces well-filled in and valid. We approached a majority of the power industry company managers electronically and emailed them the questionnaires, but a fraction of managers who were positioned all over the territory of the power industry company were the questionnaires delivered in paper.

ANALYSIS AND RESULTS

The questions formulated are described in the Table 2 see below where are herewith recorded results of the Fisher's correlation coefficient (F) and the statistical significance determined by One-Way ANOVA (P).

Table 2. 10 Questions Comparing Managers in 4 Hierarchical Levels

N	Question	F	P
1	Do you feel sufficiently supported by your direct superior?	9.39	0.000
2	Do you get an effective feedback to your work from your superior?	8.50	0.000
3	Do you think that your problems shall be advanced higher, and their solutions shall be searched for?	2.45	0.068
4	Do you get an effective feedback to your work from your colleagues?	2.25	0.086
5	Does the higher management take due note of the needs of your department?	2.78	0.045
6	Do you have a satisfactory liberty to make a decision?	6.18	0.001
7	Do you feel informed effectively about decisions of the higher management in the company?	1.83	0.146
8	Are internal procedures, directions and instructions effective enough?	1.38	0.253
9	Do you have enough information about what occurs in other departments plainly related to your work?	1.00	0.396
10	Are the causes explained sufficiently in terms of why different decisions made by the higher management were accepted?	2.09	0.105

Source: Author's Ultimate Data Analysis

Significant differences among managers positioned in various managerial levels were approved in relation to different questions, in particular, in questions 1, 2, 5, 6, and concurrently in two more questions which we gained marginal results – i. e. questions No. 3 and 4. Moreover, we carried out additional post-hoc tests in order to find out which are the groups (i. e. managerial levels) the differences shall be the greatest among. Therefore, we claim the following retrieved from the results:

1) Managers positioned on the managerial level 4 shall feel less supported by their Direct Superiors as a statistic significance than other managerial levels altogether (1_{mean} = 9.03; 2_{mean} = 8.93; 3_{mean} = 8.93; 4_{mean} = 5.67; p = 0.000). We consider such a difference achieved to be disappointingly high.

2) Managers positioned on the managerial level 4 shall feel a statistical significance as a result of the fact that they do not receive any useful feedback from their superiors other than all other managerial levels (1_{mean} = 8.60; 2_{mean} = 8.98; 3_{mean} = 8.90; 4_{mean} = 5.67; p = 0.000).

3) Managers positioned on the managerial level 1 shall feel statistical significance as a result of the fact that the top management perceives needs of their department. They are followed by those at the managerial level 3. The lower level of the statistic significance was achieved in the managerial levels of 2 and 4. The overall ANOVA is statistically significant (F = 2.78; p = 0.045), but the result of the variance works out in the way that any significant differences do not come out of the post-hoc tests.

4) Managers positioned on the managerial level 4 assume that they have only a little freedom to make decisions. Compared to all other results, the difference is statistically significant (1_{mean} = 8.27; 2_{mean} = 7.34; 3_{mean} = 7.62; 4_{mean} = 5.17; the Fisher's correlation coefficient *p* achieves the interval between 0.018 and 0.000). We can also notice a small difference between managerial levels 1 and 2, whereas it is favouring to the statistically significant one and the managerial level identified as the Board - 1 shall feel that to have a greater freedom in decision making.

5) Managers positioned in managerial levels 1 and 3 think that their problems would advance to a higher level (i.e. an authority) and the solution to their problems shall be searched for. Managers positioned in the managerial level 2 suppose in a lower scope that the same occurs with their problems. Managers positioned in the managerial level 4 suppose it in the lowest scope. Differences shall not be statistically significant, though the difference among the managerial level 4 on one hand and managerial levels 1 and 3 on the other shall be approaching the statistically significant difference.

DISCUSSION

The hypothesis designated for the research indicates that it was merely verified partially. However, the amount of the research participants occupying the managerial level at the Board – 4 was only a few. The fact we consider intriguing is a commonly accepted tendency when managers positioned in the managerial levels 1 and 3 shall generally experience a stronger feeling of personal relevancy than managers in managerial levels 2 and 4. Presumably, this result comes out of the fact that managers in the managerial level 2 represent managers of the managerial level 1 and they would physically work in the same building, or in the same city – a capital city, potentially.

CONCLUSION

On the other hand, managers in the managerial level of the Board – 3 shall officially be positioned lower than the managers of the Board – 2, but in principle, they are the highest ranking managers outside the capital city of Bulgaria. Thus, they have a chance to decide and feel a higher personal relevancy and to be more distinguished when controlling operations in vast territories in the power industry company. Managers positioned in the managerial level of the Board – 2 consider themselves to be rather executing commands of the managers at the Board – 1 and the top management. In general, the output of our implemented research is that managers in the managerial level

of the Board – 2 and 4 indicate themselves as dissatisfied, have got a low feeling of personal relevancy and accept miscellaneous aspects of their work in a more negative way than other managers. Managers positioned in the managerial level of the Board – 2 feel themselves hierarchically higher, though lacking the real factual power, and managers positioned in the managerial level of the Board – 4 feel themselves more to be rather an executive power, which carries only more responsibility giving them no power, but bringing them more work.

On basis of our research carried out, we recommended the power industry company a certain list of recommendations in order to be able to pay attention to needs of managers positioned in managerial levels of the Board – 2 and 4. The company should approach to clarify the roles, determine distinctly the scope of accountability and highlight the managerial aspect of their work.

REFERENCES

[1] Bendová, Š., Štěpánková, M., & Koralov, M. (2015). Employee Engagement and Satisfaction Dependency on Employee Gender. Presented at the The 9th International Days of Statistics and Economics, Prague, Czech Republic. Retrieved from https://msed.vse.cz/msed_2015/article/172-Bendova-Sarka-paper.pdf.

[2] Palíšková, M. (2009). Trh práce v Evropské unii (historický vývoj, nové tendence a perspektivy).Vysoká škola ekonomická v Praze, nám. W. Churchilla 4, 130 67 Praha 3, http://www.vse.cz. Retrieved from http://www.vse.cz/vskp/eid/39230.

[3] Dasgupta, S.,A., Suar, D., & Singh, S. (2014). Managerial communication practices and employees' attitudes and behaviours. Corporate Communications, 19(3), 287. Retrieved from http://search.proquest.com/docview/1650541661?accountid=17203.

[4] Lee, Y. W., Strong, D. M., Kahn, B. K., & Wang, R. Y. (2002). AIMQ: a methodology for information quality assessment. Information & Management, 40(2), 133–146. Retrieved from http://doi.org/10.1016/S0378-7206(02)00043-5.

[5] Todericiu, R., Stanit, A. (2012). Managerial communication and its influence on organizational performance. Presented at The Proceedings of the INTERNATIONAL MANAGEMENT CONFERENCE, 2012, vol. 6, issue 1, pages 317-322. Retrieved from http://conference.management.ase.ro/archives/2012/pdf/39.pdf.

[6] Michnik, J., & Lo, M. C. (2009). The assessment of the information quality with the aid of multiple criteria analysis. European Journal of Operational Research, 195(3), 850–856. Retrieved from http://doi.org/10.1016/j.ejor.2007.11.017.

[7] Wyatt, W. (2006), Effective Communication: A Leading Indicator of Financial Performance (White Paper), Watson Wyatt Worldwide, Arlington.

[8] vanDellen, M. R., Hoy, M. B., & Hoyle, R. H. (2009). CONTINGENT SELF-WORTH AND SOCIAL INFORMATION PROCESSING: COGNITIVE ASSOCIATIONS BETWEEN DOMAIN PERFORMANCE AND SOCIAL RELATIONS. Social Cognition, 27(6), 847-866. Retrieved from http://search.proquest.com/docview/229566915?accountid=17203.

[9] Baldwin, M. W., & Sinclair, L. (1996). teem and "if. . .then" contingencies of interpersonal acceptance. Journal of Personality and Social Psychology, 71, 1130-114.

[10] Lawler, Edward E., I., II. (2005). From human resource management to organizational effectiveness. Human Resource Management, 44(2), 165-169. Retrieved from http://search.proquest.com/docview/222114584?accountid=17203.

[11] Stritesky, M. (2014). New HR Organizational Structures in Czech and Slovak Organizations. Procedia - Social and Behavioral Sciences, 110, 130–139. http://doi.org/10.1016/j.sbspro.2013.12.855.

[12] Bell, R. L., & Martin, J. S. (2012). The relevance of scientific management and equity theory in everyday managerial communication situations. Journal of Management Policy and Practice, 13(3), 106-115. Retrieved from http://search.proquest.com/docview/1021381509?accountid=17203.

[13] Lankašová, R. (2015). Mediation as a conflict management tool in companies. Presented at the The 9th International Days of Statistics and Economics, Prague, Czech Republic. Retrieved from https://msed.vse.cz/msed_2015/article/158-Lankasova-Radka-paper.pdf.

[14] Willemyns, M., Gallois, C., & Callan, V. J. (2003). Trust me, I'm your boss: trust and power in supervisor-supervisee communication. International Journal of Human Resource Management, 14(1), 117–127.

[15] Legnerová, K., & Pecáková, I. (2015). Leadership Challenges. LÖSTER, Tomáš, PAVELKA, Tomáš (Ed.). The 9th International Days of Statistics and Economics Conference Proceedings [Online], 2015(9). Retrieved from http://msed.vse.cz/msed_2015/article/19-Legnerova-Katerina-paper.pdf.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

FOREIGN DIRECT INVESTMENT AS A FACTOR FOR ECONOMIC STABILITY

Assist. Prof. Dr Maya Tsoklinova[1]

[1] University of Forestry – Sofia

ABSTRACT

The present scientific report aims to analyze the dynamics of foreign direct investment (FDI) by economic sectors in Bulgaria during the period 2008-2014, and to make specific recommendations for their involvement in each sector. Based on this study the positive effects of FDI on the economy are synthesized. Special emphasis is placed on the ability of foreign direct investment to stimulate accelerated growth, improve competitiveness of the national economy and public welfare (by employment stimulation and redistribution of incomes) to improve the quality of human resources and pose a real basis for development of economies. The role of FDI as a contributor to economic stability is highlighted. The main indicators which analyze characteristics for measuring development fluctuations include: absolute growth; growth (on a chain and on a constant basis); growth rates; average FDI [3] for the period 2008-2014; mean absolute growth of FDI for the period.

Key words: foreign direct investment, analysis, economic stability.

INTRODUCTION

Neoclassical school defines macroeconomic stability as financial stability, which means low inflation, balanced budget, a stable exchange rate, low interest rates and satisfactory reserve currency. It is necessary to include the stability of production, employment and finance to the neoclassical theory of macroeconomic stability. In other words, macroeconomic stability means the stability of the production and financial system. Increased growth and accelerated development require stability of production, employment and finance, as well as social and political stability, respectively stability of government. First, the key problem of any economy is the establishment of stability in production. This creates conditions for confidence of local and foreign businesses in the economic system. This stability is a prerequisite for sustained long-term growth, higher employment, better use of human and material resources and the normal functioning of the financial system. Any breach in the stability of production, creates disruption in the financial system and even serious imbalances in the economy. The main objective of the present scientific report is to analyze the dynamics of FDI in Bulgaria and to synthesize the positive effects of these on the economy. For achieving of the goal, there are involved **two problems**:

1. To analyze the impact of FDI on the stability of production and financial stability.

2. To measure fluctuations in the growth of FDI in Bulgaria and on this basis to make recommendations for their involvement in Bulgaria.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS 2016

1. Components of macroeconomic stability

The stability of the production is the core of the macroeconomic system. Financial stability is a derivative of the stability of production. Under the stability of the production, we mean steady growth, not stagnation. It is not possible to achieve financial stability without stable growth. Of course, the opposite is also true, but at the root of the macroeconomic system and its stability are manufacturing macro- and micro-systems and their stability. Causal relationships between them are bidirectional, but are dominant impulses from the production to the financial system. Ultimately, the financial system serves the production of goods, not the opposite. People do business to create tangible and intangible benefits for consumer, investment and export purposes and not to produce low inflation, low budget deficit or balanced current account. Low inflation has no consumer value, unlike products and services [2]. The purpose of production are products and services to meet the needs of the people and low inflation, budget balance, balanced current account and exchange rate stability are important tools for achieving the objectives. Purpose of business is the production of products and services to meet the needs of people, not low inflation and strict balanced budget. Widely shared view is that low inflation is one that is about 1-2-3%. For a large part of researchers low inflation is higher social value of low unemployment. They oppose inflation, unemployment and prefer to tolerate double-digit unemployment in the name of close to zero inflation, which does not represent a stable indicator of economic stability. The stable economic policy should aim at both the lowest unemployment rate at the lowest possible inflation.

2. Foreign direct investment (FDI) - major drivers of economic growth

Foreign direct investment (FDI) is among the major drivers of economic growth. In a market economy in Bulgaria importance of FDI is even higher, because in addition to stimulating growth, they are the winner of managerial and technological know-how needed to transform thinking and business practice in the country. FDI is an essential component of any open economy and a factor of economic stability [1]. Free movement of capital allows utilization of existing competitive advantages and secures economic growth. The positive impact of FDI on the economy is related to generating economic growth, transfer of knowledge, technologies and best management practices; improve national competitiveness and welfare of the population, improved access to foreign markets and improving the quality of human resources.

Investments are made in both the private and public sector. In general, FDI is viewed as a process in which residents of a country source State acquires ownership of the assets to another host country for the purpose of exercising control over the production, distribution or other activities of the company. A key feature of FDI is that the investor acquires effective management on enterprise voice, assuming control over management policy and decisions. Another feature of FDI is their permanence distinguishes them from portfolio investments given as short-term. When examining the reasons for FDI in the scientific literature there are two basic approaches:

1. Economic perspective according to which firms invest abroad to generate income using company-specific competitive strengths, product and in knowledge. Further by FDI companies can strengthen their strategic positions and gain access to desirable and

scarce resources, such as human resources, knowledge. Some companies are attracted by the opportunity to secure supply still unsatisfied demand.

2. Institutional theory that FDI is dictated not only by objective reasons, but also due to the so-called inter-organizational relationships with customers, suppliers, competitors and others. According to some studies, the decision on FDI is influenced by the successful strategy of local enterprise, i.e. there is replicating the strategy. Institutional theory explains international expansion as influenced by inter-organizational relationships in the local market or in a broader sense because of the commitment of the company to a specific social context [4].

The first few years of the XXI century proved that the basis for accelerated development of exports and the related economic growth lies on serious investment. As a result of globalization has seen a dramatic increase of capital movements, including notably of FDI. In 2007 - the year before investment was affected by the global economic and financial shock - FDI flows that are both cause and result of globalization it reached a record of almost EUR 1,500 billion. FDI represents an important source of productivity growth and play an important role in job creation and organization of business at home and abroad. Through FDI, companies build the global supply chains that are part of the modern international economy. Innovations in transportation and information technologies have in turn facilitated trade and the globalization of businesses outside the confines of large corporations. Today, investment and trade are mutually dependent and complementary [6]. Around half of world trade takes place between affiliates of multinational enterprises trading intermediate goods and services.

3. Relationship between FDI and economic stability

While the relationship between FDI and economic growth and welfare is a complex, eventually attracted as investments and investments in third countries have a positive impact on growth and employment in and outside the EU, including in developing countries. In terms of EU investment in third countries have a positive and significant impact on the competitiveness of European enterprises, particularly in the form of higher productivity. Review the current state of research on FDI and employment shows that, contrary to what is sometimes voiced belief has not been reported investments in third countries have led to a measurable negative impact on aggregate employment. However, while the aggregate balance is positive, it is possible of course, in certain sectors, geographical and/or individual basis occur negative effects. Conversely, the overall benefits of attracted EU FDI are well established, particularly regarding the role of foreign investment to create jobs, optimize resource allocation, acquisition of technology and skills, increasing competition and encouraging trade. This is the reason why Member States, like other countries around the world are making significant efforts to attract foreign investment [5].

3.1. Analysis of the mainstream FDI in Bulgaria during the period 1996 - 2014

According to preliminary data of BNB foreign direct investment in Bulgaria for January-April 2015 reached 523.5 million euro or 96.9 million euro (22.7%) more than in January-April 2014 for the past two years, average annual investment flow minimal increases to pounce 1.5 billion euro in early 2015, but still reported significant divergent changes within individual months.

In several recent analyzes and publications was made premature conclusion that direct investments are less important for example of transfers of expatriates Bulgarians, since in some months "emigrant money" exceed investment flow. There are at least two methodological errors in such interpretations. First, looking at the net flow of investments, there is a minus sign and investments of Bulgarian companies abroad. Secondly, investments in Bulgaria are reported statistics on a net basis - for example, if a foreign company sells assets to a Bulgarian company, or if the local subsidiary companies pay a dividend or return the loan to the parent company, it is recorded as outflow. Relevant to the dynamics of investment activity, however, is an important inflow of new investments, financing the creation or expansion of capital in the Bulgarian economy. Finally, monthly data are often reported significant changes, such as the contribution of foreign capital flow should be judged in a slightly longer term.

In the period before 1997 foreign investment in the country almost did not come, while the period is characterized by stable and low levels of total investment in the economy of 11-15% of GDP and an overall decline in GDP for the period 1991-1997 In the period 1997-2002 foreign investment levels reach an average of around 6% of GDP, total investment is about 17.5% of GDP. During the period of most rapid economic growth 2003-2008, (average 6%), total investment averaged 27.6% of GDP, foreign reaching 17.7% of GDP. After the crisis, foreign investment fell to 3.7% of GDP and total capital declined to 21.6% of GDP, despite the significant growth of domestic savings. In the period 1996 - 2014 direct foreign investments in Bulgaria amounted to 43.7 billion euro. In times of hyperinflation and crisis in the real sector between 1996 and 1999 foreign investment are minimal. Foreign direct investment exceeded 1 billion euro after the stabilization of the economy in 2000. For two years, between 2000 and 2003 FDI has doubled. Interest in Bulgaria as an investment destination reaches its peak in the period 2006-2008, more than 50% of all foreign direct investment for the entire period from 1996 to 2014, were made in the period 2005 - 2008. In the period after the occurrence of the global financial crisis, the inflow of foreign capital to Bulgaria declined substantially. In the period 2010 - 2014 foreign investment amounted to just over 1 billion per year (see. fig. 1).

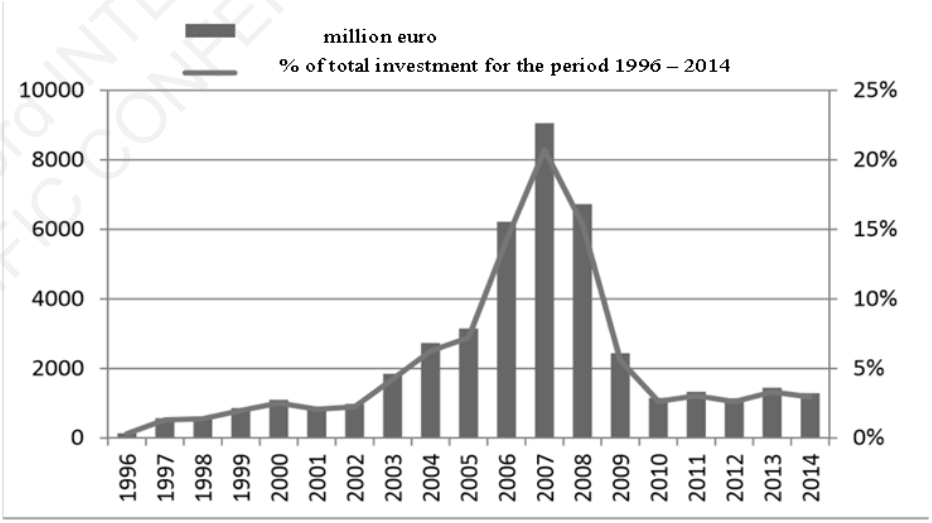


Fig. 1. Dynamics of foreign direct investment in Bulgaria in the period 1996 – 2014

Source: Industry watch data by BNB

In 2007 Bulgaria became a full member of the European Union, and this is the year that launched the global financial and economic crisis affected in the country in 2008. The impact of the crisis and the recession in the member states of the European Union redounds negatively the business environment in Bulgaria and the ability to attract direct investments in the coming years. From Figure 2 we can very easily trace the variation of FDI for the period 2008 - 2014. Starting from the period 2009 - 2010 there is a slight increase of about EUR 300 mln.. In 2011, there is a sudden drop in EUR 400 mln.. 2012 there is a growth about 300 mln., In 2013 - the total volume of FDI increased to EUR 1389 bln., while in 2014 there is a fall of EUR 1758 bln.

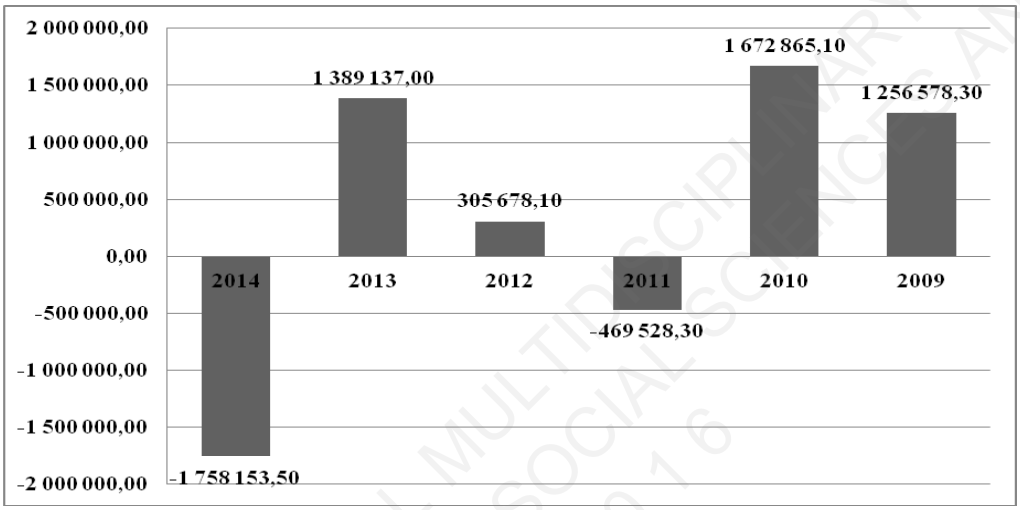


Fig. 2. Absolute growth of FDI for the period 2008 – 2014

Source: Author's calculations based on NSI data

The average amount of FDI for the period 2008-2014 is about EUR 18 380 mln.. The average absolute growth of FDI for the period indicates an overall positive change in FDI (12.98 million) annually. The average rate of growth shows that the average annual FDI in Bulgaria have increased by 12%.

The global credit expansion and the accession of Eastern European countries to the EU have substantially increased interest of international institutional investors to Eastern Europe in the first decade of the new century. Foreign investors in Central and Eastern Europe tried to exploit both the potential of the internal market through investments in construction, real estate and trade and export potential of the country through investments in export-oriented industrial companies.

During the absolute peak of the investment interest in Eastern Europe in 2007 Bulgaria was among the leaders in terms of attractiveness for foreign investors. During the same period, only in Estonia, foreign direct investment per capita measured in US dollars, are higher than in Bulgaria. In 2007, direct foreign investments in Bulgaria exceed USD 1,600 per capita and this indicator Bulgaria significantly outpaced almost all countries in Central and Eastern Europe. After the onset of the global crisis, the interest of foreign investors in Eastern Europe decreased significantly and foreign investments in Bulgaria fell to USD 200 per capita in 2013. A significant decline in foreign investor interest was recorded in almost all Eastern European countries. In 2013, Bulgaria lagging behind Estonia, Russia, Czech Republic and Latvia, according attracted foreign investments per capita. If we consider the differences in population, Bulgaria still manages to attract

SCIENTIFIC CONFERENCE WITH INTERNATIONAL MULTIDISCIPLINARY PARTICIPATION SOCIAL SCIENCES AND ARTS 2016

more foreign investment per capita in comparison with Lithuania, Turkey, Romania and Poland (see. Fig. 3).

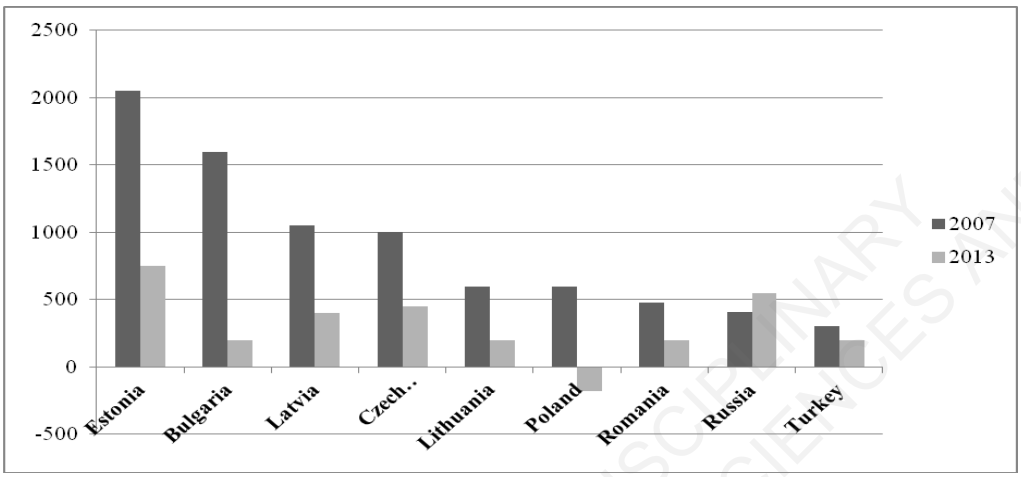
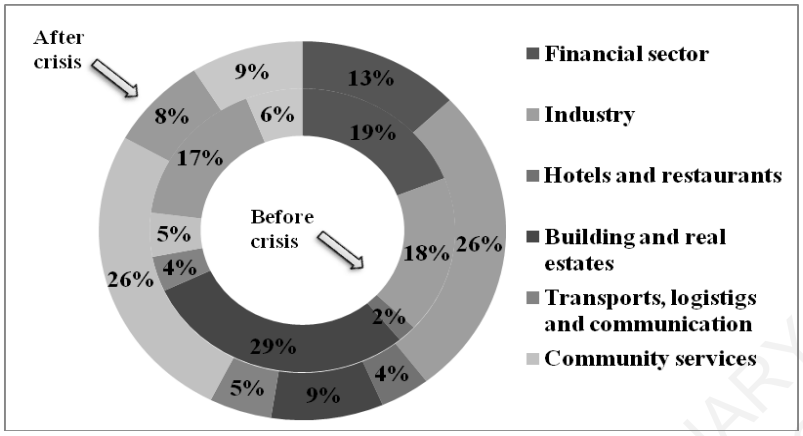


Fig. 3. FDI per capita in CEE

Source: UNCTAD

About 25% of all foreign direct investments in Bulgaria for the period 1996-2014, were invested in the construction and real estate, which have invested a total of 10.8 billion euro. Secondly, as an attractive sector for foreign investors is the industry. In mining and manufacturing industries have been invested a total of 8.8 billion euro or 20% of all foreign direct investment for the years since 1996. The financial sector has managed to attract 7.7 billion euro or 18% of all foreign capital for IT, making it third in attractiveness after construction and industry. About 15% of foreign capital is intended for companies dealing with trade, in which it had invested 6.7 billion euro. In companies providing utilities have invested 10% of the received funds or 4.2 billion euro. Businesses dealing with transport, storage and communications attracted 4% of foreign investments for the period after 1996, and in hotels and restaurants are invested 900 million euro or 2% of all foreign capital in the period.

In the period after the crisis relatively less foreign investments are directed to companies in trade, construction and real estate and financial sector compared with the period before the crisis. However, the share of investment in industry, utilities, hotels and restaurants, as well as companies dealing with transport, storage and communications has grown. The share of foreign investment in construction and real estate shrinks more than 3 times after the crisis. Nearly 29% of foreign investment in the period 1998-2008 was targeted in the construction sector and real estate compared to 9% in 2009-2014. The share of investment in trade has also contracted significantly - more than twice after 2009 compared with pre-crisis period. In parallel, the industry after the crisis becomes relatively more attractive to foreign investors, concentrating 27% of capital raised since 2009 (see. Fig. 4). [8].



Remark: Period before crisis includes 1998 – 2008, the period after crisis includes 2009 – 2014

Fig. 4. Distribution of foreign direct investment in Bulgaria by economic activity "before" and "after" the crisis

Source: Industry Watch data by BNB

The analysis of FDI as a factor of economic stability in Bulgaria it is necessary to bring these recommendations to attract:

- Coordination of common industrial policy and priority development sectors.
- Coordination of practical methods for dialogue between government, business, nonprofit organizations and educational institutions regarding the development of priority industries.
- Coordination of regional priorities and policies to attract investment.
- Strategy of Bulgaria for investment combines traditional sectors and the sectors of the future in order to create stable industrial clusters, including the need to:
- Electronics, transport equipment and machinery, chemicals and plastics, food, logistics, IT outsourcing - sectors with high priority where Bulgaria has certain competitive.
- Healthcare and pharmaceuticals are sectors with high added value and high potential but require institutional efforts to attract major investors.
- Overall Bulgaria should focus on a few more broadly defined clusters, ie. Pomegranate. Industries with high potential where it should establish itself as a leader in innovation in the next 10 years:
- IT and outsourcing - focus on attracting additional investments in IT / software outsourcing, as well as targets in the development of the industry in other parts of the country.
- "Clean" technology – "clean" technologies are evolving cluster that brings together several sub industries (mechanics, electronics, chemistry and biotechnology).
- Biotechnology related to food and agriculture - Bulgaria should aim both to attract major investments in the food sector and agriculture and investments related to organic food, food additives and others.
- Industries related to health and wellness - Bulgaria can use its natural resources to build infrastructure in healthcare and pharmaceuticals.

CONCLUSION

Future policy in this area should provide groups of measures targeted at creating attractive conditions for FDI:

1. improvement of the legislation, its implementation and the judiciary;
2. improvements in fiscal policy and public finances;
3. improving the institutional environment;
4. improvements on business performance;
5. improvement in infrastructure;
6. improvements in technology infrastructure;
7. improvements in scientific infrastructure;
8. improvements in education.

Notwithstanding the rather critical attitude of international organizations towards the use of those incentives are actively used in the competitive struggle to attract FDI. Moreover, in the 90s the use of stimulus measures worldwide has significantly expanded. In the practice developed countries primarily have used financial incentives and investment in infrastructure and developing countries and those in transition - fiscal measures. Changing the situation with FDI in the coming years requires a revision of policy and betting adopted in international practice principles and also reviews the priority areas in which they are directed. The limited investment resources requires a clear resolve issues such as methods of incentive targets that must be expended funds priority areas for attracting FDI [7].

International practice shows that the use of specific incentives can become an important tool for the implementation of the above priorities. In recent years, Bulgaria will rely mainly on fiscal incentives, and the government must decide which is more important and significant: obtaining tax the income of a relatively small volume of investments or providing favourable conditions, together with other measures capable of lead to rapid and significant increase in the inflow of foreign investment and thus increased tax revenues in the future.

REFERENCES

[1] Колев, К., Инвестиции, издателство „Авангард Принт", ISBN 978 -954 -32 3 - 903 – 0, с. 190, 2011.

[2] Колев, К., А. Киров, Анализ на банковото кредитиране по икономически сектори. ISBN 978 -954 -323 -902 – 3, с. 61, 2011.

[3] Стоенчев, Н., Статистика, Изд. къща на ЛТУ, София, ISBN 978-954-332-104-9, с. 328, 2013.

[4] Žilinskė, Asta, Negative and positive effects of foreign direct investment, Economics and management, pp. 332-336, 2010.

[5] Nguyen, Thanh Nga, Foreign Direct Investment in Real Estate Projects and Macroeconomic Instability, ASEAN Economic Bulletin, Vol. 28, pp. 74-96, 2011.

[6] UNCTAD, Best Practices in Investment for Development, New York and Geneva, 2011, Investment Advisory Series, Series B, number 5.

[7] www.investbg.government.bg/bg - Българска агенция за инвестиции

[8] www.bnb.bg - БНБ

FORMING A PHILOSOPHY OF PROJECT MANAGEMET OF CULTURAL DEVELOPMENT

Assoc. Prof., PhD. Yulia Polozhentseva
Prof. Irina Ershova
Assoc. Prof., PhD. Maria Kozeva
Assoc. Prof., PhD. Oleg Kalimov

Southwest State University, **Russia**

ABSTRACT The research work is focused on identifying the specific aspects of development and implementation of project management strategies in the arts and culture sector, on assessing the influence of culture on socio-economic development and on studying the process of forming a philosophy of project management which would foster cultural development.

The article indicates the guidelines for advancement of the philosophy of cultural project management on the basis of systematizing of the principles, factors, methods and forms of project management in the culture sector. It presents the assessment of actual state regulation effects in the socio-cultural sphere at a regional level.

As a result of the research, the specific aspects in designing projects for culture and art development have been elucidated. The projects are considered as means for creating cultural amenities as public goods and services within the framework of market-driven economy. The article rationalizes and reveals the contents of the principles, factors, methods and forms of project management in the culture sector. It indicates the guidelines for advancement of project management in the culture sector on the basis of a case study focused on a particular region. It also provides evidence for the importance of project management the culture sector in terms of the present-day social environment.

Keywords: project; culture; management; principles; methods.

INTRODUCTION

The issues of interrelationship between socio-economic transformations and changes in the arts and culture sector remain rather polemical. The complexity of formalization of cultural factors, variety of the elements and diverse definitions of the very concept of *culture* hinder the conclusive proof of economic changes as a consequence of cultural environment effects. At the same time, according to a view shared by a number of economists, the obviousness of the effect socio-cultural attitudes have on economic development, well-being of an individual as well as the whole of society is definite and can be supported with numerous history facts.

There are a lot of examples which provide evidence of the effect socio-cultural factors had on economic behavior during Soviet period, such as drastic changes in cultural and social life through implementation of a package of policies initiated in terms of Cultural Revolution in the USSR in the 20-30th of the XX century. Cultural Revolution was viewed as a significant element of social and economic reforms, which had no less important consequences than industrialization and collectivization. In this case we do

not regard Cultural Revolution results, but only assess its effect on socio-economic development.

The studies of socio-economic processes and phenomena do not usually pay due regard to the factor of culture; although, it is the aggregate of cultural values and attitudes that may become the determinant factor for economic achievements against a rude commitment to profit-making which has conventionally been viewed as the main driver to market-based system development.

Within the context of establishing the single economic, socio-cultural and informational space, research activities which address the trends of culture development and are meant to reconsider its role in socio-economic and human development are becoming ever more relevant. Culture as an essential for the spiritual and moral advancement of a society must become a factor for economic and political sustainability. Integrative role of culture can become a determinant in developing cultural policy technologies in accordance with the present-day public mentality as well as the scope of actions towards preservation and development of the national and regional cultural assets.

Definition and implementation of the priorities and strategic targets of cultural policy usually involve technologies of conventional management which are not always as effective, whereas application of project management in this sphere can appear fruitful.

In terms of intense economic and social development project management has been assuming special significance and is implemented in various fields and particular specific profiles.

Promotion of cultural projects is associated with the enhancement of the role of culture in social and economic reforms and establishing a new cultural policy. Updating of project management methods as well as developing and implementing of innovative projects in the arts and culture sector can tangibly change life environment and life patterns for many people.

Cultural projects foster creation of unique products services and effects; those outcomes shape a multi-dimensional social space and cultural essentials of human living.

Target values are generally accepted project performance indicators. Arriving at target values is determinant for project structure, scope schedule and a definite result in the form of a product or a service, sometimes innovative. Consequently, project management has its specific performance aspects which differ from those in classical management procedure.

The scope of project management activities basically involves problem management and change management.

Solving currently existing problems in culture, cultural advancement of the society, regulation of socio-cultural processes and a number of other issues can become objects of project management activities. Creating a holistic philosophy of project management in culture involves clear definition of the principles, growth factors, techniques and forms of management.

The concept of culture is a subject of academic inquiry in many sciences; each of them interprets it in a particular way. Economic sciences articulate the concept of culture as a

type of human activities, forms and ways of self-understanding and self-expression, creating of skills and abilities by both an individual and the society. Socio-cultural activity and the results of this activity as well as the level of personality development are three aspects of the essence of culture.

The influence of culture on social and economic development was conclusively considered by A. Koksharov [1], N. Lebedeva [2],N. Levkin [3] and a number of other authors.

L. Harrison, an American economist, the past director of the Cultural Change Institute at the Fletcher School, Tafts University, presented his assessment of the importance of culture for economic outcomes in his numerous publications [4].

The fact that culture affects the development of a given region is substantiated in [5], the insight into pillar cultural values as the factor of social and economic development is provided in [6]; the effects of culture on the performance of state institutions are presented in [7].

Thus, the correlation of culture and economic development remains a topical research issue and the scope of study that needs further investigation and demands searching for new advanced assessment and control tools.

The specific aspects of project management in the arts and culture sector are covered in [8] and [9]; however, so far no holistic philosophy of project management of culture development has been elaborated. In [10] we considered a possibility to apply integral criteria for assessing the outcomes of the activities and setting up a development strategy to be employed in the process of project management.

The project approach facilitates well-reasoned target-setting in cultural activities, efficient disposal of financial, human and informational resources, improvement of the quality of cultural services, development of creative approaches and solutions in the sphere of culture.

In the context of the transition of the national economy to the innovation-based course of development culture is imposed a prominent mission of human capital assets formation. Various types of state and municipal activities alongside with independent projects are able to build up a highly developed market of cultural amenities and services.

Project management in culture is understood as the scope of management activities carried through by the subjects of cultural policy intended to development of a package of actions and measures conducive to effective solution of the current cultural issues within a certain timeframe.

The growing relevancy of cultural project management as means to develop advanced strategies for implementation of the national cultural policy in terms of social and economic transformation is obvious. At the same time, the experience of implementation and involvement of project management techniques in socio-cultural activity requires further studies and profound analysis.

At present, the specific feature of cultural management in Russia is deconcentration and variety of cultural activities in different regions, which makes it possible to identify different approaches to project management implementation [11].

Cultural project management follows certain principles, which are determined by both the state policy in this sphere and the general principles of project management. We have outlined a version of the scope of principles of project management in culture and art which is presented in Table 1.

Table 1. The principles of project management in culture and art.

The principles of management	Contents
The principle of openness to public and transparency	It means absolute openness and availability of the projects to the public, presentation of the project content in mass media, where the projects should be explicated as those designed and intended to meet public needs.
The principle of democratic attitude	According to this principle any subjects of cultural activity as well as action groups or public experts may participate in cultural projects.
The principle of tolerance	It ensures the development and embracement of different cultures and public values and therefore provides pluralism.
The principle of sistematicity and consistency	It ensures a systematic approach to management, integration into the whole system of national and regional management of social and economic development, demands consistent mentality in project managers, development of system project management models, presentation of the projects in an integral and structured form.
The principle of performance efficiency	It supposes obtainment of definite outcomes as a result of project implementation and enhancement of efficiency which is defined as outcome to expenditure ratio. Performance efficiency can be evident in different aspects, such as product aspect (efficient creation of a new product), functional aspect (management upgrade) or social aspect (improvement of the quality of life).
The principle of innovativeness	It postulates inclusion of new types of cultural services into project contents, creation of innovative cultural products and objects of art, development and implementation of new forms and methods of activity in the market of cultural services, building new organizational structures.
The principle of historicism	It supposes application of cumulative experience of cultural development in Russia and abroad and introduction of the best cultural achievements pertaining to a particular historical period.

Using the principles of project activities may become a driver to cultural policy implementation. At present projects are initiated and accomplished along with growing complicatedness of both the external environment and the internals of cultural processes.

The subjects of cultural policy implement various creative ideas as part of their project activities, forming a market of cultural amenities and services. In the context of project management not only state and municipal organizations, but also independent project authors may act as subjects of cultural policy, that considerably increases opportunities for culture and art development.

In the present-day context it is difficult to form permanent institutions for management of the arts and culture sector which would be able to accomplish all the sector-related tasks. Project activities (as a vehicle for cultural policy implementation) are considered in terms of growing complicatedness of cultural processes. That makes it necessary to develop a number of various technologies, including advances technologies in the humanities (the so-called "hi-hume"), which would facilitate solution of the relevant cultural and social issues and upgrading the tools for their solution.

Project activities foster the extension of cultural variety, catalyze integration of the subjects of cultural policy and facilitate their interoperability.

Broad-scale development of project activities is the factor to ensure active involvement of the population into cultural affairs. Projects allow better response to the local context and join hands of different subjects of cultural policy, which is also beneficial for the extension of cultural variety.

In Kursk region the development of cultural activities is regulated by the Law on Culture and the Regional State Program for the Development of Culture in Kursk Region, adopted in 2013 with a number of further amendments [12]. The program executive in charge is the Committee for Culture of the Administration of Kursk region. Within the program structure there are three sub-programs: "Heritage", "Art" and "Ensuring the conditions for the State Program implementation". However, the Program Passport does not provide recommended program-facilitating instruments, which considerably hinders accomplishment of the main actions set to be launched according to this document. Despite the budgeting of the Program, a lot of actions declared yet remain declared.

In this respect, the experience of project management of culture development in Belgorod region is worth sharing. One of the elements of the state planning system in Belgorod region which are intended to effective managing the arts and culture sector and ensuring implementation of the main principles of the state and the regional policy in this sector, is the Concept for Socio-Cultural Clustering Project Development in the Municipalities of Belgorod region for the period of 2012-2017 [13].

The Concept is based on the provisions of the Program for the Improvement of the Quality of Life in Belgorod Region and 2025 Strategy of Social and Economic Development of Belgorod Region. According to that, a socio-cultural cluster, where cultural, educational and public organizations, business and the population are engaged, is formed in each municipality of the region.

Since the culture in an ultimate humanitarian constituent of human life environment and affects all its aspects, it is a powerful driver for a sustainable social and economic development on both the local (municipal) and the regional scale. It is also a feasible resource for implementation of the innovation-based economy principles and innovative inputs.

Socio-cultural clusters of the region can become propulsive territorial units, which would catalyze the economic development of the region [14].

Project-oriented management is a tool for attraction of the necessary resources to the culture sector. The projects give a boost to raising funds from budgets at any level, non-budgetary foundations and private investors, facilitate sustainable development of entrepreneurial activity in culture-associated organizations; they ensure goal orientation, financial flexibility and expenditure control.

The factors for development of project management in the arts and culture sector can be broken up into the following groups: those related to economic legislation, to social and demographic environment and to organizational aspects and economic relations in integrated business. Analysis, assessment and leveraging of those factors are deemed essential to prompt the development of cultural project management.

Project design and implementation should employ special methods and forms of management. Thus, the methods of quantitative assessment of factor influence on project results are widely applied in the practice of project management today.

Mathematical methods are most frequently used. They are based on operations research models, namely correlation and regression analysis, mathematical modeling and programming, the method of expert evaluation etc. Mathematical models make it possible to assess performance efficiency and effectiveness of projects. At that, managing only one project may involve application of several different information and optimization models. Model type and structure are determined by the tasks of project management and the availability of true information which would enable arriving to effective solutions.

Application of simulation and network models to project designing appears effective [15]. Simulation model of project management in the arts and culture sector presents a formal description of the logic of cultural system operation and the interaction of its elements in the course of time. It is built with account of most important cause-and-effect relations pertinent to the culture sector and ensures conducting statistical experiments.

The scope of application for simulation modeling is virtually unlimited, so the only question that may arise is as to the appropriateness of its application to cultural projects and the expediency regarding man-hours for model-building. Since simulation modeling rests upon the method of statistical testing, it appears most effective when applied to analysis of complex systems in the culture sector, operation of which is considerably affected by random factors.

Network models remain the main project management tool. They enable activity scheduling, optimizing of resource usage, regulation of activity duration depending on the cost of work, organizing operational management and control in the course of project implementation.

Project management performance efficiency depends to a large extent on the organizational structure applied. The choice and projecting of the organizational structure as well as its analysis and building compound a responsible and complex cross-disciplinary activity, which is also difficult to structure and formalize.

CONCLUSION

The dynamics of social progress correlates with economic achievements at different stages of the society history. The contemporary post-industrial period is characterized with the rapid pace of economic growth and social dynamics and, therefore, opens up new opportunities for the development of creative arts industries and entrepreneurship in this field. Projects in the culture sector present a special form of cultural activity organization. It enables using alternative types of resources, creating various management models, building up social partnership of state and private organizations and so on.

Project management in the culture sector rests on certain principles and involves assessment of the factors, related to economic legislation, to social and demographic environment and to organizational aspects and economic relations in integrated business. It also employs special methods and forms of management. Quantitative methods and models based on statistical experiment make it possible to analyze projects in the arts and culture sector with allowances made for random factors. The modeling results facilitate better project substantiation and explicability which results in improvement of their performance efficiency. Building an appropriate organizational structure ensures project goal achievement.

ACKNOWLEDGEMENTS

The study was performed under the grant of the President of the Russian Federation for state support of leading scientific schools number Scientific School-9726.2016.6 "The implementation of state economic policy through the development of tools for strategic and indicative planning".

REFERENCES

[1] Koksharov A., 2013. The influence of culture on economic development, edition: "The humanities research", number 11, (Online), URL: http://human.snauka.ru/2013/11/4609 [Accessed 20.06. 2016].

[2] Lebedeva NM, Bushina EV, 2015. The impact of values and motivation of the person on the creative behavior and attitude towards innovation; edition: "Psychology in economics and management", Vol.7, №1, pp. 26-35.

[3] Levkin N.V. Economics and culture: direct interaction and feedback on system level, (Online), URL: http: www.econorus.org/consp/files/kovn.doc [Accessed 20.06.2016].

[4] Lawrence E. Harrison. Culture and Economic Development, (Online), URL: http://www.cato-unbound.org/2006/12/03/lawrence-e-harrison/culture-economic-development [Accessed 20.06.2016].

[5] Sarychev P.V., 2010. The effect of the sphere of culture to socio-economic development of the region; edition: "The socio-economic phenomena and processes", №6 (022), pp. 158-161.

[6] Dinislamova SR, July, 2015. Valuable bases of culture as a factor of social and economic development; edition: "Culture and education", number 7, (Online), URL: http://vestnik-rzi.ru/2015/07/3497 [Accessed 20.06.2016].

[7] Vertakova Yu., Polozhentseva Yu., Plotnikov V. Directions of Human Potential Development in Russia // Procedia Economics and Finance. 2015. Vol. 23 pp. 495-500.

[8] Kharchenko KV Project management in the field of culture, (Online), URL: http://www.cultmanager.ru/article/4455-upravlenie-proektami-v-sfere-kultury [Accessed 20.06.2016].

[9] Androsov NO Terms and conditions of creating socio-cultural cluster in the Belgorod region, (Online), URL: http://dspace.bsu.edu.ru/bitstream/123456789/10803/1/Androsova_Terms.pdf [Accessed 20.06.2016].

[10] Kozeva MS, 2015. Development Strategy based on the integral criterion. Proceedings of the 1st international academic and practical conference "Innovative approaches to the solution of socio-economic, legal and educational problems of modern society." Voronezh, Institute of Economics and Law, VIEL press, pp. 162-166.

[11] Vertakova Yu.V., Ershova I.G., Plotnikov V.A. Educational System Influence on Knowledge Economy Formation // World Applied Sciences Journal 27 (5): 679-683, 2013.

[12] The Regional State Program for the Development of Culture in Kursk Region "State program of Kursk region" Cultural development in the Kursk region »", (Online), URL: http://adm.rkursk.ru/index.php?id = 1167 & mat_id = 54840 [Accessed 20.06.2016].

[13] Vertakova Yu., Plotnikov V., Chulakova A. Corporate social responsibility: problems and prospects // SGEM. Political sciences, law, finance, economics and tourism, Vol I. International Multidisciplinary Scientific Conferences on Social Sciences and Arts. 2014. pp. 59-66.

[14] Vertakova Yu, Plotnikov V.A. 2016. Typology of approaches to the formation and development of propulsion clusters in the region's economy; edition "Economics and Management", №3 (125), pp.10-18.

[15] Project management: a fundamental course. Coursebook. AV Aleshin, VM Anshin, KA Bagrationi and others; under the editorship of VM Anshina, O. Ilyina, 2013. National research university "Higher School of Economics", Moscow, publishing house of Higher School of Economics (620 p).

SCIENTIFIC CONFERENCE INTERNATIONAL MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS

GOVERNMENT BUDGET BALANCE AND DEBT SUSTAINABILITY IN THE VISEGRAD GROUP

Jana Chrenková, PhD.

Marek Kálovec, PhD.

University of Economics in Bratislava, **Slovakia**

ABSTRACT

Global economic crisis drew more attention of researchers and policy makers to fiscal sustainability. The paper focuses on empirical analysis of public finance consolidation and debt burden in countries of Central Europe integrated in The Visegrad Group (V4). Existing literature indicates that debt sustainability is becoming a vital element of sound macroeconomic policies but its assessment is not always clear. Our results of empirical analysis provide projections of debt dynamics scenarios based on interest rates-growth differentials in individual countries of the V4 and they suggest consolidation strategies in analysed countries should be based on the expenditure side of public finances.

Keywords: debt dynamics, fiscal sustainability, The Visegrad Group

INTRODUCTION

Decades of even increasing public debts raise the question of what lies behind such a development. The main cause of long-term public debt is still a chronic recurring deficit. Level of public debt is critically influenced by the pace of economic growth, the size and frequency of the primary deficit, interest payments, interest rate, tax legislation and inflation. Since the global financial crises economic research has paid increasing attention on the debt and fiscal sustainability. Several studies have analysed empirical analysis of the effectiveness of fiscal rules and founds differences across the Visegrad countries [8]. However Visegrad countries has weathered the crisis better than the EU even though its initial fiscal position was worse [11]. Moreover it is shown that in the long term, the fiscal consolidation process will be hindered due to unfavourable demographic trends and the burden on public finances imposed by social security systems.

METHODOLOGY

The paper model is based on debt sustainability formula called budget constraint equation (1) reflecting fiscal stability as a change of debt to GDP ratio that depends on primary balance ratio and differential between real interest rate and real GDP growth as mentioned in [1], [2], [13], [7]. We exclude monetary base changes because of the fact that despite three of four countries are not in single currency area, the European System of Central Banks restricts national banks from monetization of sovereign debt on primary market.

$$\frac{B_t}{Y_t} - \frac{B_{t-1}}{Y_{t-1}} = (r - g)\frac{B_{t-1}}{Y_{t-1}} + \frac{(G_t - T_t)}{Y_t} \quad (1)$$

Thus the interest rate-growth relationship becomes crucial determinant of debt sustainability. Growing difference between these indicators may cause disruptive effects on fiscal stability even if government is keeping primary balance unchanged or positive. Blanchard et all [1] describe four tendencies how debt could converge or diverge according to interest rate-growth differential (Figure 1).

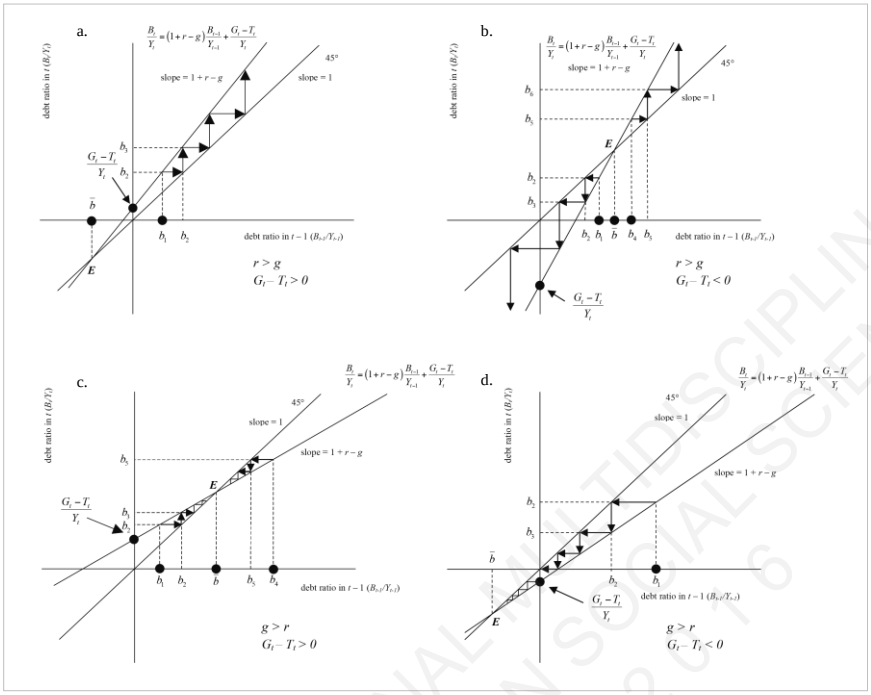


Figure 1
Debt dynamics based on interest rate-growth differential and primary balance
Source: Blanchard, O. – Amighini, A. – Giavazzi, F.: High Debt. In. *Macroeconomics: A European Perspective*, 2010, authors' illustration

As Figure 1 illustrates, debt dynamics depends on initial primary balance and the interest rate-growth relation. Steeper curve in *a.* and *b.* (flatter in *c.* and *d.*) represents differential equation with the slope depending on interest rate-growth relation. If interest rate exceeds the growth the curve becomes steeper with negative consequences on debt dynamics and vice-versa. Curve with slope equal 1 represents the situation when there is no change in debt ratio, i.e. $b_t = b_{t-1}$. Thus figure 1 demonstrates four cases how economies could reach fiscal stability i.e. $\Delta b = 0$ under circumstances of interest rate exceeding growth $(r > g)$ with initial primary balance deficit $(G_t - T_t > 0)$ on *a.* or surplus $(G_t - T_t < 0)$ on *b.*; or in a case of growth surpassing interest rate $(g > r)$ with government primary deficit on *c.* or primary surplus on figure 1 in part *d.*

Based on debt arithmetics we analyzed two elements of debt sustainability formula – government primary balance and interest rate-growth differential in two periods – pre-crisis period between 2000 and 2008 and post-crisis period between 2009 and 2014 in the Visegrad Group. Empirical analysis is based on data of government consolidated gross debt, GDP deflator and real GDP growth available in Eurostat database, primary deficit from AMECO, long-term interest rates on government bond yields taken from

European Central Bank and Eurostat and primary balance available in AMECO and OECD Statistics.

EMPIRICAL ANALYSIS

The interest rate-growth differential is crucial determinant of fiscal stability. While the Euro Area interest rates went down since EMU creation in 1999, they varied differently in the Central European region. Monetary union and common policy set convergence trend for Member States' interest rates until 2010, but political and economic conditions in Czech Republic, Hungary, Poland and Slovakia determined individual interest rates development. Each country was considered from two points of view: as a region player and as an economy with individual political institutions.

While the EU has been forming the monetary union since 1999, V4 countries were finishing transition process with the main goal to enter the European Union in 2004. This period since 2000 was well-known as reform challenging to set simpler and more transparent rules for entrepreneurship and government decision making in order to support local small and medium companies and to attract foreign capital. Nominal interest rates were declining steadily in Czech Republic, Poland and Slovakia since 2000 whereas Hungary met several difficulties on financial markets when the crisis hit the economy in 2009. What determined real interest rates especially in 2009 was inflation in these economies, deflation respectively. Except Poland, all three countries of the region came into recession in 2009 showing declining GDP from 4,8 to 6,6 per cent. Polish economy offset foreign demand shock by domestic consumption, thus with no negative effect on real output. Since 2000, Central European economies have had no experience with recession until financial crisis in 2009. This period offered an opportunity to stabilise fiscal conditions and to reduce debt burden created in Hungary (early 1990's) and in Czech Republic and Slovakia in the late 90's.

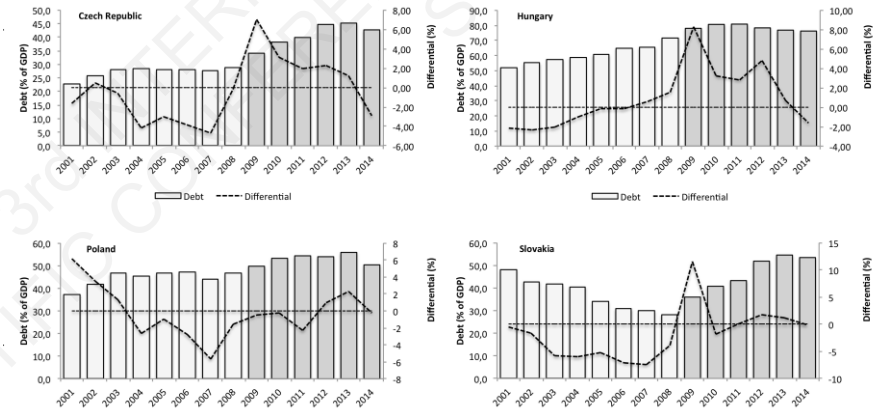


Figure 2
Interest rates-growth differentials and debt level in V4 countries (%)
Source: Eurostat, authors' calculations
Notes: Differential calculated as difference of real long-term interest rates and real GDP growth.

Real interest rates are not such significant indicators themselves in respect to debt sustainability in Central Europe or elsewhere. If economic annual performance exceeds real rates, government might reach fiscal stability even under conditions of primary balance deficit. Figure 2 illustrates interest rates-growth differentials in each of analysed countries and debt level as a percentage of GDP since 2001.

Recall that negative value reflects situation when real growth exceeds the real interest rate. It is evident that pre-crisis time has meant the opportunity to lower debt ratio in Czech Republic, Hungary and Slovakia and even better in Poland.

Furthermore based on debt arithmetics formula we make simple scenarios how the debt dynamics could evolve in following years for each economy of the V4 countries (Figure 3). Under assumption of unchanging exogenous variable of the government primary balance taken as fixed from last observed period, we can project different trends in debt dynamics according to differential between interest rates and GDP growth. As the study [14] assumes, current low interest rates created expectations of future interest rates and dragged down long-term interest rates. As monetary policy changes and rates will rise, it is likely to expect increasing interest rates-growth differential by around 1 to ¼ percentage points. On the other hand, quantitative easing measure and expectations of higher inflation may reduce real long-term interest rates and create a particular field for government primary balance operations.

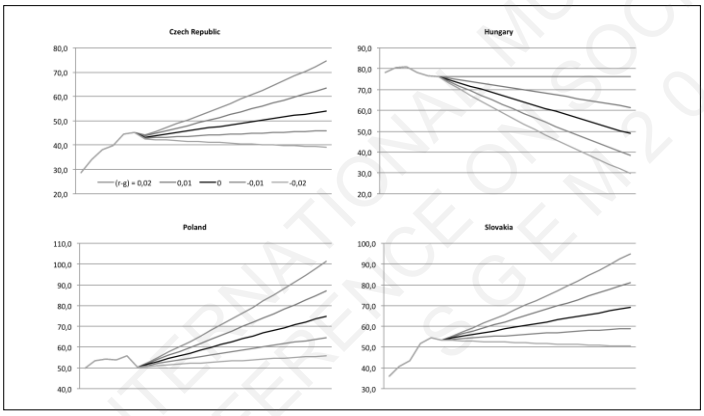


Figure 3
Debt dynamics projections of V4 countries based on (r-g) differential (% of GDP)
Source: Eurostat, authors' calculations

If Czech economy manages to generate annual growth exceeding interest rates from existing debt by 1 per cent in following period, there is more room for government to enforce fiscal consolidation by primary balance constraints. Under public finance deficit in Czech Republic, debt dynamics would converge to although stabilized but higher level copying chart c. in Figure 1. Growing differential to higher than 1,5 percentage points would offer more favorable conditions for achieving fiscal stability or even continuous debt lowering even with primary balance deficit of Czech government public budget finance. Last observed conditions of Czech economy represented by 1,1 percentage point of differential and 0,63 primary balance deficit means positive trends to stabilize and lower debt ratio as a percentage of GDP, assuming the economy will keep growing sufficiently, i.e. exceeding situation on financial markets.

Hungary fell under Excessive Deficit Procedure (EDP) even before the outbreak of economic crisis (between 2004 and 2013). Due to fiscal expansion in the pre-crisis period when it enjoyed positive economic growth, Hungary was not able to pursue anti-cyclical policy measures during economic downturn. In 2008 the country received funds from Stand-by-Arrangement by IMF in the amount of approx. 12,3 billion EUR, in order to avert a deepening of financial market pressures. This economic program was based on two key objectives [4]: "to implement a substantial fiscal adjustment to ensure that the government's debt-financing needs will decline; and to maintain adequate liquidity and strong levels of capital in the banking system."

Fiscal consolidation concentrated mainly on the expenditure side and brought significant improvement in period between 2012 and 2014. Especially after exit from EDP in 2013, deficits of general government stabilized to a level around 2,5% of GDP. According to OECD projections, Hungary's budget deficit will decline to 2,3 percent of GDP in 2015 and further diminish to 1,9% in the following year [10].

Based on debt dynamics and data from 2014, by keeping the primary budget constraints with primary government surplus of 1,52% (in 2014) and reaching differential negative ($r - g < 0$), Hungary could reduce the highest debt level in region significantly and thus lower pressure on debt service payments in following years (see chart d. in Figure 1).

Government in Poland should adopt fiscal consolidation and keep the commitment in public finance budget restrictions. When analyzing slightly negative differential ($r - g < 0$) in comparison to other economies in Central Europe (reaching -0,2%) and bigger primary balance deficit of central government in 2014 (-1,36%), it seems necessary. Not lowering primary balance as an exogenous variable to almost zero with growth exceeding interest rates very slightly, could represent debt dynamics illustrated on the right side from point E of chart c. in Figure 1, i.e. disruptive effect on fiscal stability.

According to estimates [5] "reasonable" debt threshold for a small open economy such as Slovakia should be debt lower than 50 percent of GDP. This threshold is presented as "appropriate" as a result of Slovakia being member of Eurozone (thus lacking monetary independence, debt pooling and bailout) and still showing some signs of emerging market economy. After stabilizing the public debt at level below 55% of GDP, Slovakia "is not expected to face major risks in the medium term" [3]. However, major risks such as demographic development, inefficient health care expenses remain to be tackled.

Due to similar conditions in interest rates-growth relationship as in Poland (negative differential of -0,2% in 2014), government should push more on balanced budget – pull it down from deficit of 0,87% in 2014 – to avoid rise of debt to GDP ratio and keep the debt stabilized (reach debt dynamic on chart d. in Figure 1). Otherwise the country can expect serious difficulties with debt sustainability (right side of chart c. in Figure 1 scenario) especially if the European Central Bank will stop current monetary policy measures and hike the interest rates. Then expectations of future long-term interest rates could become self-fulfilling prophecy.

CONCLUSION

Debt arithmetics is not a crearly sufficient way to evaluate fiscal responses to changes in debt sustainability. The problem evolves when we abandon assumptions of fixed

interest rate-growth differential or primary balance of the government. For this results and implications, further research is needed. What we can do for now, is to asses current fiscal position of Central European countries and to draw simple projections of next development under certain conditions in each economy.

Czech Republic with the lowest debt ratio in the region should keep the way of lowering primary balance deficit despite sufficient interest rate-growth differential. Primary balance unchanged the economy could reverse from debt pulling down trajectory to disruptive effects of fiscal stability if differential would rise closer to zero level.

Keeping the Hungarian budget constraints and differential negative, the country could reduce high debt level significantly and thus lower pressure on debt service payments. In spite of severe financial difficulties of the economy, Hungary still generate relatively sufficient interest rate-growth differential. This allows government to operate in slight deficit or accelerate fiscal consolidation. The question is whether new government will invest primary balance surpluses into debt lowering or will use it in a very different way.

Poland should adopt fiscal consolidation and public finance budget restrictions as soon as possible. Unlike previous countries, in Poland there is the problem of slightly negative differential and bigger primary balance deficit of government in Warsaw. Not lowering primary balance to almost zero with the growth exceeding interest rates by small portion could exacerbate positive trends in debt reduction since 2009.

There has never been more favorable borrowing conditions for Slovakia than recent year. That does not mean it will prevail for a long period. Countries of Central and Eastern Europe are more sensitive to capital flow and negative differential ($r - g < 0$) may change to positive quickly. Slovak government is trying to set the goal of a balanced budget in 2017. If reached, this move would create trend not only for fiscal stability institutionalized in Council for Budget Responsibility but even for slight debt lowering implied in Constitution.

In order to assess fiscal sustainability, one has to take into account comprehensive liabilities of a given government, including also "hidden debt" (referring for instance to future liabilities such as unfunded pensions, state guarantees, etc.) For instance, significant hidden debts include financial liabilities owed to future payments in the state funded pension system. In Poland, large part of hidden debt was created by local governments, which established SPVs to borrow money from the market and avoided these lendings to burden local budget [3].

Some studies [12] emphasize that the most convenient scenario for European economies would be to stabilize public debt taking into account increased probability of achieving a stabilizing primary balance. Moreover all observed countries show a rather rigid structure of public finances. For example in Poland, 72% of public expenses were fixed in 2009. Slovakia and Czech Republic, where current levels of public spending range from 40 to 45% of GDP, show actually the first and second lowest ratio among V4 countries and are also well below EU average [6]. Given the fact that structure of their public finances is quite rigid, fiscal consolidation based on cuts in existing expense categories can prove to be rather challenging. On the other hand, Hungary has a relatively high level of public expenditures – about 50 percent of GDP in 2014. Therefore, consolidation strategy should be mainly based on the expenditure side of public finances. However, to reduce public investment may be contrary to desired

improvement of infrastructure and increases in efficiencies in priority sectors leading to higher welfare and economic growth.

Another obstacle on the path towards fiscal consolidation shared among countries in the region is the inflow of EU budget allocations and funds that require substantial co-financing from the beneficiary country.

To find a solution within existing resources, there is only one way: by increasing efficiency of expenses. According to OECD [9], spending efficiency can be increased by: (i) revisiting government wages, (ii) ensuring transparency in public procurement, (iii) improving public services efficiency, (iv) improving collection of taxes, (v) reducing tax expenditures to remove distortions, (vi) reforming entitlement programmes selectively, (vii) reforming public pension systems, (viii) increasing spending on education and R&D and (ix) increasing infrastructure to support growth. Concerning the three lastly mentioned categories of measures, these are for V4 countries particularly important factors and they deserve more attention.

ACKNOWLEDGEMENTS

Paper is the result of project VEGA 1/0393/16 “European Union in Post-crisis Period – Macroeconomic and Microeconomic Aspects”.

REFERENCES

[1] Blanchard, O., Amighini, A., Giavazzi, F., Macroeconomics: A European Perspective. Harlow : Pearson Education Limited, 2010. 586 p.

[2] Burda, M., Wyplosz. Ch., Macroeconomics: A European Text. Oxford : Oxford University Press, 2005. 600 p.

[3] European Commission, COMMISSION STAFF WORKING DOCUMENT, Country Report Slovakia 2015, http://ec.europa.eu/europe2020/pdf/csr2015/cr2015_slovakia_en.pdf, [accessed 2.2.2016].

[4] IMF, Executive Board Approves €12.3 Billion Stand-By Arrangement for Hungary, Press Release, No. 08/275, November 6, 2008, https://www.imf.org/external/np/sec/pr/2008/pr08275.htm, [accessed 26.1.2016].

[5] IMF, IMF Country Report No. 16/14, January 2016, THE SLOVAK REPUBLIC, SELECTED ISSUES PAPER, http://www.imf.org/external/pubs/ft/scr/2016/cr1614.pdf, [accessed 10.2.2016].

[6] INEKO, Public finance consolidation in V4 plus Ukraine, COMPENDIUM OF COUNTRY-SPECIFIC ANALYSES, INEKO and partners, http://www.ineko.sk/projekty/visegrad-fund, [accessed 28.1.2016].

[7] Ley, E., Fiscal (and External) Sustainability. Economic Policy and Debt Department, PREM, The World Bank, 2010. 16 p. Available online: http://siteresources.worldbank.org/INTDEBTDEPT/Resources/468980-1207588563500/4864698-1207588597197/FSPrimer.pdf , [accessed 12.2.2016].

[8] Melecký, A., Gubániová, M., Fiskální pravidla v zemích Visegrádske čtyřky. Ekonomický časopis (Journal of Economics), no. 5, pp. 437-452

[9] OECD, Improving the Fiscal Framework to Enhance Growth in an Era of Fiscal Consolidation in Slovakia, http://www.oecd-ilibrary.org/economics/improving-the-fiscal-framework-to-enhance-growth-in-an-era-of-fiscal-consolidation-in-slovakia_5k4c9kv6b7f2-en?crawler=true, [accessed 4.2.2016]

[10] OECD, OECD Economic Surveys: Hungary 2014, http://www.oecd-ilibrary.org/economics/oecd-economic-surveys-hungary-2014_eco_surveys-hun-2014-en, [accessed 10.2.2016].

[11] Ptak, P., Arithmetic of influence of debt crisis on economies of visegrad group and challenges ahead. Publishing House of Wroclaw University of Ecnomics. Journal Ekonomia XXI Wieku, ISSN 2353-8929.

[12] Stoian, A., Alves R.H., High public debt in the euro area: still a fact. MPRA Munich Personal RePEc Archive, http://mpra.ub.uni-muenchen.de/63679/ [accessed 25.2.2016].

[13] Sturzenegger, F.,Toolkit for the Analysis of Debt Problems. Buenos Aires : Centro de Investigación en Finanzas, 2002. 56 p. Available online: https://ideas.repec.org/p/udt/wpbsdt/veinte.html, [accessed 12.2.2016].

[14] Turner, D., Spinelli F., Interest-rate-growth differentials and government debt dynamics. OECD Journal: Economic Studies, Vol. 2012/1.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

HISTORY AND DEVELOPMENT OF NON-GOVERNMENTAL ORGANISATIONS

PhD Kristaps ZDANOVSKIS[1]

Prof. Irina PILVERE[1]

[1]Latvia University of Agriculture, **Latvia**

ABSTRACT

A non-governmental organisation (NGO) is any non-profit or voluntary organisation, a civil society or any differently defined group of activists having the same interests, the activity of which is organised at local, national or international levels through performing various service or humanitarian assistance functions, advocating the interests of individuals at government and policy maker level, contributing to the engagement of individuals in political processes and providing informational feedback. NGOs have existed and perfected their performance throughout centuries, and historically their operation has not been focused on business or subject to governments. Nowadays, NGOs function as a consultative partner for governments in diverse spheres, for example, human rights, environmental protection, healthcare, agriculture etc., playing an essential role in social development, sustainable community development, sustainable development, and sustainable consumption. A sharp increase in the number of NGOs both at national and at international level in the last 20 years indicates their increasing role and the diverse spheres they represent.

This study *aims* is to analyse the history and development of NGO activity. Methods employed: monographic, descriptive, analysis and synthesis as well as logical construction. Study findings reveal role and importance of NGO on society interest protection since 18th century. Historically most of organizations in the world were existed on human rights and social welfare issues. Seeing increasing role of organization of decision impact, they are developed in various fields. The NGO are one of the most influential ways how society can legal express their view on government policy in domestic and international level.

Keywords: non-governmental organisations; non-profit organisations; civil society.

INTRODUCTION

By nature, NGOs represent activists with the same interests who join to tackle some problem, most often in relation to their dislike of some government policy. Such activist groups have existed for centuries; however, organisations corresponding to the status of NGO emerged in the 18th century [9.]. The key objectives of such organisations related to raising the standard of living for the public. World War I and World War II, taking the lives of many millions, were a turning point in the development of activity of NGOs in the fields of human rights and wellbeing [10.]. An analysis of bibliographical sources reveals that until the middle of the 20th century the sources mainly refer to international NGOs that are well-known and whose activity is spread on a global scale. At the same time, also local and national organisations existed; yet, they mainly focused on domestic activities taking place within their country. Since the middle of the 20th century, information exchange opportunities have increased under globalisation, and the

bibliographical sources start mentioning local and national organisations too, the role and contribution of which within a country is as significant as those of international NGOs [7.].

Particularly the middle of the 20th century was a new turning point in the history and development of NGOs. First, in 1945 the Statute of the United Nations Organisation (UNO) stated that a consultative partner of the Economic and Social Council (ECOSOC) were international NGOs, and in some cases the opinions of national organisations might be taken into consideration as well [13.]. Second, globalisation and progress in technologies such as telecommunications, aircraft traffic, mass media etc. contributed to the activity of organisations across national borders [7.]. In 1980, the World Bank admitted that NGOs were a much more effective and less corrupted partner than a government [3.]. Seeing the increasing role of NGOs in political processes, the popularity and the number of such organisations started considerably rising in the world in the 1990s, thereby representing the public's interests in the most diverse spheres. Particularly due to their capability to historically retain their independence from the influence of governments, NGOs are trusted to defend the public's interests and influence political processes. In governmental political discussions in the whole world, urgent problems are associated with the sustainability of processes. Governments cannot tackle such problems by themselves alone, and they have to have some cooperation with other governments and stakeholders. In decision making, businesses have a 35% influence, NGOs 30% and governments 24% [2.]. NGOs are a link of a government with the public and private businesses, performing the functions of serving one's interests and of analysis. The above-mentioned example regarding the evaluation of influence mentions three parties involved; therefore, NGOs are often called the "third sector".

The research aim is to analyse the history and development of NGO activity. To achieve the aim, the following specific research tasks were set:

1. To analyse the history of emergence of NGOs and describe the most important organisations.
2. To identify the factors in the development of non-governmental organisations.
3. To provide insight into NGOs in the 21st century.
4.

MATERIALS AND METHODS

This study is of theoretical nature and aims to provide the knowledge base for understanding history and development of NGO activity. Therefore, in order to conduct the present research, the authors have used topic-related research papers and books and the information available on the Internet. Methods employed: monographic, descriptive, analysis and synthesis as well as logical construction.

EVALUATION OF RESULTS AND DISCUSSION

History of NGO development until the middle of the 20th century

Non-governmental organisations are high-level participants in social processes both at national and international levels and serve as a political advocate in the interests of less-protected individuals and communities [14.]. The activity of NGOs is much more ancient than the term itself. Scientists have not declared in a single bibliographical source which was the first such organisation in the world, only stressing that the origin of such organisations goes back to the United States of America (USA). NGOs have existed in different forms for centuries, yet, their name and recognition were acquired at the end of the 20th century owing to becoming more numerous and to their higher activity at international level [10.]. It is difficult to summarise the history and origins of NGOs, given the historical, cultural and political factor differences in various parts of the world [9.]. The activity of NGOs in the world is diverse, given the specifics and historical circumstances of a region, stressing that it is not possible to generalise or equalise the activity, history etc. of NGOs [4.]. An analysis of the history of nongovernmental organisations for a long period shows that earlier organisations cardinally differed from modern ones, as their activity and idea were based on ancient traditions, philanthropy and equal assistance to be provided to the whole society. The term philanthropy historically existed in many cultures with the purpose of providing assistance to a large part of society and not only to the closest family members. Initially such organisations took the forms of religious organisations, social groups or organised self-assistance associations in villages and towns that aimed to make improvements in education, healthcare, women's rights and agriculture [1.]. Such associations influenced government decisions weakly. Local organisations of this type historically existed long ago, and they had insignificant influence on the history of NGOs. In the modern understanding, the history of well-known NGOs began in Western countries in the 18th century when small national organisations, increasing their influence, became popular at international level, acquiring the name *international non-governmental organisations* [5.; 7.; 10.] The history of NGOs into seven periods with the first one lasting from 1775 to 1918. The first Western world NGOs dealt with human rights, for example, they worked on the abolishment of slave trade and the free movement of individuals. The history of pre-modern well-known NGOs may be analysed starting with around the year 1900 when the most urgent problems related to employment rights and free trade. The first well-known organisation in the USA was the International Tobacco Workers' Federation (1876) and the Anti-corn Law League (1838) in Great Britain, which supported free trade [5.]. Possibly the first international NGO was the Anti-Slavery Society (1839), which fought for human rights [8.]. Beginning with the 20th century, NGOs made a record of a new period in their history, focusing mainly on their recognition and the popularisation of their objectives to be achieved both at national and at international level. For example, 132 international organisations participated in the World Congress of International Associations in 1910, stressing their key objectives: infrastructure development, intellectual property rights, drug control, public health issues, agricultural development and environmental protection. The World Disarmament Conference (1932) as the next most important conference that was held with the assistance of member countries of the League of Nations. There were only six international NGOs in 1854, while a century later their number rose to more than a thousand [7.]. The role on NGOs rose, before World War II in particular, when the League of Nations (1920) established based on the Treaty of Versailles became the leading NGO; its key objectives in the global context were to ensure peace and to resolve conflicts through diplomacy as well as to improve the living conditions. In the

post-war period, the second most important organisation was the Save the Children Fund (SCF) founded in 1919; it aimed to provide assistance to those with war traumas as well as to help improve the life of children through tackling issues related to education, healthcare etc. As political tension increased in Europe after 1935, NGOs started gradually loosing their influence, and the political tension resulted in World War II. Before the war, for example, the League of Nations completely lost its role in regulating international relations. Undoubtedly, NGOs are a phenomenon of the 20th century, and they acquired their name, in the direct sense, during World War II. The most important organisations during this period were Oxfam (1942) (initially the Oxford Committee), the mission of which was to find solutions to poverty and to provide assistance to victims of the Greek Civil War and the Cooperative for Assistance and Relief Everywhere (CARE) established in 1945, which began its activity by sending food packs from the USA to Europe in 1946 after World War II [10.].

The acronym NGO acquired an official status and role after the United Nations Organisation was founded in 1945. The UNO was the successor of the League of Nations in keeping peace in the world after World War II. Article 71 of Chapter X of the UNO Statute stipulates that the Economic and Social Council (ECOSOC) of the UNO may consult with nongovernmental organisations that deal with the issues being the responsibility of the UNO. The continuation of Article 71 specifies that such organisations have to be international and independent from governments, and in exceptional cases the Council may consult with national-level organisations. However, the definition of international nongovernmental organisation was included in UNO documents on 27 February 1950, based on Decision 288(X) that stipulated the cooperation of ECOSOC and the UNO with reference to Article 71 of Chapter X of the UNO Statute. In 1968, the Decision of 1950 was supplemented with a procedure how to carry out the cooperation of ECOSOC and the UNO, in which ECOSOC acknowledges the essential role of NGOs in sustainable development [13.].

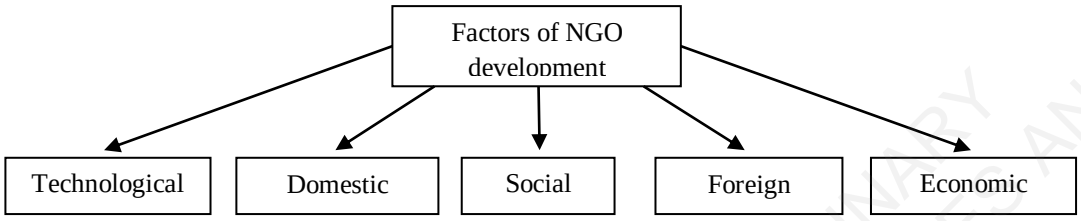
Development of NGOs in the context of globalisation from the middle of the 20th century

The establishment of the UNO and Article 71 of the UNO Statute concerning the cooperation of ECOSOC and the UNO represent a new page in the modern history of NGOs. Lewis and Kanji (2009) classify organisations by development level into three categories:

- least developed NGOs, which formed based on external resources and ideas;
- developing NGOs, which emerged based on existed associations and interest groups;
- multiform informal public organisations, which have existed before.

Not only the role of organisations as a consultative partner but also overall progress in the world and globalisation on the whole contributed to their development. Initially, the highest activity of NGOs was observed in Western world countries after the countries restructured and turned into high-standard-of-living countries. The effect of globalisation and the collapse of communism are mentioned as the next period in the history with regard to the assessment of activity of NGOs that was fostered by the

Washington Consensus, which represented a package of reforms prescribed for crisis-wrecked least developed countries, in cooperation with the International Monetary Fund (IMF), the World Bank and the US Treasury [15.]. As seen in Figure 1, the key NGO development factors being specific for the end of the 20th century [7.].



Source: authors' construction based on Davies (2007), 2016

Fig. 1. Key factors that contributed to the development of NGOs in the 20th century

Technological progress is one of the most frequently mentioned factors that contributed to organisational development and international cooperation. The first technologies in the 19th century involved steam-powered ships as the fastest means of transport between continents and a telegraph for transmitting messages. However, in the 20th century technological progress represented international telecommunications, while the post-Cold War era, which is characterised in history by the collapse of the Soviet Union in 1991, featured progressive technologies in telecommunications such as cellular phones and the Internet as well as cheaper travel by air.

As regards economic factors, the development of NGOs is influenced by economic activity cycles, while on a global scale it is affected by the emergence of international corporations. In general, economic factors are strongly associated with political factors. Social factors involve demographic changes, the migration of individuals and urbanisation.

In the 20th century, globalisation contributed to the growth of NGOs, tackling complicated problems much faster. Owing to political factors, changes took place in the political system of countries, for example, democratisation; international conflicts are resolved and common policies are made together with neighbouring countries, for example, the Common Agricultural Policy. Telecommunications considerably contributed to NGO cooperation across borders; simultaneously, various international agreements were made among countries and international financial organisations were established, for example, the World Trade Organisation and the IMF. If, for example, the WTO and the IMF mainly worked on capital increase, a great deal of NGOs, in contrast, focused on population wellbeing, assistance for growth and sustainable development, environmental protection etc. [12.].

After the active engagement of European NGOs in the decolonization of Africa in 1960, tackling poverty causes instead of poverty consequences, and their involvement as mediators in informal diplomacy in 1970 and 1980 to resolve war conflicts in Vietnam, Angola and Palestine, in 1980 the World Bank admitted that NGOs were a much more effective and less corrupted partner than government institutions [3.].

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION "INTERDISCIPLINARY SCIENCES AND ARTS" 2016

However, in his research, Charnovitz S. gives four reasons that contributed to the development and role of organisations in making political decisions:

- the growth of intergovernmental negotiation around domestic policy brought about by increasing integration of the world economy;
- the end of the Cold War, which removed the polarization of global politics around the two superpowers;
- the emergence of a global media system which provides a platform for NGOs to express their views;
- the spread of democratic norms which may have increased public expectations about participation and transparency in decision-making [5.].

A dramatic increase in the number of NGOs was observed in the 1980-90s, and it is not possible to precisely estimate the total number of NGOs in the world, as no credible and comprehensive statistics are available [10.]. If discussing international NGOs historically, the number of national and local organisations of various forms rose in the beginning of the 21st century, seeing the increasing role and influence of NGOs. The authors suppose that in the 21st century, local and national NGOs are as important as international organisations, as they make significant contributions in their own countries and are members of international organisations. As the number of organisations rose, they started structuring by kind of activity, and at present the acronym NGO only points to the kind of organisation and does not explain the organisation's functions or kind of activity. For example, the number of organisations in the USA reached 1.5 million, 277 thousand in Russia, 2 million in India and more than 15 thousand in Latvia.

NGOs in the 21st century

Historically, in various bibliographical sources organisations have been viewed as international NGOs and defined as high-level advocates in the arena of international relations that defend the interests of less-protected individuals and communities [9.]. However, nowadays, NGOs have become important political players also at local and national levels and are defined as a voluntary organisation (association, foundation, trade union or political party) founded by interested individuals who attract funds and provide the achievement of the organisation's objectives for non-commercial purposes [6.]. The acronym NGO is widely used in the world, and with the number and diversity of organisations increasing, the acronym is replaced with new terms/acronyms that precisely classify and characterise organisations by kind of activity and by region. Totally are classified 47 various NGO acronyms. The most popular ones in the world are as follows [10.]:

- *non-profit organisation (NPOs)* – a frequently used acronym in the USA, where the market is dominant, and where citizen organisations are rewarded with fiscal benefits if they show that they are not commercial, profit-making entities and work for the public good [10];
- *voluntary (VOs) or charity organisation* – the most frequently used acronym in the United Kingdom due to its ancient voluntary work traditions that remind Christian values and the law on charity. To gain the status of charity organisation, the organisation has to be politically independent [10];

- *civil society (CSOs)* – an organisation being free from any government influence, but it cooperates with the government to reduce disparities in purchasing power among social strata and serves as a mediator between the state and the market to protect the population's rights.

Globally other acronyms are also used, and their number is much greater than the above-mentioned ones. Institutions functioning in the world may be classified into three groups:

- Sector I: government institutions;
- Sector II: business and profit-making institutions;
- Sector III: organisations that do not belong to the first two sectors; "third sector" organisations [9.].

The purpose of the term third sector being often referred to in the literature is to replace the list of diverse NGO acronyms with one universal designation. In such a sense, the "third sector" is a group of organisations and a social space between the government and public interests. However the usefulness of the definition of "third sector", as the diverse acronyms have historically emerged based on ancient traditions and culture, and many organisations existing in the world may not be equally measured and classified [11.].

CONCLUSION

1. Groups of activists having the same interests and being independent from the government have existed for centuries with the aim of defending public interests concerning wellbeing issues. Seeing that with joint efforts the public are able to achieve their desired results, in the 19th century such social groups started being called nongovernmental organisations or organisations free from government influence.
2. Initially, the purpose of NGOs was mainly associated with the public's wellbeing and free movement issues. As the influence of organisations on making political decisions gradually increased, they were established in other areas, tackling problems related to education, healthcare, the environment, research, agriculture, conflict resolution etc.
3. Officially, the acronym NGO became widely used when the UNO Statute declared NGOs as a consultative partner of ECOSOC. It was a new period in the history of organisations, which were able to show themselves as being a trustful partner in defending the public's interests before.
4. With technologies (cheap travel by air, communications, mass media etc.) developing fast in the 1990s, an essential increase in the number of organisations and the development of international cooperation were observed in the world. Owing to the great number of organisations in various spheres, the acronym NGO has been modified into more than 47 kinds, which allows precisely classifying organisations by purpose and objective.
5.

REFERENCES

[1.] Anheier, H.K. Nonprofit Organizations: Theory, Management, Policy, United Kingdom, 2005.

[2.] Bell, D. How can Political Liberals be Environmentalists? Political Studies, vol. 50/issue 4, United Kingdom, 2002, pp. 703-724.
[3.] Berthoud, O. NGOs: Somewhere Between Compassion, Profitability and Solidarity. Retrieved: http://www.envio.org.ni/articulo/1526. Accessed: March 4, 2016.
[4.] Carroll, T. F. *Intermediary NGOs: The Supporting Link in Grassroots Development*. United Kingdom, 1992.
[5.] Charnovitz, S. Two Centuries of Participation: NGOs and International Governance. Michigan Journal of International Law 18, U.S., 1997, pp. 183–286.
[6.] Civic Alliance – Latvia. The Review of the NGO Sector in Latvia 2013. Retrieved: http://www.sif.gov.lv/nodevumi/nodevumi/5985/Petijums_NVO_2013_EN.pdf. Accessed: February 17, 2016.
[7.] Davies, T. R. *The Possibilities of Transnational Activism: the Campaign for Disarmament between the Two World Wars.* United Kingdom, 2007.
[8.] Hall-Jones, P. (2006). The Rise and Rise of NGOs. Retrieved: https://www.globalpolicy.org/component/content/article/176/31937.html. Accessed: February 28, 2016.
[9.] Lewis, D. & Kanji, N. (2009). Non-Governmental Organizations and Development. United Kingdom, 2009.
[10.] Lewis, D. Non-governmental Organizations Management and Development, United Kingdom, 2014.
[11.] Salamon, L., & Anheier, H. In Search of the Non-profit Sector: The Question of Definitions. Voluntas: International Journal of Voluntary and Nonprofit Organizations, U.S., vol. 3/issue 2, pp. 125-151, 1992.
[12.] Stone, D. *Transfer Agents and Global Networks in the 'Transnationalization' of Policy*. Journal of European Public Policy, United Kingdom, vol.11 (No.3). pp. 545-566, 2004.
[13.] United Nations. Economic and Social Council. Retrieved: http://www.un-documents.net/1296.htm. Accessed: March 5, 2016.
[14.] Young, S.T. & Dhanda, K.K. Sustainability Essentials for Business, Unites States of America, 2013.
[15.] Zaleski, P. Global Non-governmental Administrative System: Geosociology of the Third Sector, Poland, IFIS Publishers, 2006.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS

IMPACT OF INTERNATIONAL ECONOMIC AGREEMENTS ON THE DEVELOPMENT OF INTERNATIONAL TRADE FOR REGION

Prof. Dr. Elena L. Andreeva[1,2]

Prof. Dr. Aleksandr F. Linetsky[1,2]

Cand. Artem V. Ratner[1]

Aleksandr I. Tarasov[3]

Darya E. Kuznetsova[1,4]

[1] Institute of Economics of the Ural branch of the Russian academy of sciences, **Russia**
[2] Urals state university of economics, **Russia**
[3] Administration of Ministry for industry and trade of Russian Federation in Ural district, **Russia**
[4] Ministry of international and foreign economic relations of Sverdlovsk region, **Russia**

ABSTRACT

The article substantiates the impact of the international economic agreements on the development of regional international trade. The object of the study is regional foreign trade, the subject is the role of international agreements and negotiations in its development. The study purpose is to develop a scientific approach to assessment of impact of international agreements on the development of the region's foreign economic relations. The hypothesis substantiates the dependence of successful development of foreign trade on intensity of international agreements. The methodology is proven on example of Sverdlovsk Region and its contacts with basic trade partners. The main research method includes finding a correlation between intensity of international agreements with the volume and structure of foreign trade. The results of the study are important for all agents of foreign trade activities: firms, authorities, structures supporting the foreign economic activity. Taking into account the foreign trade factor allows increasing the efficiency of foreign economic contacts and helps achieving the higher results by entering the foreign markets. A more active involvement of the factor of international contacts furthers increasing of the foreign trade turnover, and export, and also diversification their structure, what allows to solve the most important problems of region in terms of globalization.

Keywords: international economic agreements, foreign trade, regional development, efficient foreign economic contacts, foreign trade structure

INTRODUCTION

For the purposes of discussion, foreign economic activitiy (FEA) of a country and a region can be divided into a process component, i.e., processes of international movement of goods and production factors (IMOG&PF) as such, and an institutional component, i.e., institutions supporting these processes. The IMOG&PF includes movements between national economies of goods (in the broad sense of the word, i.e., including material goods and services), i.e., foreign trade, and production factors – capital (foreign investments), work force (external labor migration) and technology (international technology trade).

Economic institutes and their role by global economic positioning and relations are investigated by many both native ([3], [5], [11], [12], [13]) and foreign ([2], [6]) researchers. They issue the institutions of international economic integration, institutional framework of such kinds of international interaction, as trade and technological. Much attention is paid to its infrastructure.

Institutionalization of a region's IMOG&PF will be manifested by:

– conclusion of agreements and arrangement of events (on the level of regional authorities);

– establishment of institutions responsible for the IMOG&PF and promoting its intensification on the regional level;

– application of new network techniques of trade, economic, scientific and technological cooperation, such as interactive network collaboration, research and innovation network platforms and network universities, etc.

IMPACT ASSESSMENT METHOD OF THE INSTITUTIONAL FACTOR ON THE DEVELOPMENT OF A REGION'S FOREIGN ECONOMIC RELATIONS

The increasing importance of the institutional factor of the FEA development on the level of individual regions requires to develop certain methodological support for assessment of its impact on the development of a region's FER. Economic analysis is relevant as the means helping to forecast crisis events and respond to them [7].

The suggested impact assessment methodology consists of 4 stages [1]:

First stage – impact assessment of international contact intensity as compared with the dynamics of volumes of export and import operations

– includes:

а) impact assessment *of the total number of receptions* and concluded agreements on the region's foreign trade turnover;

б) impact assessment *of the total* number of visits and concluded agreements on the region's foreign trade turnover.

Correlation relationship analysis between the indicators assumes a calculation of correlation coefficients between these indicators and identification of mutual relations.

Second stage – change analysis of the geographical structure of foreign trade (countries that are the region's primary trade partners), includes foreign trade analysis based on FT turnover, FT balance as well as separate analysis of export and import operations.

Third stage – impact assessment of the institutional factor on the development of foreign economic relations with a certain selected partner; it assumes an in-depth analysis of foreign trade (volume, dynamics and structure) over a certain period of time.

Table 1. Intensity of international contacts as compared to the dynamics of volumes of export and import operations of Sverdlovsk Region during 2003-2015

Reception of official foreign delegations in Sverdlovsk Region								
	2003	**2005**	**2007**	**2009**	**2010**	**2011**	**2013**	**2014**
Total number of receptions	**48**	**49**	**33**	**92**	**53**	**39**	**85**	**75**
1. Reception in Sverdlovsk Region of Ambassadors Extraordinary and Plenipotentiary of foreign countries to the Russian Federation	8	12	11	25	21	18	22	22
2. Reception in Sverdlovsk Region of foreign government delegations	4	9	5	37	11	8	18	23
3. Reception in Sverdlovsk Region of any other official foreign delegations	36	28	17	30	21	13	45	22
Visits abroad of delegations of Sverdlovsk Region								
Total number of visits	**20**	**24**	**30**	**19**	**22**	**40**	**28**	**18**
1. Visits abroad of delegations of Sverdlovsk Region headed by the Governor of Sverdlovsk Region	5	5	7	6	11	10	4	5
2. Other visits abroad of officials and delegations of Sverdlovsk Region	16	19	23	13	11	30	24	13
Total number of receptions and visits	**68**	**73**	**63**	**111**	**75**	**79**	**113**	**93**
Foreign trade volume, USD billion								
Foreign trade turnover	**4.3**	**7.4**	**12.1**	**9.9**	**12.3**	**12.2**	**11.1**	**11.8**
Export	**3.3**	**5.9**	**9.3**	**7.3**	**8.9**	**8.5**	**7.8**	**8.2**
Import	**1.0**	**1.5**	**2.8**	**2.6**	**3.4**	**3.7**	**3.3**	**3.6**

Prepared on the basis of the official web-site of Ministry of international and foreign economic relations of Sverdlovsk region. URL: www.mvs.midural.ru (access: 30.11.2015).

The fourth stage of the assessment identifies possibilities and risks as well as strong and weak points of the region in the frame of impact of the institutional factor on the region's foreign economic development. This would afterwards allow suggesting certain recommendations for development of the region's involvement in the FEA and a package of measures for implementation of these strategies. Techniques of economic statistics assessment for regional research were developed by many researchers, but their considered mostly internal economic activity.

IMPACT ASSESSMENT OF THE INSTITUTIONAL FACTOR ON THE DEVELOPMENT OF FOREIGN ECONOMIC RELATIONS OF SVERDLOVSK REGION

This methodology and the proprietary approach have been proven on the example of Sverdlovsk Region.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

Intensity of international contacts of Sverdlovsk region with foreign partners grows every year, which is expressed by the increasing number of visits of delegations of Sverdlovsk region abroad and the number of receptions of foreign delegations in the territory of the region. (The role of diplomatic contacts is highlighted by many foreign researchers ([8], [9], [10]).) At the same time, volumes of export and import operations of foreign economic activities agents in the Mid-Urals are increasing. Table 1 shows the intensity of international contacts as compared to the dynamics of volumes of export and import operations of Sverdlovsk Region during 2003-2015.

Thus, the middle extent of correlation relationship of export, import and foreign trade turnover indexes on the total number of visits of delegations of the region is revealed. By other indexes the dependency is weak (table 2).

The table 1 shows that, in November, 2015 50 ambassadors of the foreign states in the Russian Federation visited Sverdlovsk region. This factor has taken the 1st place for the last 13 years. This high rate has been reached thanks to opening of the Presidential center of the first President of Russia B. N. Yeltsin on the 25th of November, 2015. The invited Ambassadors Extraordinary and Plenipotentiary of the USA, Kyrgyzstan, Indonesia, Argentina, Kazakhstan and others arrived to visit it.

Correlation relationship analysis between intensity data of international contacts and foreign economic development of Sverdlovsk Region is shown in Table 2.

Table 2. Correlation relationship between intensity of international contacts and foreign economic development of Sverdlovsk Region

Data of the region's foreign economic development	Intensity data of international contacts		
	Total number of receptions	Total number of visits	Total number of receptions and visits
FTT	0.02	0.55[1]	0.38
Export	0.07	0.55[2]	0.31
Import	0.28	0.51[3]	0.50
FT Balance	0.13	0.49	0.09

Source: calculated on the basis of table 1.

Note. Correlation relationship reflecting the highlighted correlation coefficients are expressed by means of the following equations:
[1]*Y = 0.181x + 5.458 ,*
[2]*Y = 0.121x + 4.331,*
[3]*Y = 0.059x + 1.127.*

The number of receptions of foreign official delegations in Sverdlovsk region is also the factor, which has taken the first place for the last 13 years. Foreign delegations arrived to Yekaterinburg to take part in the industrial exhibition «Innoprom» which for the first time was held in common with China, to take part in VII Russian-German Forum of energy efficiency, in the VI Russian-Azerbaijani Forum and other events. The part of delegations purposefully visited Sverdlovsk region to build or continue collaboration with Sverdlovsk region.

The total of receptions of official foreign delegations in Sverdlovsk region has reached the peak for the last 13 years.

The table 1 demonstrates that annually the total of receptions of foreign delegations many times exceeds the number of visits of delegations of Sverdlovsk region abroad. It means that Sverdlovsk region is interested to foreign partners. The total of the international contacts has grown steadily during the whole period except crisis 2010 and 2014 years.

According to the table 1 during the whole period the growth of the foreign trade turnover of Sverdlovsk region was stable. At the same time, if the number of the international contacts in 2014 in comparison with 2003 has increased approximately by 1.4, then the volume of the foreign trade turnover for this period has grown by 2.7.

There were no considerable changes in the structure of foreign trade of Sverdlovsk region. The basis of export of Sverdlovsk region in foreign trade in 2014 was traditionally made by metals and products of them, production of chemical industry, and also machine-building production, metals and products of them. Machine-building and chemical productions were imported to Sverdlovsk region in the same period.

Among the countries – trade partners it seems to be interesting to consider such ex-republic of the USSR as Azerbaijan. It's remarkable, that it's position has moved upwards to the 5th place.

The given analysis of dynamics of indicators of foreign economic activity in comparison to intensity of the international and external economic contacts (table 1) confirms the thesis forward-based by authors about dependence of these indicators.

At the same time it is seen that the foreign trade turnover of the region increases depending on the official international contacts. Also it should be noted that the effect of this or that international contact occurs only after a certain period of time. During this period of time the complex of all necessary external economic actions is carried out: negotiations are held, contracts are concluded and their realization begins. And in this situation participants of foreign trade activities should use rules of international protocol and etiquette for successful development of foreign economic activity.

As one of examples of efficiency of the international contacts it should be given the visit of the delegation of Sverdlovsk region to the Republic of Azerbaijan from March 12 to March 14, 2014. The delegation was headed by Governor of Sverdlovsk region E.V. Kuyvashev. There were 41 persons in the delegation. They were vice-chairmen and members of the government of Sverdlovsk region, rectors of higher educational institutions and heads of the enterprises of Sverdlovsk region.

The purpose for the visit was the discussion of a condition of cooperation between Sverdlovsk region of the Russian Federation and the Republic of Azerbaijan and the perspective directions of development of interregional cooperation.

SCIENTIFIC-PRACTICAL ELECTRONIC JOURNAL OF SOCIAL SCIENCES AND ARTS

The efficiency of the visit of the delegation of Sverdlovsk region to the Republic of Azerbaijan can also be emphasized with the essential growth of a position of Azerbaijan as trade partner of the Ural region. The main indicators of foreign trade of Sverdlovsk region and Azerbaijan in 2010-2014 are given in table 3.

Table 3. Indicators of foreign trade of Sverdlovsk region with the Republic of Azerbaijan in 2010-2014

Year	Turnover, thousand dollars of the USA	Position	Percent	Export, thousand dollars of the USA	Import, thousand dollars of the USA	Balance, thousand dollars of the USA
2010	95 601,90	24	0,79	94 889,17	712,73	94 176,44
2011	130 690,58	19	1,10	128 534,49	2156,09	126 378,40
2012	126 280,49	20	1,01	123 999,73	2280,76	121 718,97
2013	273 844,77	11	2,60	272 746,88	1097,89	271 648,99
2014	643 086,70	5	5,78	641 023,21	2063,49	638 959,72

Prepared to the data of the Ural customs office.

The table 3 shows that in 2014 the foreign trade turnover of Sverdlovsk region with Azerbaijan in comparison with 2013 has grown by 2.4, at the same time export has grown by 2.4, import – by 1.9.

From 2010 to 2014 the Republic of Azerbaijan moved from the 11th to the 5th place according to import-export volume among the partner countries of Sverdlovsk region.

Azerbaijan steadily buys the forest products, production of metallurgy (rods, corners and profiles, pipes). Recently it has begun to buy engines and electric generators, isolated wires, parts and accessories of motor vehicles (table 4).

Table 4. The share of Azerbaijan in structure of export of the chosen goods of Sverdlovsk region, %, 2009-2014

	2009	2011	2012	2013	2014
Forest products	45,7	45,9	48,2	55,9	49,9
Iron or steel rods	0,1	0	0	9,7	14,1
Pipes, tubes and hollow profiles from ferrous metals (except an iron casting)	4,7	4,0	7,1	11,3	7,7
Engines and electric generators	0,2	0	2,2	0,4	39,7
Isolated wires	0	0,5	2,6	1,2	33,9
Parts and accessories of motor vehicles	0,3	32,4	36,2	30,4	30,1

Calculated on the basis of [4].

The changes of export of machine-technical production of Sverdlovsk region to Azerbaijan are shown in table 5.

Table 5. The changes of export of machine-technical production of Sverdlovsk region to Azerbaijan

	2009	2011	2012	2013	2014
Engines and electric generators, items	2	0	29	2	135
Isolated wires, tons	0	1	6	6	38
Parts and accessories of motor vehicles, tons	1	110	124	98	86

Calculated on the basis of [4].

In general as a result of the visit the large industrial projects have been started. They are the building of the production of upsetting pipes plant for needs of the Azerbaijani oil industry (the participants of the project are JSC Pipe Metallurgical Co., the limited company «The Azerbaijani complex of steel production»).

Favorable conditions for negotiation process between JSC Uralvagonzavod (Ural railway car factory) and the limited company «The Azerbaijani railways» concerning export of production of the Ural enterprise are created. As a result of this agreement the contract for delivery of 2.9 thousand modern cars by JSC Uralvagonzavod to the Republic of Azerbaijan has been signed in March, 2015.

CONCLUSION

In conclusion it is possible to stress that the thesis which is put forward by authors that the use of the institutional factor such as the international rules of the protocol and etiquette, promotes strengthening of foreign economic relations and is the most important condition of their all-round development and the solution of the major social and economic tasks in development of the region. The building mutually beneficial cooperation development with foreign partners can change dramatically streams of the knowledge-intensive and hi-tech goods and services, the capital and technologies. Sverdlovsk region in particular and Russia in general have the opportunity to become a source of goods and services of high extent of processing and investment of the capital. Thus, the purposeful accounting of the institutional factor for the benefit of social and economic development of the region will allow getting additional benefits of both quantitative and qualitative character from active use of the potential of economic cooperation. And active involvement of this potential of economic cooperation in development of the international and foreign economic relations of the region promotes the growth of level of social and economic development of certain regions of the country and national economy in general and can serve as a contribution to significant improvement of the major qualities of development of economy of the region, and also other member countries.

REFERENCES

[1] Andreyeva Ye.L., Zakharova V.V., Ratner, A.V. Influence of international economic integration on socio-economic development of region / Economy of region, Russia, issue 3 (39) / pp. 90-100, 2014.

[2] Duina F., Buxbaum J. Regional trade agreements and the pursuit of state interests: Institutional perspectives from NAFTA and MERCOSUR / Economy and society, United Kingdom, vol. 37, issue 2, pp. 193-223, 2008.

[3] Fityni L.L., Abramova I.O. Regularities of forming and change of models of world economic development / World economy and international economic relations, Russia, issue 7, pp. 3-15, 2012.

[4] Foreign trade of Sverdlovsk region for 2009-2014: statistical bulletins. / Territorial authority of Federal state statistics service in Sverdlovsk region, Russia. Yekaterinburg, 2010-2015.

[5] Kapustina L.M., Drevalev A.A. Development of Russian copper industry under the conditions of the World trade organization membership / Economy of region, Russia, Issue 2 (38) / pp. 104-115, 2014.

[6] Kucik J. The domestic politics of institutional design: producer preferences over trade agreement rules / Economics and politics, United Kingdom, vol. 24, issue 2 / pp. 95-118, 2012.

[7] Kuklin A.A., Bystray G.P., Okhotnikov S.A., Vasilyeva E.V. Economic tomography: opportunity to foresee and respond to socio-economic crises / Economy of region, Russia, issue 4 (44) / pp. 40-53, 2015. (doi: 10.17059/2015-4-4)

[8] Lyadov P.F. International cooperation and diplomatic protocol / Finance. Right. Management : Legal information and analytical magazine [Electronic resource]. URL: www.flm.su/? actions=main_content&id=864 (access: 13.11.2015).

[9] McCaffree M.J., Innis P., Sand R.M. Protocol: The complete handbook of diplomatic, official and social usage, 25th anniversary edition paperback, South Africa. Durban House Press / 475 p., 2002.

[10] Mnooking R. Bargaining with the devil. When to negotiate, when to fight / Simon&Schuster, USA / 320 p., 2010.

[11] Obolenskiy V.P. Protectionism and freedom of trade in modern world / World economy and international economic relations, Russia, issue 12 / pp. 14-23, 2013.

[12] Shishkov Y.V. Crisis of EU-zone: conclusion for architects of Eurasian Economic Community / World economy and international economic relations, Russia, issue 6 / pp. 13-22, 2012.

[13] Spartak A. Contemporary regionalism / World economy and international economic relations, Russia, issue 1 / pp. 3-15, 2011.

SCIENTIFIC CONFERENCE SGEM 2016 INTERNATIONAL MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS

IMPACT OF MARKET STRUCTURE ON PERFORMANCE IN CENTRAL AND EASTERN EUROPEAN BANKING SYSTEM

Assoc. Prof. Dr. Claudia Dobre

"Ovidius" Univeristy of Constanta, **Romania**

ABSTRACT

The main goal of this research is to apply the S-C-P hypothesis to examine whether market concentration has an impact on banking performance. Our empirical approach integrates a panel data analysis regarding indicators of banking sector concentration (CR3) and of banking performance (ROE) from 19 countries in Central and Eastern Europe during 2001-2010. In order to capture the evolution of market concentration and performance, we used data provided by BSCEE.

We found that there is a strong and direct link between the indicator of the degree of banking market concentration - concentration ratio (CR3) and performance indicator - the rate of return on equity (ROE) for eight countries (Albania, Belarus, Estonia, Latvia, Montenegro, Romania, Slovenia and Ukraine). A direct but weak link between the two indicators CR3 and ROE we find in banking markets such as Bulgaria, the Czech Republic and Poland. On the the other hand, the values of the Pearson correlation coefficient show there is a strong inverse relation for four countries (Bosnia and Herzegovina, Hungary, Russia and Slovakia). A reverse but weak link we have seen in banking markets such as Croatia, Lithuania, Macedonia and Moldova.

Keyword: Concentration, Bank, Competition, the SCP Paradigm, Central and Eastern Europe

INTRODUCTION

From a social viewpoint, bank concentration creates an environment that can reduce social welfare. This is an issue that has important public policy implications. If the market structure in a given country is found to be highly concentrated (thus increasing the likelihood of collusion), public policy should focus on measures of increasing competition, such as discouraging mergers and acquisitions. On the other hand, if bank concentration is positively correlated with the stability of the banking system, policies should be directed at facilitating mergers or consolidations. Previous studies provide mixed evidence.

The present analysis is based on panel data collected from Banking Supervisors from Central and Eastern Europe (BSCEE) for the Central and Eastern European (CEE) banking system between 2001 and 2010. The main goal of this research is to apply the Structure-Conduct-Performance hypothesis from the Industrial Organization literature to examine whether market concentration has an impact on banking performance. It should be said from the beginning that we do not take explicit account of the conduct of banks and the analysis undertaken focuses on the structure-performance (S-P) relationship. Our empirical approach integrates a panel data analysis regarding

indicators of banking sector concentration (CR3) and of banking performance (ROE) from 19 countries during 2001-2010 and calculation of Pearson`s correlation coefficient between structure and performance indicators for the mentioned period.

This approach also provides a second goal to the research: to examine policy related issues. As a matter of public policy, the measurement of market concentration is important and lies at the heart of decisions about whether to approve mergers and acquisitions that might pose a potentially harmful impact on consumers in terms of both prices and the availability of goods and services. This study contributes to the literature both by extending the analysis of the relationship between bank competition, concentration and performance in the CEE banking sector up to 2010 and by testing the S-P paradigm application on the relationship between concentration and performance.

LITERATURE REVIEW

The SCP paradigm has been one of the most tested hypotheses in the industrial organizations literature. Almost all of the SCP empirical studies have supported the validity of the SCP paradigm, by providing evidence on the positive relationship between market structure and firm performance indicators. It was not until the `50 when the fundamental validity of the SCP model was applied in the banking industry (the initial study on concentration in the banking sector was done by Alhadeff in 1954).

Only since around 1960 have we seen a growing body of empirical work dealing with market structure and its impact on bank performances. Further on, a number of studies Berger and Hannan [1] ; Neumark and Sharpe [2]; Tregenna [3] support the SCP framework, that find positive relationships between market structure and bank performance measures. This foundation has been supported by over 20 empirical works.

Results from various European banking studies tend to find some evidence that the traditional SCP hypothesis holds. The study conducted by C. Ferreira [4] confirmed that relationship between bank market concentration and bank cost efficiency is rather complex and overall results of the study are in line with SCP paradigm as a clearly negative causality running from concentration to efficiency was detected. The results of study suggest that within the panel of 27 EU countries over a relatively long time period, the more cost-efficient commercial and savings banks operated in less concentrated markets.

A number of other empirical studies, on the other hand, cast doubt on the SCP findings. Nguyen [5] suggests that concentration plays an unimportant role in bank profitability. This result does not support the SCP hypothesis, which implies a positive relationship between concentration and profit.

Many other works have found insignificant relationships between the measures of market structure and of bank performance. This achievement has been advocated by over 15 empirical works, such as Smirlock [6].

The contradictions in the SCP relationships found in the literature are generally contributed to the methodology and data, as well as the assumptions relat to measures of market structure. Moreover, interpreting higher profits in concentrated markets as evidence of market power is also problematic, as market concentration may not

necessarily be a reflection of collusive behavior of banks, but rather a consequence of their superior efficiency Sahoo and Mishra [7].

DATA BASE AND METHODOLOGY

Our empirical approach integrates a panel data analysis regarding indicators of banking sector concentration (CR3) and of banking performance (ROE) from 19 countries in Central and Eastern Europe during 2001-2010. In order to capture the evolution of market concentration and performance, we used data provided by the Group of Banking Supervisors from Central and Eastern Europe (BSCEE) [8]. Using the data obtained, we plotted the evolution of CR3 and ROE, analyzing the correlation between these indicators and further calculating the Pearson correlation coefficient.

In order to capture the impact of banking sector's concentration on its profitability in Central and Eastern Europe, an appropriate set of variables has to be selected.

Indicator of Market Structure

Concentration Ratio (CR3): Three-Bank concentration ratio equals to the sum of the assets or deposits of the largest three banks in a given market, divided by the total assets of that market, as in equation:

CR3 = The Largest Three Banks' Assets / Market's Assets (1)

We chose this indicator because the concentration in banking sector is frequently measured by the n-firm concentration ratio - the combined market share held by the largest: three largest, five largest, etc. banks in the market. As there are no preset rules for an appropriate value of n, the total number included in the analysis is usually an arbitrary decision, depending from the goal of the research and the size of the analyzed market.

In addition, the three-bank concentration ratio has been the most extensively employed in studies. It has the advantage of focus on the importance of "fewness", which is a characteristic feature of certain market structures. Rose states: "the degree of concentration in a market is measured by the proportion of assets or deposits controlled by the largest banks serving that market" [9].

Performance Indicator

Bank performance may be measured either by Returns on Assets (ROA), *Return on Equity (ROE)*, interest rate charged on loans or interest rate paid on deposits.

As an indicator of profitability, ROE is determined by dividing net income for the past 12 months by common stockholder equity (adjusted for stock splits). The result is shown as a percentage. Investors use ROE as a measure of how a company is using its money. ROE is an internal performance measure of shareholder value and it is by far the most popular measure of performance [10].

The Correlation Coefficient (*Pearson's r)*

It measures the linear relationship between two interval/ratio level variables. Pearson`s *r* coefficient of correlation can have a value anywhere between -1 and 1. The larger the coefficient, ignoring its sign, the stronger the association between the two variables. At its extreme, a correlation of 1 or -1 means that the two variables are perfectly correlated,

meaning that you can predict the values of one variable from the values of the other variable with perfect accuracy. At the other extreme, zero implies an absence of a correlation - there is no relationship between the two variables. This implies that knowledge of one variable gives you absolutely no information about what the value of the other variable is likely to be. The sign of the correlation implies the "direction" of the association. A positive correlation means that relatively high scores on one variable are paired with relatively high scores on the other variable, and low scores are paired with relatively low scores. On the other hand, a negative correlation means that relatively high scores on one variable are paired with relatively low scores on the other variable. The Pearson correlation cannot determine a cause-and-effect relationship. It can only establish the strength of the association between two variables.

DESCRIPTION OF EMPIRICAL RESULTS

In order to test Structure - Conduct - Performance hypotheses over 19 banking markets in Central and Eastern European countries we calculated the Pearson coefficient using the intensity of the relationship between the following variables: market concentration indicator - concentration ratio (CR3) and performance indicator - return on equity (ROE), during 2001-2010. We used data provided by BSCEE [8]. Values recorded in the 19 countries of Central and Eastern Europe on the correlation between concentration rate and return on equity rate can be synthesized into a single table:

Table 1: Intensity of the Relationship between the Degree of Market Concentration (CR3) and Performance (ROE) in the Countries of Central and Eastern Europe (2001-2010)

	Banking Market	*Pearson Coefficient*
1.	Albania	+ 0,579
2.	Belarus	+ 0,854
3.	Bosnia Herzegovina	- 0,527
4.	Bulgaria	+ 0,130
5.	Croatia	- 0,382
6.	Czech	+ 0,249
7.	Estonia	+ 0,520
8.	Hungary	- 0,964
9.	Latvia	+ 0,479
10	Lithuania	- 0,212
11.	Macedonia	- 0,188
12.	Moldova	- 0,038
13.	Montenegro	+ 0,741
14.	Poland	+ 0,217

15.	Romania	+ 0, 606
16.	Russia	- 0,723
17.	Slovakia	- 0,757
18.	Slovenia	+ 0, 691
19.	Ukraine	+ 0,421

Source: own calculation

We see from the above table that the value of the Pearson correlation coefficient ranges from -1 to +1. The sign of the coefficient indicates the direction of the relationship between variables. The plus sign indicates a direct link (as values of the CR3 variable grow, the values of the ROE variable increase too) and the minus sign shows the reverse link. The absolute value of the coefficient indicates the intensity of the relationship, namely: the closer to 1, the bond is stronger; the closer to zero, the link is weaker.

There is a strong and direct link between the indicator of the degree of banking market concentration - concentration ratio (CR3) and performance indicator - the rate of return on equity (ROE) for eight countries (Albania, Belarus, Estonia, Latvia, Montenegro, Romania, Slovenia and Ukraine). A direct but weak link between the two indicators CR3 and ROE we find in banking markets such as Bulgaria, the Czech Republic and Poland. On the the other hand, the values of the Pearson correlation coefficient show there is a strong inverse relation for four countries (Bosnia and Herzegovina, Hungary, Russia and Slovakia). A reverse but weak link we have seen in banking markets such as Croatia, Lithuania, Macedonia and Moldova.

We can affirm that there is a direct and strong correlation between the degree of market concentration and bank performance in eight banking markets, namely Albania, Belarus, Estonia, Latvia, Montenegro, Romania, Slovenia and Ukraine. In these markets, SCP assumptions are verified. Increasing concentration in the banking market will determine an increase in the performance of banks. However, for 4 of the 19 analyzed countries, namely Bosnia and Herzegovina, Hungary, Russia and Slovakia, the SCP hypothesis is not verified because the link between the variables is reversed and powerful, which means that the bank's performance in these markets increases as the degree of concentration decreases and competition among banks becomes more intense. For the other seven examined countries, the link between the two variables is weak.

CONCLUSIONS

The main goal of this research was to apply the Structure-Conduct-Performance hypothesis to examine whether market concentration has an impact on banking performance and to examine policy related issues. In this sens, our empirical approach integrated a panel data analysis regarding indicators of banking sector concentration (CR3) and of banking performance (ROE) from 19 countries in Central and Eastern Europe during 2001-2010.

Since the undertaken analysis shows the existence of a direct and strong correlation between the concentration indicator (ratio of concentration) and performance indicator (the rate of return on equity) in 8 (Albania, Belarus, Estonia, Latvia, Montenegro, Romania, Slovenia and Ukraine) of the 19 analyzed markets, we can say that in these countries the SCP paradigm may explain the behavior of banks. The same result was obtained for Latvia by Kanapeckas: "the research identified existing relationship between structure and performance" [11]. If the competition authorities of the 8 countries aim to increase the degree of competition in their specific banking markets (by blocking mergers and acquisitions transactions), they should take into account the negative impact on the performance of the banking sector. If an improvement of banking performance is pursued in these markets, the competition authorities should approve a greater number of concentration operations among banks.

Following the obtained results, we can state that there is a reverse and strong relation between concentration of banking market and performance of banks in four of the analyzed countries, namely: Bosnia and Herzegovina, Hungary, Russia and Slovakia. Competition authorities in these countries should take into account that they can positively influence the performance of the banking sector by increasing competition in the banking market. In other words, the approval of mergers and acquisitions transactions will not only result in an increased market concentration, but also in a decrease in bank performance.

In addition to this, in countries where the structure of the banking market is highly concentrated (taking into account the rate of concentration of the first three banks in the market): Estonia, Lithuania, Belarus and Macedonia, competition authorities should focus on increasing competition, by discouraging mergers and acquisitions in the banking sector.

The conducted study concluded that the level of market concentration can influence the performance of banks, which can directly interest practitioners. A number of studies Berger and Hannan [1]; Neumark and Sharpe [2]; Prager and Hannan [12], Tregenna [3] support the SCP framework, that find positive relationships between market structure and bank performance measures. This foundation has been supported by over 20 empirical works. A recent study conducted by Petria N., Capraru B. and Ihnatov I. (2015) consider that competition has a positive impact on bank profitability [13].

If decision makers within banks are after higher performance, they should consider the fact that entering banking markets in Albania, Belarus, Estonia, Latvia, Romania, Slovenia and Ukraine through mergers and acquisitions transactions will result into an increase in both the market concentration and the performance of the banking sector (we intentionally omitted Montenegro because the ROE level in this country is lower than in other countries).

The comparative analysis has shown the existence of a high degree of concentration in the banking markets of Central and Eastern Europe countries. In this sense, the reserch conducted by European Central Bank in 2014 concluded that: „banking sector structure tended to become more concentrated in a number of countries, in particular those undergoing deep banking sector restructuring processes". The implication of this result for competition authorities is that they should intervene more on their banking markets (especially in countries such as Estonia, Lithuania, Belarus and Macedonia), by prohibiting mergers and acquisitions in the banking sector, or by removing restrictions

and facilitating the entry of new private banks to increase the number of players and thus decrease the degree of concentration.

REFERENCES

[1]Berger A.N., Hannan T.H., The Price-Concentration Relationship in Banking, Review of Economics and Statistics, Cambridge, MIT Press , vol 71, pp 291–99, 1989.

[2] Neumark D., Sharpe S.A., Market Structure and the Nature of Price Rigidity: Evidence from the Market for Consumer Deposits, The Quarterly Journal of Economics, vol. 107(2), pp. 657-680, 1992.

[3] Tregenna F., The fat years: The structure and Profitability of the US Banking Sector in the Pre-crisis Period. // http://cje.oxfordjournals.org/content/33/4/609.full.pdf+html (referred on 11/05/2016), 2009.

[4] Ferreira C., Bank Market Concentration and Efficiency in the European Union: a Panel Granger Causality approach. // http://ideas.repec.org/p/ise/isegwp/wp032012.html (consulted on 10/04/2013) (referred on 11/05/2016), 2012.

[5] Nguyen J., Market Concentration and other Determinants of Bank Profitability: Evidence from Panel Data, International Research Journal of Finance and Economics, issue 70, 2011.

[6] Smirlock M., Evidence on the (non) Relationship between Concentration and Profitability in Banking, Journal of Money, Credit and Banking, vol 17, pp 69-83, 1985

[7] Sahoo D., Mishra P., Structure, Conduct and Performance of Indian Banking Sector, Review of Economic Perspectives, vol. 12(4), pp 235-264, 2012.

[8] BSCEE, Review 2001 – 2010 // https://www.bscee.org/publications/review.html (referred on 02/04/2016).

[9] Rose P. S., Commercial Bank Management. 4th Ed. Singapore: Irwin/McGraw Hill Publication, 1999.

[10] European Central Bank, Beyond ROE – how to measure bank performance //http://www.ecb.europa.eu/pub/pdf/other/beyondroehowtomeasurebankperformance20 1009en.pdf (referred on 29/04/2016), 2010.

[11] Kanapeckas R., Application of the SCP Paradigm for the Research on the Banking Sectors in the Baltic States, // http://vddb.library.lt/fedora/get/LT-eLABa-0001:E.02~2013~D_20130606_112520-85461/DS.005.1.01.ETD (referred on 08/05/2016), 2013.

[12] Prager R., Hannan T.H., Do Substantial Horizontal Mergers Generate Significant Price Effects? Evidence from the Banking Industry", Journal of IndustrialEconomics, vol. 46(4), pp 433-452, 1998.

[13] Petria N., Capraru B., Ihnatov I., Determinants of banks' profitability: evidence from EU 27 banking systems, Procedia Economics and Finance 20 , pp 518–524, 2015.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION SOCIAL SCIENCES AND ARTS SGEM 2016

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

IMPACTS OF LABOUR MIGRATION ON DEVELOPMENT AND AMOUNT OF SALARY

Ing. Magdaléna Tupá, PhD.[1]

[1] Department of Management and Human Resource Development, Faculty of Social and economic relations, University of Alexander Dubchek in Trencin, **Slovakia**

ABSTRACT

The study deals with the impact of work migration on the development and amount of salary in Germany and Austria. Migrated work force is strongly represented in these countries whereas in comparison to the natives, the amount of their salary is significantly lower. We assume the amount of salary on labour market is dependent on the interaction between offer and demand. The study believes that in spite of the long-term lack of work force at some positions in the given countries, the amount of salaries in some sectors of economy do not increase as a rule. This is reasoned with the help of statistical data and via mathematical calculations it explains and proves the relation between the amount and development of salaries of working immigrants and the natives. In the end it evaluates the impact of immigration on decreasing the lack of work force and its pressure on the increase of salaries in some sectors. Moreover, it mentions the level of salaries of migrated work force when entering the labour market of Germany and Austria in comparison to the natives as well as the increase of level of salaries after acquiring practical skill and language knowledge.

Keywords: IMMIGRATION, WORK FORCE, LABOUR MARKET, SALARY, SECTOR OF ECONOMY

INTRODUCTION

According to the laws of general economic theory the labour market functions on the basis of the labour supply, represented by household members offering their work and labour demand generated by enterprises. Transection of supply and demand curves establishes the equilibrium price at which the economically active population is willing to work and companies are willing to pay for the finished work. In an unbalanced state where supply exceeds demand or vice versa, the price of labour rises or decreases eventually, in order to fulfil the tendency of balance. [8] These laws are applied also in the real economies to a greater or lesser extent, relatively to other external and internal environment affecting supply and demand.

Immigrants have a very important position in the German labour market. Considering the historical perspective, Turkish low-skilled workers were hired already in the 1960s and 1970s as Gastarbeiters. [9] Today, Germany is facing similar problems. Labour demand of companies exceeds labour supply represented by majority of the working population. Integration processes and integration policies implemented to promote free movement of human capital in the European Union are an economic response to this difficult situation [3, 6, 1] , which foresees a further deterioration over the years because of the reach of the retirement age of employees from the German "baby boom" generation (born 60 years ago). Because of sustainability of the economic growth and of the resources to ensure sustainability of pension schemes Germany implements pro-

immigration oriented policies. Moreover, it aims to fill gaps in the labour market, to fill positions which the autochthonous population has no interest in but also to fill high-skilled vacant posts which the country does not have the manpower for [11, 13]. When we talk about the Austrian labour market, jobs in health care and social services face an increased demand. For a long time, we could see very significant imbalances in this sector.

One of the starting points is the lack of controlled immigration of labour. Pull factors serve as tools attracting labour. They ensure attractiveness of jobs for immigrants [5]. Germany and Austria took advantage of these opportunities in the struggle with a lack of skilled and unskilled labour for the long-term lack of labour force.

Issue of influencing labour market via migration has rarely appeared in the media and on websites of professional and scientific publications. The scope of analyses focuses primarily on the impact of migration on the unemployment rate [14], and marginally on wage levels in the country.

Most of the information that would help researching the issue and subsequently steering migration on the labour market stems from estimations, assumptions, thinking and myths. To build an idea is possible only on the basis of fragmented statistical data and surveys. Accurate data on migration flows of the labour force, employment rate of foreign labour force according to the sectors, wage rates of employees with migrant background as well as conditions of their employment are absent.

The aim of this study is therefore to explain the causal relationship between the levels of earnings and employing migrants in certain fields based on statistical data on supply and demand of labour force in the fields with high rates of migrants´ employment in national economy of Germany and Austria and on analysis of statistical data on development of wage levels in these fields.

In order to achieve the aim and objectives of the study, we elaborated system of comparisons and calculations of wages on positions with a high proportion of immigrants. The calculations are based on statistical data from Eurostat, WTO, OECD, Destatis and Statistics Austria, the statistical database of the Statistical Office in Austria. The study uses variance of scientific methods - induction, deduction, comparison, abstraction, analysis, synthesis and several statistical and mathematical methods and calculations.

IMMIGRATION TO GERMANY

The number of immigrants did not increase substantially from 2000 to 2009, it varied from 350 thousand to 400 thousand of immigrants per year. Since the year 2009, which represented breaking point for migration flows due to the deepening of the economic crisis, the immigration has intensified rapidly. In 2014, 1 149 045 persons immigrated. In 2006, migration balance was 103 903 immigrants with an increasing trend in the next year and a net migration gain of almost 18%. In 2008, a negative migration balance was recorded, whereby the net migration decreased by 83,060 people. In the next year it increased again by over 19,540 people. Then balance grew significantly and in 2014 reached the level of 676,730 persons. According to the Federal Statistical Office [4] there were approximately 16.4 million people with migration background living in Germany at the end of 2014, which is 20.3% of the population of this country. 9.2

million of them have a German passport, and only 7.2 million of them are still registered as foreigners.

OVERVIEW OF DEVELOPMENT OF AVERAGE EARNINGS IN GERMANY

Growth of the average gross earnings in the national economy of Germany follows the economic activity of the country in response to the growth of the world economy. In 1995, the average gross earnings were per worker € 2,281 per calendar month in service, in 2000 it was € 2,551, representing an increase of 11.84% and in 2010 already € 3,227, i.e. the 26.5% increase over five years. The following year the average earnings have grown annually by more than two percent, with the only exception of the year 2013, when the increase was only 1.71%. In 2015 the level of average monthly earnings amounted to € 3,612, with an increase in the five-year period of 10.66%.

Table 1 Growth of the average gross earnings in the national economy of Germany in the years 1995, 2000, and from 2010 to 2015

Growth of the average gross earnings in the national economy of Germany in the years 1995, 2000, and from 2010 to 2015											
	1995	2000	2007	2008	2009	2010	2011	2012	2013	2014	2015
Average gross salary per month	2 281	2 551	3 023	3 103	3 141	3 227	3 311	3 391	3 449	3 527	3 612
Annual increase	-	-	-	2,58	1,21	2,67	2,54	2,42	1,71	2,26	2,41

Source: Destatis – Statistisches Bundesamt [4]

The growth of average gross monthly earnings in the national economy of Germany in the years 2008 to 2015 reflects the situation in the world economy. Therefore, it faced a decline of 1.21% in 2009, resulting from the outbreak of the global economic crisis. In subsequent years Germany has managed to stabilize the growth of the gross monthly earnings at around 2.5%, whereby after the repeated recession of the world economy in 2013, growth fell to 1.68% again.

When analysing the average wages by industry, including variable components of financing, we found that the most paid jobs are those in the banking sector with an average annual salary of € 62,451, the pharmaceutical industry with € 59,991, the automotive industry with € 59,727, and followed by telecommunications, chemical industry, engineering, medicine, insurance and energy. On the other hand, employees working in the hotel industry and gastronomy, in education sector, tourism, health and social services, agriculture and public services as well as artisans have the lowest earnings. According to the fields of study graduates of medicine, transportation, economic informatics and industrial engineering earn the most. On the contrary, the graduates of culture, art, design and social work earn the least.

GERMAN LABOUR MARKET AND IMMIGRANTS

There is a long-term lack of certain professions at the Germany's labour market. Experts on the German labour market [2] ranked among the ten most desirable jobs with the required medium or high-skilled workers in health care - doctors, nurses, carers and carers, as well as technical engineers, IT safety systems, software developers,

mechatronics, civil engineers, engineers for energy, chemistry, food and science teachers and mathematics. Demanded employment requiring no qualifications are jobs in agriculture, forestry and fisheries, positions of support personnel in the accommodation and catering services, unskilled work in manufacturing and drivers.

Employment of foreigners in terms of the employment relationship shows that there are twice as many migrants with blue collar worker status, i.e. 40.8%, then in the autochthonous population. Employee status have 47.5% of foreigners and 58.8% of Germans. Foreigners are significantly lagging behind in clerical job positions. Jobs with comparable structure are work at home and self-employment status. [7]

According to an OECD study from 2013 [10] examining the labour force in Europe between 2000-2010, among the occupations with the largest increase in employment of immigrants belonged assistants in the sales and service, unskilled workers in construction, mining, manufacturing and transport, followed by labourers in agriculture and fisheries, repair and security service personnel, personnel in the catering and hotel industry, health and social work. On the contrary, most of the domestic population worked on the positions as other professionals with medium levels of qualification, officials and teachers, whose share is more than double compared with the employment of immigrants.

WAGE DEVELOPMENT IN JOBS ACCORDING TO SECTORS WITH HIGHER SHARE OF EMPLOYED IMMIGRANTS

As demand for these professions greatly exceeds supply on the domestic labour market for the money that the employer is willing to pay for the work, it is necessary to seek additional resources. In the era of globalization this additional labour force is represented by immigrants. They represent a workforce with the necessary qualifications who is willing to work for wages generally offered at a lower level than the native population.

Institute for Research in the field of employment [12] compares in its study the salaries of foreign and German workers, men employed full-time. It discovered that foreigners, who have entered the German labour market in 2000 received on average 64% of the wages of German workers, and eight years later reached only 72% of their earnings. We can identify several groups of foreigners according to their earnings. In the first group are foreigners who have entered the labour market in Germany with a range between 54% and 59% of German workers' earnings and during the reporting period their earnings increased by only 6% to 10%. This includes migrants from Turkey, Portugal or the former Yugoslavia. The second group are immigrants from France, Spain, the Czech Republic but also Slovakia, Hungary, Romania and Ukraine, who entered the German labour market with the income level of 70% to 87% of the average German income. The third group are foreigners already entering the labour market of Germany with above-average earnings and these are Austrians, Dutch and Britons.

As reasons for lower wages for the employment of immigrants are claimed almost no or insufficient language skills, lack of work experience, qualifications, age etc..

When analysing wages according to sectors with a high number of employed immigrants, we found that the lowest monthly salary is paid to employees in the sector of gastronomy, € 1,882 and € 1,914 in the sector of accommodation in 2015. Compared to the average wage in the national economy of Germany, it is more than € 2,200 less.

Earnings in these sectors grew by 15% from 2007 to 2015. Whereas from January 1st 2015 Germany applies legal minimum wage in the amount of € 8.50, wages were certainly also affected by this fact. Other sectors with very low level of wages are production and processing of food (€ 2,334), transport and storage (€ 2,739), retail (€ 2,750) and construction assistance (€ 2,896). Percentage growth in retail was 12.51% for retail during the reporting period, which was the lowest of all sectors. Furthermore, the wage growth in construction assistance was 15% and retail 13.6%. In production and food processing, the increase amounted to 20.07%, but in 2015 wages in this sector increased by 6.53% and in 2012 by 6.54%, in other years of the reporting period it was below the average wage growth in national economy.

Wages in these sectors are growing more slowly even though the OECD in its report on the immigration of foreign labour force repeatedly mentioned in the list of 10 most wanted jobs positions as driver, cook, distributor, skilled manual workers, doctor and medical staff in the time period from 2006 to 2012.

Table 2 The growth of average gross monthly earnings in % in national economy of Germany according to the sectors and employment of immigrants

The growth of average gross monthly earnings in % in national economy of Germany according to the sectors and employment of immigrants										
		2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**Σ**
Manufacturing industry		2,22	-2,60	4,83	3,69	3,42	2,54	2,87	2,91	18,38
out of which:	Food production	2,17	1,35	1,71	1,64	6,54	0,20	1,74	6,53	20,07
	Engineering	1,96	-5,13	5,60	5,17	3,20	2,49	3,57	4,03	19,41
	Repair and installation of machinery	1,99	-0,87	2,27	3,96	5,78	-0,44	3,54	2,22	17,17
Construction		2,70	0,83	0,90	3,35	3,28	-0,49	2,56	3,30	15,36
out f which:	Civil engineering	1,99	0,07	0,04	4,91	2,71	0,13	5,66	4,51	18,51
	Construction	3,22	1,88	-0,68	5,41	0,00	0,47	6,45	4,25	19,38
	Auxiliary work	2,90	0,80	1,50	2,50	4,70	-1,00	0,60	3,00	15,00
Trade		2,10	1,12	2,16	2,05	4,03	-0,25	1,09	2,15	13,62
Transport and Storage		2,41	1,37	1,61	2,11	2,44	0,52	0,72	2,06	12,51
Accomodation		1,55	0,69	1,46	2,05	2,40	0,65	4,64	3,21	15,53
Gastronomy		1,52	0,48	1,33	1,77	2,64	0,46	3,98	3,87	15,03
Average gross earnings		**2,58**	**1,21**	**2,67**	**2,54**	**2,36**	**1,68**	**2,21**	**2,35**	**16,31**

Source: Own elaboration based on the data from Destatis – Statistisches Bundesamt [4]

When examining salaries in health and social services, we found that the average salary in 2015 in the health sector was equal € 3,534 and € 2,987 in social services sector with an increase of 18.4% in the period from 2006 to 2015. Salaries of doctors span from more than € 9,000, salaries of nurses fluctuate around € 2,939 and salaries of caregivers around € 1,958 per month. The smallest salary increase of 16% experienced mostly social workers in 2015. This could be also influenced by the adoption of the Minimum Wage Act.

Table 3 The growth of average gross monthly earnings in % in national economy of Germany in healach care and social services

The growth of average gross monthly earnings in % in national economy of Germany in healach care and social services										
		2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**Σ**
Health care and social services		2,20	3,50	1,50	2,90	2,50	2,10	1,60	2,10	18,40
out of which :	Health care	2,10	4,00	1,70	3,00	2,60	1,80	1,60	2,50	19,30
	Social services providing accommodation	2,00	2,40	0,80	2,00	4,20	2,40	2,70	3,20	19,70
	Social services without accommodation	2,70	1,80	0,60	2,60	3,30	-0,20	0,00	5,20	16,00

Source: Destatis – Statistisches Bundesamt [15]

Among the other vacant positions harder to fill and simultaneously most wanted jobs (but not by immigrants) belong accountant, financial advisor and insurer, as well as IT specialist. The highest wages achieve employees in the field of financial advisory and insurance services, in the amount of € 4,258 per month, followed by taxation and accountancy in the amount of € 3,656 and € 3,300 in the field of information technology. There was an increase in the period from 28.66% in information technology, 19.7% by financial advisories and insurers to 12.72% for officers and staff of taxes. One of the factors influencing low levels of wage increase in this sector was the one-time decrease of wages by more than 7,5% in 2012.

Job positions with a high proportion of employed domestic workers are teachers, civil servants, researchers and developers. Their salaries reach the level of € 3,882 in education, € 3,128 in public administration and € 3,768 in research and development. The increase in average monthly gross earnings was 14.5% in education, almost 20% in public administration, and 19.3% in science and research during the reporting period.

In the sectors of public administration, education, health and social services were mainly workers born in Germany employed – the autochthonous population. Evolution of average wages indicates that in the monitored sectors wages grew annually from 2007 to 2015. In the time of economic crisis wage growth slowed down from more than 3.5% to less than 1% in education and public administration. The increase in education for seven years has been 14.53%, in public administration 19.95% and in health and social services 16.58%.

LABOUR MIGRATION IN AUSTRIA

When we talk about the Austrian labour market, the most significant mismatch between supply and demand for labour force represent employees in health and social care. In that sector in Austria in 2011 worked nearly 300 thousand people and according to statistics from the Labour Force Survey about 53 thousand had migrant background. In 2014 89 299 people with migrant background worked in Austria in the health sector, in 2012 it was 85 445 persons. 55 026 immigrants worked in the hospitals as care workers. There were 24 099 doctors employed, 14 837 people employed in the medical and

support services and 1 434 midwives. In the area of non-medical health services with a higher level and medical and technical services were 14 946 people employed.

GROWTH OF THE GROSS SALARY IN HEALTH CARE SECTOR AND SOCIAL SERVICES IN AUSTRIA

The average wage per hour in Austria in the national economy in 2008 was € 19.55, € 18.73 in services. In the area of health and social care the average wage per hour was equal to € 19.47. In comparison with the education sector it was lower by € 2.19 and compared to professional, scientific and technical activities up to € 6.17 lower. In 2012, the average wage per hour in the economy of Austria was € 21.93, while in services it was € 0.76 lower. In the area of health and social care it stood at € 21.06, in education it was € 23.727 and in professional, scientific and technical activities € 21.06. After the calculations of increase in the percentage of growth of 8.17% it was detected that in the area of health and social care, which is below the average wage, the average salary increased by 12.17%, and in the services by 13.03%.

CONCLUSION

The character of the labour market in terms of employment of migrants in Germany and Austria is specific. Pro-immigration policy aims to substitute the lack of manpower. Immigrants are generally employed at lower wage levels than the average level of wages of the majority population. Experts claim the reasons for the lower level of wages being e.g. lack of language skills and abilities, lack of qualification and other. But even after acquiring skills and practice in the field and having longer work experience, the wage rates of immigrants does not equal the wage rates of the majority population.

From the analyses of the labour market in Germany we can conclude that wage growth of the jobs with a higher share of employment of immigrants is significantly lower than the average wage growth in the economy of Germany, despite the fact that these jobs are among the most sought. In the sector of transport and storage, it was lower by 3.8%, in retail trade by 2.7%, other sectors are food, construction and accommodation services. In the area of food processing, while wages grew more than the average gross wage, there was a significant increase in wages in this sector in 2012 and 2015 – by 6.5%. Wages for these positions belong to the lowest and Germany on January the 1st 2015 adopted a law on the minimum wage which had a significant impact on their growth. Jobs, in which the proportion of employed immigrants is very low and therefore are generally occupied by the majority population, grew significantly faster than the growth of average gross wages.

From the analysis of the Austrian labour market appear the health and social care as sectors with the highest share of employment of immigrants. Wage growth in this sector has long been below the average wage in the national economy of Austria, and even below the average of the average gross wage in services. Percentage points´ increase comparing surveyed years is 8.17%, while the average growth in the economy was more than 12% and in services in general more than 13%.

Wage developments in the countries surveyed in sectors with a high proportion of employment of immigrants point to relieved pressure in wage development despite the fact that demand far exceeds supply for labour.

SCIENTIFIC JOURNAL INTERDISCIPLINARY RESEARCH SCIENCES AND ARTS

ACKNOWLEDGEMENTS

This publication was created within the frame of the project funded by VEGA agency „Trends in the migration of labor force in the EU countries and its impact on the economic and social development of Slovakia" (č.1/0736/14).

REFERENCES

[1] Adepoju, A., Van Noorloos, F., Zoomers, A., Europe's Migration Agreements with Migrant-Sending Countries in the Global South: A Critical Review, Journal of International Migration, (48) 3, 2010, pp. 42-75.

[2] Bundesagentur für Arbeit, Der Arbeitsmarkt in Deutschland – Menschen mit Migrationshintergrund auf dem deutschen Arbeitsmarkt, Núrnberg, 2014, [online], Available at: http://statistik.arbeitsagentur.de/Statischer-Content/Arbeitsmarktberichte/Personengruppen/generische-Publikationen/Migranten-2014-07.pdf [2016-31-05].

[3] Daugeliene, R., The position of knowledge workers in knowledge-based economy: migration aspect, European Integration Studies, 1, Lithuania, 2007, pp. 103-112.

[4] Destatis – Statistisches Bundesamt, [online], Available at: https://www.destatis.de/DE/ZahlenFakten [2016 – 31 – 05].

[5] Divinský, B., Zahraničná migrácia v Slovenskej republike - stav, trendy, spoločenské súvislosti, Bratislava: Friedrich Ebert Stiftung, Slovakia, 2005, pp. 216.

[6] Kahanec, M., Labour market impacts of post-enlargement migration on hosts and stayers in EU labour markets, Transfer: European Review of Labour and Research, Ungaria, 2015, vol. 21, 3: pp. 359-372

[7] Liebig, T, The Labour Market Integration of Immigrants in Germany. In OECD Social, Employment and Migration Working Papers, OECD, 2007, pp. 47, 8.

[8] Lisý, J., Ekonómia v novej ekonomike, Bratislava: Iura Edition, Slovakia, 2007, pp. 636+79.

[9] LUFT, S., Die Anwerbung türkischer Arbeitnehmer und ihre Folgen, Available at: http://www.bpb.de/internationales/europa/tuerkei/184981/gastarbeit [2016 – 31 – 05].

[10] OECD, Zuwanderung ausländischer Arbeitskräfte: Deutschland, 2013

[11] Polakowski M., Szelewa D.: "Poland in the migration chain: causes and consequences", Transfer. European Review of Labour and Research, 2016.

[12] Romiti, A., Trübswetter, P., Vallizadeh, E., Das soziale Umfeld gibt die Richtung vor, Institut für Arbeitsmarkt- und Berufsforschung, Lohnanpassungen von Migranten, Deutschland, 2015, vol. 25, pp. 8.

[13] Vojtovič, S., Kordoš, M., Trends in unemployment and emigration of labor force, Economics & Finance. Miami, USA, 2016.

[14] Vojtovic, S., The impact of Emigration on Unemployment in Slovakia. *Engineering Economics*, Lithuania, 2013, Vol. 24, No 3, pp. 207-216.

[15] Destatis – Statistisches Bundesamt, Verdienste und Arbeitskosten, Arbeitsnehmerverdienste und Indizes der Arbeitnehmerverdienste – Lange Reihen-, Deutschland, 2016, p. 177.

IMPROVING THE ACCESSIBILITY OF TOURISM THROUGH AN INNOVATIVE EVALUATION TOOL FOR TOURISTS WITH SPECIAL NEEDS

Assoc. Prof. Dr. Gheorghita Dinca [1]

Lecturer Dr. Laura Cismaru [2]

Prof. Dr. Gabriel Bratucu[3]

[1,2,3] Transilvania University of Brasov, **Romania**

ABSTRACT

In the last years, improving accessibility in tourism and hospitality became one of the central preoccupations of the European Commission. Several studies were funded by the European Commission in order to offer a deeper understanding of what accessible tourism means. Also, several research projects were supported to create accessible tourism itineraries. In 2014, the European Excellence Awards for Accessible Tourism rewarded the true commitment to accessibility of several European enterprises and public authorities. Making European tourism more accessible is also directly correlated with making it more competitive. In this context, the present article advances the idea of creating an innovative tool, based on a friendly technology, offering the possibility to destination management organizations to obtain direct information regarding the accessibility of the tourism and hospitality facilities and services within destinations. We used the literature review, the case study and the innovation, as qualitative research methods. The first part of the article is an overview of the importance of accessibility for the European tourism. In the second part of this paper, we presented the central role of improving accessibility within the most recent European Tourism Indicator System ETIS Toolkit for sustainable destination management which was launched in March 2016. In this context, a brief presentation of the research project called Destination Intelligent Management for Sustainable Tourism (DIMAST) was included due to the fact that it was conceived mainly based on the first European Tourism Indicator System Toolkit for Sustainable Destinations, launched in 2013. We advanced the idea of improving the Business Intelligence tool created within this project by conceiving an innovative technology to obtain direct information from tourists with special needs from Brasov County. Such approach can support the efforts of the local destination management organization to improve the accessibility of tourism, hence making it more sustainable and competitive.

Keywords: accessible tourism and hospitality, destination management, tourists with special needs

INTRODUCTION

As noticed by European experts, more than 600 million people in the world "live with disabilities. Together with their families, this means that approximately 2 billion people – a third of the global population – are directly affected by disability" [1]. For all these people, traveling can be a real challenge and specific policy measures have to be

adopted in order to offer them the real possibility to actually enjoy tourist experiences just like other tourists with no disabilities or special needs, at no extra costs.

The concept of "Accessible tourism", also known as "Access Tourism", "Universal Tourism", "Inclusive Tourism" or "Barrier-free Tourism" has been recently defined as the "tourism and travel that is accessible to all people, with disabilities or not, including those with mobility, hearing, sight, cognitive, or intellectual and psychosocial disabilities, older persons and those with temporary disabilities" [2].

Very often, tourists with special needs encounter specific problems within destinations, about the lack or reduced accessibility related to accommodation establishments, transportation or tourist attractions. Knowing about these problems is a matter of great importance for local stakeholders, mainly for decision makers, such as Destination Management Organisations (DMOs) in order to adopt appropriate policy measures to increase destination accessibility. In this context, the present paper identifies a way of improving communication between local DMO and tourists with special needs through a friendly innovative technology for video response survey recently conceived by a local Business Intelligence developer in Brasov, Romania.

THE IMPORTANCE OF ACCESSIBILITY FOR THE EUROPEAN TOURISM

Four priorities have been set by the European Commission within the most recently adopted EU Tourism Policy [3]:

(1) Stimulate competitiveness in the European tourism sector;
(2) Promote the development of sustainable, responsible and high-quality tourism;
(3) Consolidate the image and profile of Europe as a collection of sustainable and high-quality destinations;
(4) Maximize the potential of EU financial policies and instruments for developing tourism.

As it has been emphasized by European experts, "improving the accessibility of tourism services increases their quality, the enjoyment of all tourists and it also improves the quality of life in local communities" [1]. In this context, accessibility is part of what "high-quality tourism" means, in a European interpretation. Providing accessible tourist services is also a responsible approach. Recently, accessibility has also become a focal concern within the EU initiatives related to the sustainable development of European tourist destinations [2]. Taking into consideration the four European priorities set for the EU tourism, improving accessibility can be therefore seen as an important source of obtaining competitive advantage by European tourist destinations.

The European Commission true commitment to increasing accessibility of tourist services and destinations is demonstrated through concrete actions and initiatives, which can be grouped in the following categories [1]:

1. Accessible tourism itineraries

With the main aims of fostering adaptation of tourism products and services to the needs of people with special access needs, improving skills and training with relation to accessibility in the tourism supply chain and enhancing the quality and diversity of the offer of accessible tourism experiences in Europe [4], the EU co-funded eight projects related to the design, implementation, and marketing of accessible tourism itineraries:

Tourism4All, Access for All, Accesstour, Smart Tourist Routes for Inclusive Groups (STRING), Cosy4You, VIA REGIA, EWB 'Europe Without Barriers', Mobility UNESCO Sustainable Tourism (MUST) [1]. In 2015, a second call for proposals has been launched in order to select and co-fund several projects aiming to strengthen the competitiveness and sustainability of the European tourism sector by encouraging the extension of the tourism season, by diversifying the EU tourism product and by enhancing its accessibility [5].

2. Studies on accessible tourism

Several studies have been realized and supported by the European Commission in the field of accessible tourism since the beginning of the 2000s. In 2014-2015, a collection of case studies of European accessible destinations has been created, including London (UK), Frankfurt (Germany), Arona (Spain), Stockholm (Sweden), Lousa (Portugal), Paris (France), Disneyland (France), Slovenia, Moravian-Silecian Region (Czech Republic), Athens (Greece), Trentino (Italy), Shoenbrunn-Austria, Herault (France), Barcelona Accessible Cruise Destination (Spain), Rovaniemi (Finland) [6].

3. European Awards for Accessible Tourism

The European Commission organized during the summer of 2014 the conference called "Mind the Accessibility Gap: Rethinking Accessible Tourism in Europe". At the end of it, the European Excellence Awards for Accessible Tourism ceremony took place in order to reward "the efforts of private enterprises and public authorities in EU who have made significant efforts to increase the accessibility of their services and facilities to tourists with special needs" [1]. Two prizes want to Romanian stakeholders. In the first category, "Accommodation and Catering", four prizes have been offered, one of them to the Romanian business Complex President, Băile Felix, for offering quality treatments, particularly for those with rheumatism and movement/joint issues [7]. In the second category, "Nature, Heritage, Culture, Entertainment & Leisure", three prizes have been offered, one of them to the Piatra Neamţ Town Hall in Romania for offering a multitude of leisure activities, with special features for people with disabilities [7].

THE CENTRAL ROLE OF IMPROVING ACCESSIBILITY WITHIN THE 2016 EUROPEAN TOURISM INDICATORS SYSTEM TOOLKIT

In 2013, the European Commission launched the first version of the European Tourism Indicators System (ETIS) Toolkit for Sustainable Destinations, as a result of several years of hard work dedicated to identify the most appropriate set of indicators for measuring the sustainability performances of tourist destinations [8]. As stated by its creators, the ETIS system is an important management tool which supports all European destinations willing to develop in a sustainable way through offering them the possibility to monitor their performance related to sustainability using a comprehensive set of indicators. In the 2013 version of ETIS there were included 67 indicators for evaluating the sustainability development of tourist destinations. The indicators were grouped in 27 core and 40 optional indicators. Core indicators can be the starting point for all European destinations while optional indicators are more relevant to destinations that have more advanced sustainability systems in place. The 67 indicators are grouped in four sections: Section A: Destination Management, Section B: Economic Value, Section C: Social and Cultural Impact and Section D: Environmental Impact. Within

Section C – Social and Cultural Impact, four indicators (two core and two optional) are grouped under the category called - C.3 Equality/Accessibility [8]:

- C.3.1 Percentage of commercial accommodation with rooms accessible to people with disabilities and/or participating in recognized accessibility schemes (core indicator)
- C.3.1.1 Percentage of destination served by public transport that is accessible to people with disabilities and people with specific access requirements (optional indicator)
- C.3.2 Percentage of visitor attractions that are accessible to people with disabilities and/or participating in recognized accessibility schemes (core indicator)
- C.3.2.1 Percentage of visitors satisfied with the accessibility of the destination for those with disabilities or specific access requirements (optional indicator)

Based on the 2013 ETIS Toolkit, in Brasov County, Romania, in 2014 it was developed and funded a research project called DIMAST – Destination Intelligent Management for Sustainable Tourism [9]. Its main aim is to create an innovative Business Intelligence tool, based on the ETIS indicators framework, to offer real support to the local Destination Management Organization (DMO) in the process of coordinating the development of tourism in a sustainable way. Being a four years project, the DIMAST Project is still in process. A key phase within DIMAST was to select the indicators which are the most appropriate to monitoring Brasov's performance related to sustainability [10]. This particular phase proved to be so important within the DIMAST Project due to the fact that for most of the ETIS indicators there was no available data.

Nevertheless, Brasov is a leading destination when it comes to sustainability related initiatives. For example, it is the first smart city in Romania regarding the street lighting control – since 2014 it has been using the inteliLIGHT® remote street lighting control solution [11]. Brasov is also a member of the European Innovation Partnership on Smart Cities and Communities (EIP-SCC), an initiative supported by the European Commission bringing together cities, industry, SMEs, banks, research and other smart city actors [12]. In this context, the profile of Brasov was not the problem, but the available data for the ETIS indicators was.

After comprehensive research [13], from the accessibility indicators presented above, only the C.3.1. ETIS Indicator has been included within the DIMAST system of indicators and it was formulated in a different manner, in order to find available data. According to the initial ETIS formulation, the C.3.1 ETIS indicator measures the "percentage of commercial accommodation with rooms accessible to people with disabilities and/or participating in recognized accessibility schemes". There is no institution in Brasov which registers data regarding hotel rooms accessible to people with disabilities or the implementation of accessibility schemes by enterprises in Tourism and hospitality. Apparently, there was no possibility to find available data for this indicator in Brasov. But, using a corroborative approach, it was proved that, according to the Romanian legislation regarding the hotel classification, all four and five stars hotels in Romania have to provide some accessibility facilities such as ramped step free access or special equipped rooms for persons with disabilities [14]. In this

context, the C.3.1 ETIS indicator was formulated in the DIMAST project as follows [13]:

- *Percentage of Brasov hotels with accessibility facilities*

Due to the fact that the only available data registered in Brasov are related to the classification of hotels by the number of stars, the above mentioned indicator will be measured as ▪ *Percentage of four and five stars hotels in Brasov* [14]. According to this measurement approach, the real situation in Brasov is not completely covered because there might be other hotels or accommodation buildings with less than four or five stars which offer accessibility facilities. But, it was the only proactive approach to actually include one ETIS indicator form the Accessibility category within the DIMAST Project.

In 2016, the European Commission launched a new, improved version of the ETIS toolkit [2]. The 2016 ETIS system is composed of a set of 43 core indicators, "core" being defined as indicators which "cover the fundamental aspects of sustainability monitoring and provide the basis for effective destination management". Due to the fact that ETIS has as a main trait its flexibility, the possibility to consider supplementary indicators has been offered to European destinations in order to tailor the system to their own particular needs or profile. Several sample supplementary indicators are formulated within the 2016 ETIS toolkit. The 43 core indicators are grouped in the same four sections. Within the Section C - Social and cultural impact, a distinct category of indicators has been conceived - C.4 Inclusion/accessibility. It includes the following four core indicators [2]:

- C.4.1 Percentage of rooms in commercial accommodation establishments accessible for people with disabilities
- C.4.2 Percentage of commercial accommodation establishments participating in recognized accessibility information schemes
- C.4.3 Percentage of public transport that is accessible to people with disabilities and specific access requirements
- C.4.4 Percentage of tourist attractions that are accessible to people with disabilities and/or participating in recognized accessibility information schemes

Supplementary sample indicators related to accessible tourism, provided within the 2016 ETIS toolkit, are grouped in three categories:

1. Sustainable tourism policy

- Percentage of the destination with an accessible tourism strategy/action plan, with agreed monitoring, development control and evaluation arrangement

2. Equality/accessibility

- Percentage of commercial accommodation with rooms accessible to people with disabilities and/or participating in recognized accessibility information schemes
- Does the destination have an identified accessibility management office or person available to the public?
- Percentage of businesses that have a budget for accessibility improvements

3. Reducing transport impact

- Percentage of each category of transport in the destination that is accessible, i.e. public transport and private hire coaches, minibuses, taxis or minicabs.

Supplementary sample indicators are only provided for three domains: 1). Maritime and coastal tourism, 2). Accessible tourism and 3). Transnational cultural routes. In our opinion, it indicates that the three fields are of topical importance for the European Commission in the following period. Taking also into consideration the fact that almost 10% of the ETIS core indicators are accessibility indicators, we can conclude that accessibility plays a central, a key role within the 2016 improved ETIS toolkit.

USING INNOVATIVE TECHNOLOGY TO IMPROVE ACCESIBILITY

As mentioned above, the most important challenge within the DIMAST Project proved to be identifying those specific ETIS Indicators for which there is available data in Brasov. Several data sources have been taken into consideration within this process, and, by the end, formal agreements for data provision have been signed with the following institutions: the Association for Promotion and Development of Tourism (the local DMOS, which is also partner in the DIMAST Project), the National Statistics Institute (the local bureau in Brasov), the Consumers Protection Agency from Brasov County, the Romanian National Authority for Tourism (the local bureau in Brasov) and the National Agency for Environmental Protection in Romania (the local office) [13].

An important aspect regarding all indicators is related to the fact that Brasov County has 58 localities for which available data is needed. The entire County has many tourist attractions, therefore most of its localities have accommodation establishments. Data for the C.3.1. ETIS Indicator, as re-formulated in the DIMAST Project (*Percentage of Brasov hotels with accessibility facilities*), will be provided yearly by the local bureau of the Romanian National Authority for Tourism; thus it is an annual indicator in DIMAST [13].

Taking into consideration the previous section which concluded that within the 2016 ETIS toolkit a special focus is put on the accessibility indicators, both core and supplementary, the DIMAST team started to be preoccupied by this aspect. Accessibility, as shown in the first section, is lately a matter of topical importance for the European Commission, when it comes to tourism as well. In this context innovative technology was taken into consideration regarding the possibility to improve data availability for accessibility indicators within the DIMAST Project. The key partner within DIMAST Project is a local software developer, SC BitSoftware SRL, which has been chosen as a partner due to its research preoccupations as well as due to the fact that it is one of the few Romanian enterprises which actually develop (and not only implement) innovative Business Intelligence solutions. This year, the research team from SC BitSoftware SRL developed and launched the Plotto innovative technology, a flexible video research tool [15]. As stated by its creators, Plotto is actually "the only tool in the market that combines video gathering, online survey software, cognitive analysis and showreel generation in a self-service, intuitive open-platform".

In this context, the research team from the DIMAST Project suggested to include and make best use of the Plotto innovative technology in order to offer the real possibility to tourists with special needs to give direct feed-back, through video responses, regarding the accessibility (facilities) of local accommodation establishments (C.4.1.), public

transportation vehicles (C.4.3.) and tourist attractions (C.4.4.). One of the most important qualities of the Plotto technology is that it is a friendly way of performing research and obtaining relevant qualitative data directly from the customers. For tourists with special needs, using friendly technology is essential. Offering them the possibility to provide video statements regarding the accessibility of different tourist services within a destination is of great importance, because they will find it easier to give feed-back, they will offer relevant and valuable information to other tourists with special needs willing to visit that specific destination (Brasov) and they will also provide useful information for the local DMO regarding the real accessibility of the destination. Having access to this kind of qualitative information (video responses), the local DMO will be able to adopt suitable policy measures regarding the accessibility improvements within the destination, based on real status quo.

CONCLUSION

Sustainable tourism is tourism that is open to all and breaks down barriers to access, offering equality of access for people with disabilities and special needs, also regarding the quality of the tourist experience. It has been stated that "monitoring accommodation and attractions that are making provisions for people with disabilities/special needs helps raise awareness of the need for these facilities". In this context, several indicators measuring the accessibility of European destinations have been included within both versions of the ETIS toolkits.

Starting 2014, in Brasov, Romania, the DIMAST Project aims to implement the ETIS system of indicators in an innovative way, using Business Intelligence tools, in order to offer the local DMO a really useful instrument in the process of managing the sustainable development of tourism within Brasov County. Finding available data for accessibility ETIS indicators proved to be a very difficult task and therefore only one ETIS accessibility indicator was kept within the DIMAST indicators frame. The DIMAST Partners tried to identify a way to address this important challenge, mainly due to the fact that the 2016 version of ETIS toolkit transformed accessibility into a central concern. In this context, innovative technology called Plotto, developed by one of the DIMAST Project's partners, has been proposed to be used for qualitative data gathering through conducting video responses surveys. The fact that Plotto is actually offering to tourists with special needs a friendly way to provide useful information related to accessibility, transforms it into a practical and beneficial tool for the local DMO.

ACKNOWLEDGEMENTS

The research presented in this paper is supported by the Romanian Executive Unit for Financing Higher Education, Research, Development and Innovation, the Joint Applied Research Projects PN-II-PT-PCCA-2013-4, under the contract no. 324/2014.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL MULTIDISCIPLINARY PARTICIPATION 10 SCIENCES AND ARTS

REFERENCES

[1] European Commission, Accessible tourism, Available at: http://goo.gl/IbMaVm

[2] European Commission, The European Tourism Indicator System. ETIS toolkit for sustainable destination management, Luxembourg: Publications Office of the EU, 2016, file:///C:/Users/Admin/Downloads/ETIS%20toolkit%202016%20150316%20(1).pdf

[3] European Commission, Europe, the world's No 1 tourist destination – a new political framework for tourism in Europe, Brussels, 2010, COM 352 final

[4] European Commission, Design, Implementation, Promotion and Marketing of Accessible Tourism Itineraries, 102/G/ENT/PPA/13/511, Published on: 26/08/2013, Last update: 23/01/2014, Available at: http://goo.gl/QMwyFW

[5] European Commission, Call for proposals: Supporting competitive and sustainable growth in the tourism sector, Published on: 30/04/2015, Last update: 28/05/2015, Available at: https://goo.gl/V510B2

[6] European Commission, Case studies of accessible tourism destinations, Document date: 22/05/2015, Created by GROW.DDG1.H.1, Publication date: 22/05/2015, Available at: http://goo.gl/NKIk8J

[7] European Commission, European Excellence Awards for Accessible Tourism, Published on: 06/06/2014, Last update: 02/12/2014, Available at: http://goo.gl/yu0l9V

[8] European Commission, European Tourism Indicator System TOOLKIT For Sustainable Destinations, Luxembourg: Publications Office of the EU, 2013, file:///C:/Users/Admin/Downloads/NB3213182ENC_002.pdf

[9] www.dimast.eu

[10] Brătucu, G., Ispas, A., Cismaru, L., Chițu, I., Albu, R., Dincă, G., Baltescu, C., Foris, D., Simon, T., Tudorache, D., Musteata Pavel, M., Oltean D., Demeter, T., Chicomban, M., Gliga, I., Județul Brașov. Profilul destinației turistice, Editura Universității Transilvania din Brașov, 2015, ISBN 978-606-19-0551-5

[11] LonMark International, Case study - Using the inteliLIGHT® street lighting management system, Brasov becomes the first Smart City in Romania, Available at: http://goo.gl/T9Q8N2

[12] https://eu-smartcities.eu

[13] Cismaru, L., Setul de indicatoriDIMAST realizat pe baza indicatorilor si grupelor de indicatori ETIS, livrabil intern in proiectul DIMAST, dec.2015, https://goo.gl/jcEcUA

[14] Ministerul Dezvoltarii Regionale si Turismului, Ordin Nr. 1051 din 3 martie 2011 pentru aprobarea Normelor metodologice privind eliberarea certificatelor de clasificare, a licenţelor şi brevetelor de turism, Monitorul Oficial al României, Partea I, nr. 182 din 15 martie 2011

[15] http://plotto.com/#overview

INDIA TOWARDS A KNOWLEDGE SUPERPOWER

Assoc. Prof. Inna Lazanyuk[1]

[1] Peoples friendship University of Russia, **Russia**

ABSTRACT

The article deals with the issue of the gradual change in the powers' balance between the West and a group of fast developing countries such giants as India and China. The transformation of the international system is manifested in the growing role of regional organizations, fluctuation of the world currencies, as well as the growing influence of such powers as China and India. China no disputing global and regional leader, while the position of India in South Asia and the world is still quite controversial. Considerable attention is paid to the analysis of the poles for the understanding of India's prospects on the way to knowledge superpower. In particular, the comparative analysis of the economic, military, political, civilizational and innovation poles, led to a number of conclusions such as India today can be considered a superpower on the political and civilizational poles in the economic and military poles, there are a number of problems of pending. The Innovation Pole India has made a significant breakthrough in the last 20 years, which gives a huge advantage and a good stepping stone for future economic growth.

Keywords: India, knowledge superpower, innovative development, economic development

INTRODUCTION

For years, it does not abate the wave of talk about the transformation of the international system: the world is becoming multipolar, evidenced not only the growing role of regional organizations (Mercosur, ASEAN, CCASG, SAARC and others.), But the rate fluctuations of world currencies, as well as the growing influence powers such as China and India. However, if China is already being called a superpower, and its regional leader it is not disputed that the position of India in South Asia is still quite controversial [8], [14].

Noticeable attention to the rise of India paid in July 2005, after the conclusion of Delhi nuclear agreement with Washington. This breakthrough is just one of the indicators of fundamental changes that are taking place in India's foreign policy after the Cold War. [7] India put forward the ambitious goal to become one of the leading world powers in the early independence, but at the beginning of the 21st century has made emphasis on the formation of knowledge superpower.

It is possible to carry important signs superpower following:

- possession of characteristics of two or more poles (economic, political, military, etc.);
- the presence of a large and controlled territory;
- balanced and favorable demographic situation;
- social and political stability;
- high economic potential (rapid economic growth, high GDP, the level and quality of life), and others.

For a more detailed analysis and understanding of the real possibilities towards achieving this goal, you need to understand what constitutes a modern India. There are a number of factors promoting and impeding economic growth.

The stimulating factors may include:

- One of the oldest civilization on the planet
- power possessing nuclear weapons (their own launchers, an ambitious space program)
- a country with huge demographic resources
- the state with a strong economy
- one of the high-tech leaders: Bangalore and Hyderabad are recognized as global high-tech centers
- the largest importer of modern weapons

The constraints include:

- huge social stratification
- considerable corruption (a huge part of allocated funds to social programs is stolen)
- two-thirds of India's people live on less than two dollars a day
- example: In 21million Mumbai, more than 60% of the population live in slums without electricity, running water and other comforts of the modern world
- up to a quarter of the population can neither read nor write

Despite the fairly large number of constraints, India is currently approved as one of the leading economic powers, and its economic impact goes beyond the South Asian region.

ANALYTICAL PART

Consider India in terms of different poles. India as an economic pole in the first place should have a high rate of economic growth and a high volume of GDP, which is borne out in practice. In terms of GDP, it is one of the leading countries, took third place in the world on this indicator. With regard to the rate of growth, it is in India not less than that of China, and relatively high, especially when compared to the performance of the leading economies in the world. The growth of the Indian economy exceeds the growth rate of its neighbors in the region, including the main rival - Pakistan (about 3.7% in 2014) and this means that on this indicator, India is the leader in the region.



Fig. 1 GDP growth,%

Source: IMF World Economic Outlook (WEO),
http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/download.aspx

The annual growth rate of GDP on average is 7.2% (Fig. 1), and the GDP at current rates of development puts the country on a par with the ten fastest growing economies in the world. India was able to achieve similar results with the rate of economic liberalization, taken in 1991. Since 1991 reforms, India's economic growth was on average 6% per year, which means, two times faster than in the first 40 years of independence. At the same time, the population has grown by an average of 2% per year, so that per capita income for the year increased by 4%. However, the main problem lies in the fact that only economic growth is not enough to reduce poverty, it is very important to have the high quality of economic growth. In India, a huge number of the population is engaged in agriculture, about 60% of the population (470 million. Pers.), And agriculture itself is only 20% of GDP. So now, when India got rid of food shortages and scarcity of foreign currency (due to the liberalization of trade and increase of export revenues), the country's main task is to ensure the employment of low-skilled staff, as it was in its time in China. Recall economic growth in China was carried out through the development of labor-intensive industries, but in India through the development of capital-intensive industries. The main driving force of the Indian economy have not been industry or agriculture but the services sector, which is already by 2006 accounted for 60% of the Indian economy (Fig. 2).

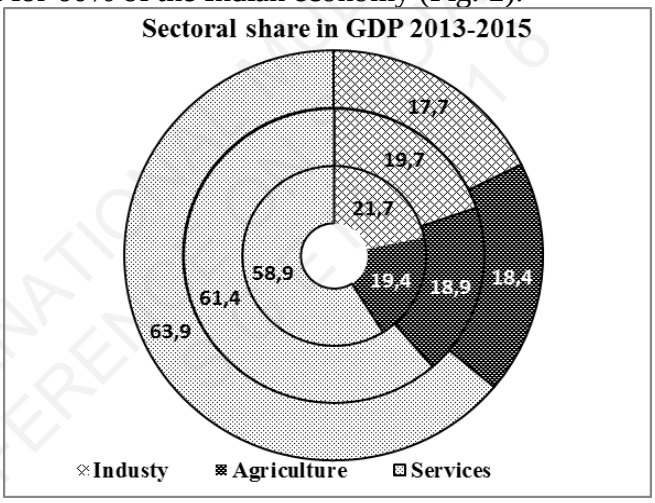


Fig. 2 Sectoral share in GDP of India
Source: **IMF** World Economic Outlook (WEO),
http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/download.aspx

By 2003 exports of software and IT services sector was higher than oil imports, which was important for the country in which the problem of shortage of energy resources was extremely important.

The presence of a huge domestic market and a large number of cheap labor has made India a very attractive place for foreign investment, although, until recently, India did not allow foreign direct investment in the Indian retail sector. However, after the Eurozone crisis and economic problems in the US, Indian IT services consumption slowed down, leading to an automatic slowdown of the Indian economy. The government of India has held an additional stage of reforms in 2012, whereby the retail sector was opened, which confirms the effectiveness of economic policy in India, more responsive to changes. Taking into account how much the developed market relations

have become and how effective were previous reforms, there is no doubt that even for these indicators and the economic growth India can be regarded as an economic pole.

In terms of investment attractiveness of India, it is also one of the global leaders, behind only China and the future trend should continue due to the large domestic market. Many investors believe that India will become a global leader in education, research and development and production of outstanding quality products, as it has long been ranked 3rd place in the scientific potential.

Regarding the political pole, it should be considered the action of India government and the country's position on the international scene, taking into account the relationship with the neighbors in the region. The fact that India has pioneered the Non-Aligned Movement is affecting the foreign policy of the country even today. Currently, India is trying to maintain the balance of power in the region, changing the strategy of the Non-Alignment into Poly-Alignment and strive to become a link between the US, Russia, China and the EU [3]. However, this strategy does not come so much from the pragmatism of India, how much of the uncertainty in its foreign policy and the lack of a clear vision of its place in a rapidly changing world.

The last decade of the XX century marked for the country searching for new ways of interaction with the neighboring countries, as well as major global players. So, in the early 1990s. dialogue has been established with the ASEAN group of countries (in 1995 India became an observer in the organization). In 1997, BIMSTEC was founded - Community countries in South and Southeast Asia, which have a goal of economic integration and trade cooperation between the countries of the region [9], [12]. India seeks to develop cooperation with the countries of the SAARC, abolishing non-tariff barriers for many goods.

The logical conclusion of ongoing foreign policy became part of India in the two associations of regional powers. This group of RIC (Russia-India-China), which is the guarantor of the anti-terrorist security in Eurasia on a par with the SCO, as well as the unification of the IBSA (India-Brazil-South Africa). The fact that India is the member of both similar entities, says the rising role of the country in the processes taking place not only in South Asia but also in other parts of Eurasia, and even on other continents. In 2005, India became an observer State in the SCO (along with his longtime regional rival - Pakistan), and in 2009 finally formalized the BRIC group (from 2011 -. BRICS).

In a report in 2012, "Non-alignment 2.0: India's foreign policy strategy in the XXI century" clearly prescribes the probability of a new bipolar confrontation between the US and China, which will not be equivalent to confront the United States and the Soviet Union. However, this document has not yet secured the support of the public, if only because the results of the ruling period of M. Singh showed how the introduction of elements of balance between the US and China could damage relations both with one and with the other actors of international relations. With the advent of Modi line, the political leadership has become less categorical, more loyal to any scenario of events. Prime Minister himself makes it clear that "all things are possible with sufficient development assistance in India". [6] In addition to these countries, the main opponent of India for many decades remains Pakistan. In the new millennium, the country began to interact more closely than during the XX century. So, in 2005, India and Pakistan have become observer states in the SCO. In 2015, it was decided on the adoption of the two countries of the SCO, the completion of the organization of the new members is planned in 2016 at a summit in New Delhi. Also in 2016 it is scheduled to be held the summit of member countries of SAARC in Islamabad. Such places, of course, serve to

facilitate the interaction between the two long-time opponents. Experts predict that in the next 30-50 years, India will play a key role in regional processes, as well as in matters of an international nature, having settled with many internal contradictions.

According to the report Indian scientists "Non-alignment 2.0: a foreign and strategic policy of India in the XXI century" defines China as a major threat to national security and economic growth, so the main goal - to contain China, mostly through the capacity-building programs of the strategic nuclear forces.

According to the report the national priorities are identified:

- Maritime Doctrine, 2004
- Naval strategy of "freedom of the seas", 2007 (establishment of the rule in the Indian Ocean)
- Creation of 4-largest military forces in the world (more than 10 billion dollars spent on upgrading)
-program construction of naval and ocean-going fleet and a plan by 2020 to enter the five largest fleets in the world.

Given the existence of nuclear weapons, the ability to demonstrate the political will to fight, if necessary, based on the analysis of military doctrines of the country, we can conclude that India is the military pole of South Asia, in spite of the current dependence on imports of foreign weapons.

You can still see the civilizational pole, in which India should have an attractive national project for other countries as well as the significant potential of social and cultural influence. While in this direction China has many more advantages than in India.

At the turn of XX and XXI centuries, in India, high-tech industries was rapidly developing, especially information technology, including - software. Indian achievements in this field give impetus to the development of competitive advantages in other areas, including some branches of engineering and research, particularly biotechnology, medicine, pharmacy, and agriculture. Advancing the development of services, it has become a prerequisite for the creation of an economy based mainly on knowledge.

According to the report based on the World Economic Forum 2015, in the ranking of global competitiveness, India occupies the 55th place among 148 countries (China - at the 28th place, Russia - on the 45th). According to this indicator as "innovation and the knowledge economy development» (innovation and sophistication factors), it is on the 110th place (China - 84th, Russia - on the 55th). To assess the effectiveness of research and development costs we can look at the data of the report "Global Innovation Index - 2013". The index is based on 80 indicators that characterize the innovative development of the country, and is calculated as a weighted sum of the scores of the two groups of indicators: the resources and conditions for innovation (Innovation Input) and achieved practical results of the innovation (Innovation Output). Among 142 countries, India ranks 66th place. For comparison, China in the index - in the 35th place, while Russia - 62 m. For India, which only recently embarked on the path of innovative development and formation of the national innovation system, this result indicates the progressive increase in the high-tech component in the structure of the economy. India ranks 8th in the world in terms of investment in the innovation sector. Since 1995, the volume of investments grew by about 8% a year. India is considered one of the most attractive countries for investment in innovation sphere.

The largest R & D center in India is the Scientific and Industrial Research Council (CSIR), which has a dynamic network of 38 national laboratories, 39 outreach centers, 3 innovative systems, R & D accounts for more than 4600 active researchers. The Council carries out a significant part of the public funding of innovation. Across the country, at the CSIR laboratories operate a business development team to facilitate the commercialization of scientific developments. In addition, the research laboratory created in cooperation with multinational companies such as General Electric, DuPont, Abbot Labs, and others.

A characteristic feature of Indian innovation system is a comprehensive support to small and medium-sized businesses from the government, which is expressed in the provision of financial and technological enterprises base [13]. In India, a well-developed network of various professional associations in the form of clusters, while strengthening relationships with large enterprises, universities that promote training, provision of access to production infrastructure.

In recent years, there are serious achievements in some innovative and high-tech sectors of the economy of India. The fastest growing high-tech industries such as programming, the scope of IT services, as well as the development and production of medicines, biotechnology [4]. Lowest research activity is characteristic for the steel and oil industries.

The most impressive results showed the aerospace industry, in 2008, India put into orbit on their equipment Polar Launch Satellite Vehicle 10 satellites (2 Indian and 8 foreign). This is the 13th launch of satellites in India, but until 2008 the launch was made on foreign equipment. Another major achievement in innovation was launching nuclear submarine INS Arihant. Thus, India has joined a special group of six countries that have managed to develop the creation of nuclear reactor technology for submarines. The positive trend of recent years has been the emergence of the business sector, able to withstand international competition thanks to applied innovation. These companies operate in industries such as car manufacturing, software development, telecommunications and biotechnology. While the global economic crisis has hurt European and US markets, including the automotive industry and the area of ICT, in India this industry has shown growth.

Telecommunications technology industry also showed strong growth. Each year, the growth of the telecommunications sector is an average of more than 100%. India's telecommunications market is one of the fastest-growing markets in the world, after China. India actively introducing innovations in the sphere of telecommunications.

Serious growth despite the global economic crisis has also demonstrated the sector of information technology (IT), the driving force of the economy of India, which shares in India's GDP is more than 6%. The growth of large companies in the IT field as Tata Consultancy Services, Wipro, Infosys, HCL and Tech Mahindra-Satyam was 15-20% for the 2011/12 - 2012/13 [10]. For comparison, the growth of foreign companies such as Microsoft, IBM, Cisco, Oracle, Intel, and Adobe over the same period ranged from 1% to 10%, which was a consequence of the global crisis. In the 2013/14 industry growth of IT and business process outsourcing (IT-BPO) was 10% and brought the country 118 billion dollars of aggregate profits [1]. Export of software and IT services (including BPO, engineering services, R & D) reached $ 86 billion. The domestic market is estimated at 31 billion dollars.

The Indian program "Technology Vision 2020» has identified five main areas of development: agriculture and food processing, infrastructure, including electricity

supply, education and health, information and communication technologies and the "critical technologies" (the nuclear industry, aerospace and defense industry).

In 2012 the 12th Five-Year Development Plan for 2013-2017 was adopted, called "Rapid, sustained global growth." Within the framework of which is expected to shift from the current model of investment in innovation to the innovation model, result-oriented. To achieve this goal requires new research sector with a view to the release and redeployment of human and financial resources. The strategic objective of the program document "Science, technology and innovation policy of India - 2013" declares the integration of science, technology, and innovation for the social and economic development of the country.

To achieve the main objectives of the 12th five-year development plan - the transformation of India into a global Research and Innovation Centre - need to establish a mechanism for sharing experiences and technologies with other BRICS countries. The project UNIDO / BRICS "The partnership between the countries of the BRICS in the field of science, technology, and innovation for the development of small and medium business" is carried out to promote the implementation of innovative technologies in small and medium-sized enterprises. The purpose of this work - to ensure sustainable economic growth by creating the preconditions for the formation of a technological partnership of interested organizations from the countries involved in this project. In the process of its implementation is expected to create a number of innovative infrastructure tools:

- dissemination of technological information;
- training of staff of organizations involved in the project;
- to assist small and medium enterprises in obtaining financing from organizations such as the Global Environment Facility (GEF), development banks, and others.

Participation in the project will enable India to solve a number of problems arising in the way of technological development, improve the efficiency of existing national development programs in the field of science and technology; to obtain current information about the BRICS markets opportunities for mutually beneficial cooperation between small and medium-sized enterprises in the field of science and technology; increase the competitiveness of Indian business through the exchange of innovations and technologies between the BRICS countries; get support for technology transfer, negotiation, search for venture financing, studies of the business environment and the BRICS countries' legislation.

CONCLUSION

India put forward the ambitious goal to become one of the leading world powers in the early independence, but at the beginning of the 21st century has made emphasis on the formation of knowledge superpower.

Advancing the development of services, it has become a prerequisite for the creation of an economy based mainly on knowledge. The rapid growth of high technology industries laid the foundation for competitive advantage in other spheres, including several branches of engineering and research, particularly biotechnology, medicine, pharmaceuticals, and others.

Identified factors lead to the conclusion that India in the foreseeable future will be to compete with China. The number of working population in India is increasing, while in

China the figure may be reduced. India has the well-established democratic institutions, which makes the country less vulnerable in terms of political stability, and also has the functioning capital markets and world-class firms in some important high-tech sectors of the economy. While China as yet to establish both. The progressive direction of the new policy is the integration of scientific, technological and innovation activities with the objectives of inclusive growth.

ACKNOWLEDGEMENTS

The reported study was partially supported by RFBR, research project No 15-06-05146.

REFERENCES

[1] Annual Report 2011-2012, Software Technology Parks of India, URL: http://www.stpi.in/ 625b7f85- c4e8-4ff4-9467-40b146fb145e/ finaldownload/downloadid- 0dc07adb333b8b748397f730b04ce75e/ 625 b7f85-c4e8-4ff4-9467-40b146fb145e/writereaddata/links/3065162286ar1112en.pdf
[2] Indian IT-BPO Industry FY 2012, NASSCOM, URL: http://www.nasscom.in/indian-itbpo-industry;
[3] Kucenkov A.A., Naksalizm: Status and Prospects, India: prospects of modern development. Domestic, regional and global aspects, Russia, 2013, pp 10-11;
[4] Lazanyuk I., Balashova S., Revinova S., Impact Government ICT Strategy on India's Growth, International Journal of Business and Management Studies, 04,(02), USA, 2015, pp 145 – 156;
[5] Lazanyuk I., Formation of Information and Communication Technologies Sector Strategy and its impact on the Indian economy, STI, The organization and methods of information work, VINITI, 2016, № 3, pp 23-30;
[6] Lenchuk R., India's foreign policy strategy during the reign of Narendra Modi, Analytical agency "Foreign Policy" URL: http://www.foreignpolicy.ru/analyses/vneshnepoliticheskaya strategiya-indii-v-pravlenie-narendry-modi/;
[7] Leonova O.G., Global world XXI century: the architecture and the status hierarchy, Moscow State University Bulletin, Series 12, Political Science, 2012,№ 5, pp 58-60;
[8] Lunev S.I., India as one of the new centers of global influence, Comparative Politics, 2012, № 2 (8), pp 90;
[9] Mohan Radzha, India and political balance, Russia in Global Affairs, 2006, № 4, pp 8-24;
[10] National Association of Software and Services Companies (NASSCOM). – URL: http://www.nasscom.in/indian-itbpo-industry.
[11] Powell W.W., Snellman K., The knowledge economy, Annual review of sociology, 2004, pp 199-220;
[12] Semyachkin A.A., India's foreign policy strategy in the XXI century world and politics, URL: http://mir-politika.ru/3584-vneshnepoliticheskaya-strategiya-indii-v-xxi-veke.html.

INFLUENCE OF CSR STRATEGIES ON BUSINESS MANAGEMENT

Assoc. Prof. Dr. Evelina Kamyshnykova
Assoc. Prof. Dr. Oleksandr V.Kalinin

Pryazovskyi State Technical University (PSTU), **Ukraine**

ABSTRACT

The aim of this paper is the research of influence of corporate social responsibility (CSR) policies on companies' business management. Modern development of any business requires development of responsibility, and stimulates the necessity of integration of social policy and corporate strategy, examining financial expenses on the social programs as form of investing in forming of strategic advantage. Consideration of stakeholder interests and needs is the basis of the modern CSR concept, and it is a required component of the system of CSR strategic management. This paper proposes an approach to the classification of CSR strategies based on targeting priority groups of stakeholders. Three types of CSR strategies, including focusing on internal stakeholders, external stakeholders - immediate environment and external stakeholders - local community, is the result of the application of the proposed approach. The implementation of each proposed type of CSR strategy provides programs and long-term cooperation projects with selected priority stakeholder groups to achieve the strategic objectives in CSR field. Companies' business processes are the means to obtain positive economic impact of the implementation of socially responsible policies. Consideration of influence of stakeholder's requirements for business process management in the company on a systematic basis contributes to the improvement of business processes. Basing on an overview of recent theoretical evidence, we conclude that efforts to improving business processes as a result of application of CSR strategies lead to an increase in their efficiency. The increase can be shown in improving certain local operations as well as in the broader consequences like increasing the company's competitiveness and its sustainability.

Keywords: strategy, CSR, management, stakeholder, business processes

INTRODUCTION

In a turbulent environment, which is characterized by an abrupt change in the parameters and higher instability, decisions and actions in the field of strategic management of corporations become more complicated. The shifts, taking place in the environment, change the set of characteristics that are required for sustainable development and achievement of strategic competitiveness of economic entities, and become a major challenge for modern strategic management. This encourages managers to quickly change the development strategy, including the one in the area of socially responsible behavior.

In modern conditions the concept of corporate social responsibility (CSR), which implies a rational account of the needs of different stakeholder groups on the basis of mutual benefit in the process of corporate governance, is regarded as a factor of

increasing competitiveness and sustainable development by business. Implementation of corporate social programs and initiatives is not only an integral part of business activity, but also an essential component of the strategic management of any company focused on long-term development. This determines the relevance of a strategic approach to CSR management and study of its influence on formation and management of company's business processes.

The study of theoretical, methodological and practical aspects of the strategic management of CSR and its position in the business management system are presented in the works of a number of academics and practitioners (for instance, Allen D.B., Andrews K., Castelo B.M., Chase L.A., Colombo G., Gazzola P., Husted B.W., McWilliams, Karim S., Kash R., Kramer A., Porter M.E., Rodrigues L.L., Salazar J.J., Siegel D.S., etc.). Despite the broad consideration of strategic approaches and CSR initiatives in the modern economic literature, the problems of CSR strategies classification and establishment of their relationship with the company's business processes require further research. In this paper we aim to study the influence of CSR policies on business management of the companies.

1. The role of CSR in corporate management

Today business communities increasingly discuss the need to provide CSR. In spite of the fact that in XXI century a greater attention is paid to this problem, the initial phase of studying CSR started in the second half of the past century. Exactly in this period many European and American companies began to implement CSR.

Long time ago tax payment and creation of prosperity for the shareholders (founders) were considered to be the only responsibilities of business. However in the end of XXth century many companies began to apply the aspects of social responsibility voluntarily. Thus, business, inspired only by getting income, was changed by the new philosophy of doing business, which was also orientated on increasing public welfare and declining negative affect for the environment.

The raise of the number of consumers, choosing products made by socially responsible companies, strengthening of trade-union movement for workers rights, became the main reasons, impelling European and American companies to develop CSR principles actively. In addition, in these countries governments passed a number of bills in the areas of labor and environment safety, which induced companies to implement internal CSR policy.

Reasons for the active development of CSR on the modern stage can be different:

- orientation on globalization;
- improvement of reputation and brand strengthening;
- necessity of access to international capital markets;
- strengthening of market positions;
- decline of nonfinancial risks, etc.

In 2002 the consulting company PricewaterhouseCoopers conducted Sustainability Survey among 140 American companies (Table 1, 2). According to the results, the main reasons for the application of CSR practices are non-financial, such as an enhanced

reputation, competitive advantages and industry trends. The financial reasons including an access to capital or cost savings are taken into consideration to a lesser extent.

Table 1 – Top Ten Reasons Respondents Have Adopted Sustainable Business Practices

№	Financial reasons	Percentage	№	Non - financial reasons	Percentage
1	Access to capital	12	6	Customer demand	57
2	Shareholder demand	20	7	CEO/Board Commitment	58
3	Top line growth	37	8	Industry trends	62
4	SRI demand	42	9	Competitive advantages	75
5	Cost savings	73	10	Enhanced Reputation	90

Source: [6]

Table 2 – Anticipated Drivers for Increased Business Emphasis on Sustainability

№	Reason	Percentage	№	Reason	Percentage
Financial reasons			Non - financial reasons		
1	Access to capital	1	1	Employee demand	8
2	Stock performance	14	2	NGO demand	21
3	Top line growth	15	3	License to operate	25
4	Shareholder demand	19	4	Competitive advantages	30
5	Cost savings	36	5	CEO/Board Commitment	34
			6	Industry trends	39
			7	Customer demand	40
			8	Reputation	53

Source: [6]

The issue of studying connection between CSR and companies' financial indexes may be approached from two positions. On the one hand, the more corporate resources are invested in CSR, the less a company can reinvest them for the further development of business. On the other hand, charges on CSR can bring long-term benefits to the companies by declining different risks and increasing productivity. The issue of convergence of the company's social and business goals lies in the strategic field of CSR management.

2. Classification of CSR strategies based on priority stakeholder groups

The strategic planning process is monitored with a large number of social initiatives that can affect the achievement of the company's business goals directly or indirectly. Rangan K. et al. [7] argue that the task of management is in combining various programs, evaluating their benefits or at least establishing a logical connection with the business course. Successful implementation of this role leads to the development of the company's CSR strategy.

Husted and Allen use tools and concepts of business strategy to formulate models of social strategy. According to this, social strategy should include four elements: industry

structure, internal resources, corporate ideology and values, as well as relations with stakeholders [3].

In accordance with the CIMA definition, stakeholders are those persons and organizations that have an interest in the strategy of the organization [1]. Relationships with stakeholders should be taken into account along with other factors (external environment, internal resources and competencies) in the formation of CSR strategies.

The fulfillment of a long-term program of activities to meet the needs and interests of stakeholders - investors, employees, suppliers, customers, local communities, government agencies and local government etc., is considered to be the basis for the implementation of CSR strategies in business practice.

Given the diversity of stakeholder groups and their interests' contradictions, their segmentation and prioritization becomes an important issue. Mendelow's matrix [4] proposes a method to perform stakeholder mapping with allocation level of interest and power as two fundamental characteristics of the stakeholders. According to this matrix, stakeholders with the maximum power and the maximum interest relative to the corporation, refer to the highest priority groups. In terms of the segmentation, this stakeholder category can be classified as strategic.

The cooperation with strategic stakeholders should be long term, carried out on the basis of partnership and mutual benefit. Forming effective relationships with stakeholders is possible through a set of stakeholder management (relationship management with stakeholders), which provides transformation of the stakeholder needs and interests into the corporate objectives and strategy. Building a network of partner, interdependent relationships with stakeholders to achieve common goals is the key to the successful future implementation of CSR strategy. With the absence of the strategic importance of stakeholders the programs and projects of long-term cooperation with them will be considered as ineffective funds spending.

Given the importance of prioritizing stakeholder groups in a system of strategic CSR management, the paper suggests classification of strategies depending on the orientation of the priority stakeholder groups:

1. CSR strategy focused on internal stakeholders.

2. CSR strategy focused on external stakeholders - immediate environment.

3. CSR strategy focused on external stakeholders - local community.

Each of the proposed types of CSR strategy includes a specific set of strategic programs and procedures designed to achieve the strategic objectives in the CSR field by affecting different stakeholder groups through getting relevant benefits (Table 3).

Table 3 - Characteristics of CSR strategies, depending on the targeting priority stakeholder groups

Type of CSR strategies	Purpose	Level of impact	Benefits	Impact on business processes
CSR strategy focused on internal stakeholders	Strategic social partnership	Low / medium strategic and operational	-development of human capital; -formation of brand of socially responsible	- implementation of programs of staff training and development;

		impact	employer; -formation of socially oriented corporate culture; -increase the level of staff loyalty; -reduction of staff turnover	- introduction of safe manufacturing technologies
CSR strategy focused on external stakeholders - immediate environment	Reengineering of the value chain	Medium / high strategic and operational impact	-construction of mutually beneficial partnerships with external stakeholders (partners, suppliers, customers); -rising the operating effectiveness of the value chain "up" and "down"; -rising customer loyalty; - increasing the products and services quality; -rising sales volumes	-implementation of technological solutions to reduce operating costs; -implementation of environmentally sound technologies; - activities on socially responsible marketing; - joint participation in programs of product development
CSR strategy focused on external stakeholders - local community	Strategic competitiveness, sustainable development	Fundamental strategic and operational impact	-formation of «shared value» (for businesses and community); - business integration in community; -providing a sustainable development model; -rising competitiveness and innovation; -reduction of reputational risks; -exit on new markets	-implementation of environmentally sound technologies; - infrastructure development in the regions of presence; - programs in health social investment, education, environment

Source**:** own processing

CSR strategy, focused on internal stakeholders, comprises limited range of tools and programs that have low or medium impact on business processes. The effect of its use is local, associated with the formation of a strategic social partnership between company's staff and owners. However, the joint efforts of the employers and employees' representatives on formation of internal socially responsible policies and practices lead to mutually beneficial results, like the growth of owners' incomes, increasing managers' remuneration in form of salaries and bonuses, the growth of the employee's salary, which ultimately leads to increased levels of business competitiveness.

Reengineering of business processes is the main purpose of the CSR strategy Type 2, that is a strategy focused on the external stakeholders - immediate environment. Reengineering of business processes is a radical redesign of business processes to maximize the profitability of production and economic activities through joint stakeholder implementation of CSR projects and programs in the value chain. It is possible to identify the sources of the company's competitive advantages through the

analysis of the value chain. The formation of CSR strategy, focused on the immediate environment, helps to identify and radically redesign key business processes in order to create the desired competitive advantage and improve the performance of economic entities.

Spreading CSR principles on relations with counterparties provides stability and compliance of their economic behavior with codes of conduct to prevent actions beyond the scope of ethical and legal standards. The company's management is interested in strategic cooperation with groups of consumers, suppliers, strategic partners in areas of responsible consumption, supply chain management, socially responsible marketing.

CSR strategy Type 3, focused on external stakeholders - a local community, is designed to ensure strategic competitiveness and sustainable development of the company and its environment. The reasons of companies' interests in a success of local communities include the fact that the latest both form a potential market for companies' products and services, and are the suppliers of resources. They provide energy, water, logistics, skilled workforce and other resources, ensure a legitimation of corporate activities and comprehensive support of corporate initiatives at the local and state level.

Business entities can use their core business to deal with social problems as a factor of social innovation. In this case social innovations, implemented in the framework of CSR strategy, will contribute to the loyalty growth from the local community, strengthening the brand of socially responsible company, which ultimately leads to the formation of strategic competitiveness of the corporate entity. The purpose of the implementation of social innovation and investment projects in the field of environment, health, education, etc. on the scale of CSR strategy, focused on the needs of external stakeholders, will be considered in terms of rational investment, rather than business altruism.

The correct choice of the type of CSR strategy, depending on the orientation of strategic stakeholders, and its effective implementation can cause a multiplicative effect for the various stakeholder groups, that is ensure the multiplication of business benefits. Thus, the implementation of corporate programs for training and development in the B2C sector in addition to direct benefits, arising from the increase in the degree of employee loyalty and job satisfaction, could lead to an improvement in the quality of customer service. The latter, in turn, will lead to an increase in the degree of employee satisfaction with company's products and services and bring additional profit to owners. As a result of this a scheme "satisfied employees - satisfied customers - satisfied shareholders", that has already become classic, will be realized.

Within each of the proposed type of CSR strategy it is possible to focus on the interests of particular stakeholder groups. Along with three main types of CSR strategies it is possible to apply combination strategies. The content of these strategies' essential elements and features is determined by the orientation at uniting needs and interests of several stakeholder groups simultaneously, which leads to the combined effects.

3. Impact of CSR strategies on business management

The implementation of CSR strategies has a significant impact on business management. There is relationship between the economic results of entities' activity, represented by the strategic benefits of implementing socially responsible policies and the means to achieve these results, i.e. business processes, at the center of the concept of strategic CSR [8].

Business process can be defined in the following way: a chain of logical connected, repetitive activities that utilizes the enterprise's resources to refine an object (physical or mental) for the purpose of achieving specified and measurable results/products for internal or external customers [2]. By this definition, all activities undertaken within the company should be considered as business processes or a part thereof.

Identification of strategic stakeholders, analysis of the depth and scale of their impact, and development of strategic solutions based on set of their needs and interests subsequently will enable companies to improve existing business processes and develop a fundamentally new processes that will benefit all participants in social and economic relations.

Experts recommend to carry out management of complex business processes, using a six-phases scheme [5]:

1. Plan a business process improvement – this stage involves detecting signs of problem to be solved, identifying company's stakeholders, selecting processes to improve, defining scope, goals and schedule of business processes, assembling team to perform business process improvement.

2. Analyze the existing business process – this stage comprises studying business process that needs improvement, interviewing stakeholders, analyzing parameters of their requirements.

3. Redesign a business process – at the stage of redesign it is determined what changes need to be made in the chosen process, a new design's implications based on relevant stakeholder requirements are considered.

4. Acquire needed recourses – this stage involves ensuring the availability of personnel, equipment and other resources needed to implement the planned changes to business processes.

5. Implement the redesigned business process – this stage provides implementation of improved business processes and considering implementation obstacles.

6. Continually improve the business process – the final stage involves measuring the effectiveness of the selected business process and taking needed actions to improve performance.

Substantial filling of control actions on business processes will be differentiated depending on the type of CSR strategy. Application of CSR strategies aimed at meeting the local community's needs and interests has a fundamental strategic and operational impact on the companies' business processes. Due to these strategies the social factor will play a dominant role in the company's business orientation. The implementation of CSR strategy aimed at external stakeholders - immediate environment, will provide medium or high impact on the business processes, depending on the degree of stakeholders being covered by shared values in the value chain. Applying CSR strategies focused on internal stakeholders has a low to medium level of impact on business management. It provides local adjustment of business processes to the needs and interests of internal stakeholder groups, including staff, management and company owners.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

Integrating elements of CSR strategies both in business strategy, and in the company's corporate strategy is the most important prerequisite for the success of the application of different types of CSR strategies.

CONCLUSION

The strategic platform provides a closer connection between social and business objectives of companies. Development of managerial decisions by companies' management should include strategic socially responsible programs and projects.

When forming CSR strategies a wide range of different parameters of external and internal environment, including specificity of the external environment, resource maintenance, the company's scale, a system of corporate values, etc., should be taken into account. The relationships with stakeholders become important as well. From the perspective of strategic management, it is necessary to conduct segmentation of stakeholder groups to identify priority stakeholders that could be categorized as strategic. The paper suggests classification of CSR strategies depending on the orientation of the priority stakeholder groups in a system of strategic CSR management.

The success of the strategy is achieved by integration of its elements into the company's corporate strategy and providing its relationship with key business processes. It has been proved that taking into consideration influence of stakeholder requirements in the management of the companies' business processes allows creating basis for the development of specific activities to improve them. The range of improvements in business processes can vary from continuous improvement to radical restructuring (reengineering) and leads to increasing the company's competitiveness and its sustainability.

REFERENCES

[1] CIMA Official Terminology: The Chartered Institute of Management Accountants, London, Great Britain: CIMA Publishing, 53 p, 2005.

[2] Ericsson Quality Institute, Business Process Management, Gothenburg, Sweden: Ericsson, 1993.

[3] Husted B.W., Allen D.B., Toward a Model of Corporate Social Strategy Formulation, Proceedings of the Social Issues in Management Division at Academy of Management Conference, Washington D.C, USA, pp 1-35, 2001.

[4] Mendelow A., Stakeholder Mapping, Proceedings of the second international conference on information systems, Cambridge, MA, Great Britain, pp 407-418, 1991.

[5] McDonald M., Improving Business Processes, Boston, USA: Harvard Business School Press, 97 p, 2010.

[6] PricewaterhouseCoopers, 2002 Sustainability Survey Report. Date Views: 31.05.16 http://www.pwc.fr//assets/files/pdf/ 2006/redesign/7/pwc_sustainability.pdf

[7] Rangan K., Chase L., Karim S., Why Every Company Needs a CSR Strategy and How to Build It, Harvard Business School Working Paper, USA,Vol. 12-088, 2012.

[8] Werther W.B., Chandler D.B., Strategic Corporate Social Responsibility: Stakeholders, Globalization, and Sustainable Value Creation, 3rd Ed. Los Angeles, USA: SAGE Publications, Inc., 617 p, 2014.

INFORMATION TECHNOLOGY DEVELOPMENT IN THE BRICS COUNTRIES - COMPARATIVE ANALYSIS

Assoc. Prof. Svetlana Revinova [1]

[1] Peoples' Friendship University of Russia, **Russia**

ABSTRACT

Information technology is a factor of sustainable economic and social development for both developed and developing countries. In recent years, special attention is given to developing countries with rapidly growing economies and with significant influence on regional and global markets - the BRICS countries. The article presents a comparative analysis of the development of information technologies and its impact on economic growth; the article also analyzes the similarities and peculiarities of IT development in the BRICS countries and state support for the IT sector in these countries.

The study is based on comparative analysis and correlation analysis of data. The basis for the study is data from the World Bank, the World Economic Forum (WEF), The Total Economy Database, and other public sources.

Information technologies in the BRICS countries are developing quite rapidly, and each country has its peculiarities. It should be noted a significant backlog of India in almost all indexes. In this country, it is necessary to solve the problems with access to technology, at the same time India is a well-known supplier of IT services. Russia has a well-developed infrastructure and a high level of education, but it does not make it the leader in the competitiveness and economic development. China is known as a supplier of IT products, and more and more of it is a product of own R&D. South Africa and Brazil are the leaders in the ratio of preparedness of population and companies to use information technology. In all BRICS countries, government is supporting IT industry. Particular attention is given to export support and tax incentives for businesses to make it invest in education. At the moment, the BRICS countries should analyze the experience and the strengths of each other, to be able to implement joint projects in the IT sector and engage private investment.

Keywords: information technology, IT development, BRICS, economic development, ICT

INTRODUCTION

Nowadays all the countries (developed and developing) focus on the information technology (IT) development. In 2015 IT spending worldwide reached 3,509 billion U.S. dollars. Meanwhile despite the efforts of some countries, the development is uneven. A lot of scientific papers note the fact, that IT is one of the key drivers of growth in the developed economies (e.g., Colecchia and Schreyer [1]; Bloom, Sadun, and Van Reenen [2], Dale W. Jorgenson, Khuong Vu [3], [4], etc.).

Recently particular attention is given to developing countries with rapidly growing economies and significant influence on regional and global markets - the BRICS countries. Brazil, Russia, India, China and South Africa occupy about 30% of the territory of the planet, and its citizens are 40% of the world's population. BRICS countries now focus on IT both at the national and international level. In October 2015 there was a

meeting of ICT ministers of the BRICS countries. The Communiqué of the meeting says that «The Parties acknowledged that Information and Communication Technologies (ICTs) have become a key factor for sustainable economic and social growth and development. ICTs are of increasing importance in governance, business, and social activities and their impact will increase in the future. There is a common agreement on the importance of ICTs as essential tools for the growth and advancement of developing countries. Expansion of cooperation in the field of ICTs should, therefore, ensure universal access and be based on an understanding of the needs of government, business, and society». [5]

The BRICS countries are willing to cooperate in IT sector and implement joint projects, despite a certain misbalance in the development of information technologies. That is why issues of IT development in the BRICS countries, as well as its relation to economic growth, are of particular interest. In this article, the term IT development includes both the production of goods and information technology services and usage of ICT by population and companies. The basis for the study is data from the World Bank, the World Economic Forum (WEF), The Total Economy Database, and other public sources. The study is based on comparative analysis and correlation analysis of data.

COMPARATIVE ANALYSIS

Today in all five BRICS countries the development of information technologies is actively supported by the state.

India has implemented two key state projects MakeinIndia and DigitalIndia, the purpose of which is the development of the IT industry. These projects reduce the outflow of qualified specialists and contribute informatization. The government supports some favorable conditions for IT-companies: it supports organization of industrial parks, tax exemptions, supports the labor market, innovation development, etc. IT exporting companies are fully exempt from income tax for the first five years, in the next five years the tax is reduced by 50%, and in the case of reinvestment in the core activities, the tax reduction of 50% will remain for the third five-year period. IT-companies are exempted from property tax for five years, and the sales tax - up to 10 years. A reduced rate of tariffs for electricity and other resources are applicable for IT-companies, as well as the preferences in the infrastructure construction and the recruitment of specialists in IT parks are provided. Tax incentives are applicable for all companies regardless of size or ownership. It should be noted that much of the administration of industry is given to non-governmental association NASSCOM, which is responsive to any changes. [6]

Reforms, initiated in the 1980s became an impulse for the development of IT sector in China. It concerned the changes in all the sectors. In 1986 the "Plan 863" was implemented - a program of long-term catch-up development of high technologies in 7 key areas, including information technology. The year 1988 is remarkable for the program "Torch", aimed at the new technical developments in manufacturing. Industrial areas of science and technology parks were created. Great attention was paid to reforms in the education of highly qualified specialists. An important factor influencing the development of IT-industry in China is also the state support of attracting immigrants. Every year the number of IT-specialists in China grows for about 350 thousand (including returned high-level professionals from the US and Europe). There is also a liberal tax policy. In the first two years (until 2017) the international IT-companies located in China are fully exempt from income tax, and the next years the tax is 15% instead of 30%. For

local business income tax is also reduced to 15%. In addition, a refund takes place here. Small and medium-sized businesses have significant advantages. The state supports local companies, providing them with government contracts for the creation of e-government and organization of governmental IT-infrastructure.

State support is also provided to the IT industry in Brazil. In 2001 the "Law of Informatics" was signed. It provided tax credits to companies, which invest in research and development of new technologies, this law also adopted a program of development of computing classes in schools. The Brazilian government is using information technology to promote and develop their production, support Internet portals for procurement. In 2005 the implementation of e-government began. There are tax incentives: exemption from tax on property for companies in technological parks; a decrease of social tax for exporting companies for 50%; tax return on profit of the company that should stimulate spending for staff training. For IT exporting companies (over 60% of export revenues) some social taxes are abolished, the tax on industrial products is minimal. The government supports IT specialists, subsidizing 40% of the salaries of workers of high technologies industry and 60% of the salaries of workers in industrial parks. Largest public and private banks provide preferential credit conditions for IT-companies.

In South Africa, national program "Innovations on the way to a knowledge-based economy" was adopted in 2007. It indicates that the government is aware of the importance of ICT for innovative development of the country. National R & D Strategy provides the creation of an enabling environment for the promotion of IT and innovation. The state support of the development of information technology is not as significant as in other BRICS countries, but income taxes reduction is also provided here. Since 2012 a tax deduction of 150% of the expenditures on innovation is provided, which includes all costs, aimed at the internal R&D-activities and the implementation of external innovation projects.

The state support of IT-industry in the Russian Federation is consistent with global trends: there are tax credits, industrial parks, innovation centers, venture capital funds with state participation, society and government are becoming computerized. The Russian government has set the strategic goal to become a leader among the countries on the development of IT. The "Strategy of development of the information technology industry in the Russian Federation for 2014 - 2020 years and until 2025" was adopted, an action plan ("Roadmap") for "Development of the information technology industry" was approved, the state program "Information Society (2011 - 2020 years) is implemented" [7]. Nowadays in Russia there are benefits on insurance premiums for employees of IT-companies: the rate is 14% instead of 30%. There are also some benefits in income tax and value added tax. One of the tasks set by the government is a reduction of the outflow of highly skilled professionals and returning them back.

The analysis allows saying that the state support of IT in the BRICS countries has already led to certain results. According to The Global Information Technology Report 2014 the ranking of the BRICS countries in terms of Government success in ICT promotion is as follows: India - 29th place (1 among BRICS countries), China - 37 (2), Brazil - 88 (3), Russian Federation-100 (4), South Africa - 109 (5) [8]. Some lag of Russia and South Africa is due to the fact that the governmental measures were taken later than in other countries.

Consider now some indicators that reflect the achievement of the BRICS countries. The World Bank identifies such indicators as ICT goods exports, ICT goods imports, ICT service exports, a number of Internet users (per 100 people). Fig.1 shows that the main contribution to the ICT goods exports of BRICS countries brings China. China is well-known electronics supplier. At first, China was just assembling products, but now, thanks to government policy, China is developing its high-tech products. At the same time, there is a general downward trend in growth; the exceptions are Russia and South Africa.

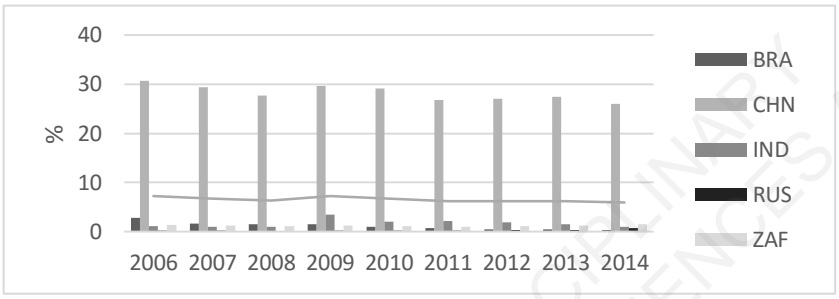


Fig.1. ICT goods exports in BRICS, 2006-2014 (% of total goods exports)
Source: World Development Indicators, http://data.worldbank.org/indicator/

Variation of the indicator of ICT goods imports over the last eight years in the BRICS countries is insignificant (Fig.2). Here China is the leader, although the gap between the countries is not so big.

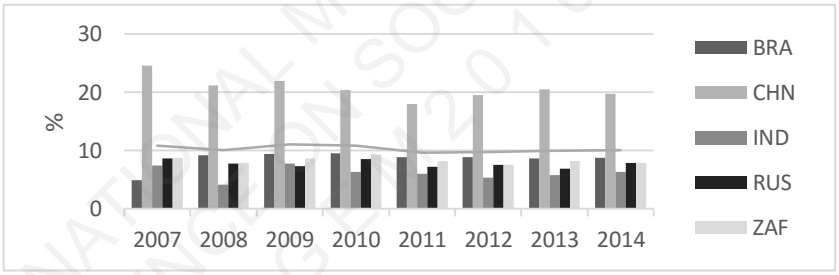


Fig.2. ICT goods imports in BRICS, 2006-2014 (% total goods imports)
Source: World Development Indicators, http://data.worldbank.org/indicator/

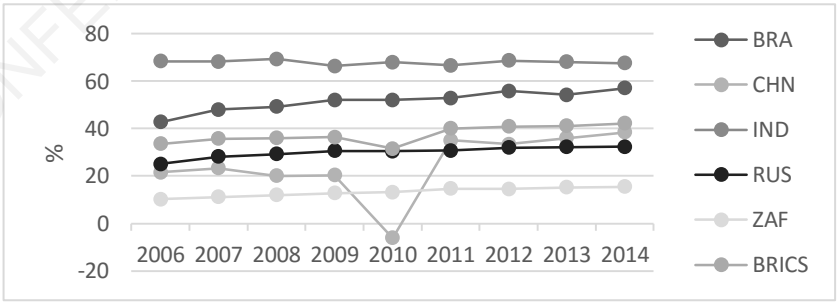


Fig.3.ICT service exports in BRICS, 2006-2014 (% of service exports, BoP)
Source: World Development Indicators, http://data.worldbank.org/indicator/

The leader in IT services export is definitely India (fig.3). Indian specialists are well-known worldwide. It should be noted that other BRICS countries show an increase in this indicator, especially Brazil. Data show that the measures taken to promote IT exporting companies are giving the results.

Today an increasing role in the creation of innovation and transition to innovative development play a computer network and in particular the World Wide Web. The

Internet is already a major source of information for society. The use of information technology and the Internet as a means of communication between public authorities, legal entities, and individuals, leads to qualitative changes in almost all spheres of life. It leads to the emergence of new opportunities for the development of all businesses, maximizing productivity, and as a result the efficiency and the competitiveness of the economy. Therefore, access to the Internet is one of the key objectives for all countries. As for the BRICS, as it was mentioned above, it is home to about 40% of the world population. Informatization and internalization for such densely populated countries as China and India, or countries with a large share of the rural population, will solve many economic and social problems.

According to the data of The World Bank the highest Internet penetration is observed in Russia, where 70 out of 100 people use the Internet (fig.4). This indicator is increasing in all BRICS countries, but there are remaining problems in India where 2/3 of its 1 billion populations are not provided with access to the network – 18 out of 100 people use the Internet.

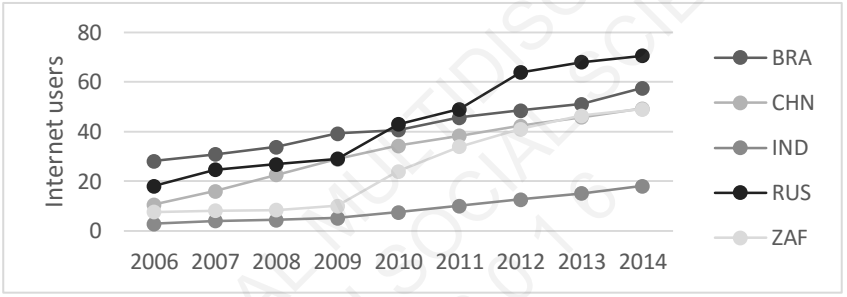


Fig.4. Internet users (per 100 people) in BRICS
Source: World Development Indicators, http://data.worldbank.org/indicator/

In the last decade, e-commerce is rapidly evolving throughout the world. For BRICS countries e-commerce may be one of the factors for the revitalization of the retail trade, for an increase of competitiveness and economic development. Top 10 countries in e-commerce turnover in the world is as follows: US - 419 bn $; China - 328,4 bn $; UK - 142,3 bn $; Japan - 136,7 bn $; Germany - 84,2 bn $; France - 67,8 bn $; Australia - 35,7 bn $; Canada - 23,9 bn $; Russia - 20,5 bn $; S. Korea - 20,2 bn $ [9]. Thus, 2 out of the 5 BRICS countries are included in the top 10 countries. The growth of e-commerce in the BRICS countries in 2014 amounted to 57%, but the e-commerce market in the BRICS countries is very uneven. The main indicators are presented in Table 1.

China is the largest e-commerce market by the volume among BRICS countries and all over the world. This is due to the rapid penetration of the Internet, as well as the popularity of online shopping. In the second place, but with a big lag is the e-market of Russia. It is one of the largest in Europe, due to the number of Internet users. The third among BRICS countries, 11 in the world, and the first in the region is the e-market of Brazil. The fourth place takes India, where the market growth can be expected with an increase in the number of Internet users. South Africa market is the smallest, but the share of e-commerce in GDP is above Indian rate, and not far behind Brazil and Russia. It should be noted that the population of South Africa is ready to commit quite expensive purchases on the Internet.

Table 1. Main indicators of e-commerce in the BRICS countries

	E-commerce Turnover, bn $, 2014 (F)	E-commerce Turnover Growth, %	Share of e-commerce in GDP, %	Online spending, $
Brazil	20,9	12,6	0,6	513
China	537,9	63,8	2,68	1087
India	12,1	13,6	0,43	436
Russian Federation	23,9	16,1	0,74	857
South Africa	2,7	16,6	0,51	1039

Source: Ecommerce Foundation. URL http://www.ecommercefoundation.org/

In modern scientific literature, the driver of economic growth is often considered to be Total Factor Productivity (TFP) and GDP per capita is most commonly used to assess the economic development of the country. TFP growth is linked to technological progress, and with increasing efficiency, as a result of the introduction and usage of information technology. A correlation analysis between the Growth of Total Factor Productivity and factors of IT development in the BRICS countries was made. Data on the Growth of Total Factor Productivity were taken from The Conference Board Total Economy Database [10]. Correlation analysis showed that the greatest relation between the Growth of TFP and the considered above factors shows Brazil (among the BRICS). All the factors show a correlation level above the average. The highest correlation is observed with the ICT service exports (> 0.9), which can be the result of governmental support to IT exporting companies. The growth of TFP in China shows a high correlation only for ICT goods exports and High-technology exports, which confirms the position of China, as a manufacturer of high technology products. Russian Growth of TFP is not strongly correlated with the factors of IT development. The average correlation rate (> 0.7) have such factors as ICT goods imports and ICT service exports. The greatest influence on the Growth of TFP of Russia has the purchase of equipment and the export of information and technology services. As for India and South Africa, the correlation analysis showed a weak and very weak relation between the Growth of TFP and factors of IT development. Correlation analysis between GDP per capita growth and IT development factors in the BRICS countries, despite the expectations, showed that there is almost no direct correlation between them. The largest correlation rate between these factors is in Russia, the lowest - in Brazil. Nevertheless, it can be assumed that further development of information technologies in the BRICS countries will significantly increase the Total Factor Productivity – that can be confirmed by the experience of developed countries. Meanwhile, a TFP growth may give a boost to the economic growth required for countries with developing economies.

The development of information and communication technology has an impact on the competitiveness of the country. Calculating the rating of competitiveness (Global Competitiveness Index, GCI), which is regularly conducted by the World Economic Forum (WEF) takes into account the factors of development of information and communication technologies and innovation activity of enterprises. The BRICS countries rating on GCI is as follows: 1 - China (28 out of 140), 2 - Russia (45 out of 140), 3 - South Africa (49 out of 140), 4 - India (55 out of 140) 5 - Brazil (75 out of 140). China is the leader for the recent years. WEF takes into account the country's Technological readiness, i.e. how companies use the ICT. Here the leader is South Africa (50), followed by Brazil (54) Russia (60) China (74) and India (120). Another factor related to information technology and influencing the country's competitiveness is Infrastructure. Infrastructure

presents availability of transport and digital networks; it considers the number of internets and mobile phone users. Regarding Infrastructure indicator, BRICS countries are 1 - Russia (35), 2 - China (39), 3 - South Africa (68), 4 - Brazil (74), 5 - India (81). [11]

Another well-known index to assess the development of information technologies - ICT Development Index (IDI). This is a composite index which is calculated by the International Telecommunication Union. It takes into account 11 indicators, such as access to and use of ICT, practical awareness of population of these technologies, etc. For this indicator, the BRICS ranking in 2014 is as follows: 1 - Russia (45), 2 - Brazil (61), 3 - China (82), 4 - South Africa (88), 5 - India (131). [12]

Networked Readiness Index (NRI) also provides an opportunity to assess the level of IT use in the country. It is a composite indicator of the country's economy readiness to the use of information and telecommunication technologies to accelerate development. The rating is as follows: 1 - Russia (41), 2 - China (62), 3 - South Africa (75), 4 - Brazil (84), 5 - India (89). [13] These data show that although the IT leadership belongs to Russia, it is still inferior to the competitiveness rate of China.

CONCLUSION

The study showed that all of the BRICS countries are concerned in the development of information technologies, but this development is uneven. Each country has its peculiarities. It should be noted a significant backlog of India in almost all indexes. In this country, it is necessary to solve the problems with access to technology. At the same time, India is a well-known supplier of IT services. Russia is leading in the development of infrastructure, it is also a leader in the network readiness rate of the country, and has a high level of education. Nevertheless, Russia is not the leader in the competitiveness and economic development. China is known as a supplier of IT products, and more and more of it is a product of own R&D. South Africa and Brazil are the leaders in the ratio of preparedness of population and companies to use information technology. All BRICS countries (especially China and Brazil) pay great attention to the tax stimulation of business to encourage its investment in education, as well as export support measures. It should be mentioned that the state support of IT industry in South Africa is less significant than in other BRICS countries.

It can be stated that over the last 20 years all the BRICS countries were promoting ICT industry, informatizaton, the use of information technologies by the population, private companies, and public organizations. This corresponds to the trend observed in the developed countries. Nevertheless, the relationship between IT and economic growth among the BRICS countries is not significant yet. However, the spread of information technology and penetration of the Internet, growing education level and qualified personnel rate make prospects for economic growth, increase the competitiveness of countries and the improve living standards in the BRICS countries. BRICS countries are planning joint projects; it has already launched a Russian-Chinese project of promotion of Russian goods on the Internet through Alibaba. Recently, Alibaba Group founder Jack Ma proposed to establish an electronic road for entrepreneurs, "Silk Road" that would link Asia, Europe, and the United States on the Internet.

The study showed that all the BRICS countries are aware of the role of IT in economic development and its competitiveness. Due to the fact that each country has its peculiarities, the analysis of the experience of each country, with the use of its strengths

will allow developing IT within the country itself, and also create and implement joint projects in the IT industry.

ACKNOWLEDGEMENTS

The reported study was partially supported by RFBR, research project No 15-06-05146.

REFERENCES

[1] Colecchia A, Schreyer P. ICT Investment and Economic Growth in the 1990s: Is the United States a Unique Case? A Comparative Study of Nine OECD Countries. Review of Economic Dynamics 5: 408–442, 2002. URL http://ideas.repec.org/a/red/issued/v5y2002i2p408-442.html

[2] Bloom N, Sadun R, Van Reenen J., Americans Do IT Better: US Multinationals and the Productivity Miracle. American Economic Review 102: 167–201, 2012. URL http://ideas.repec.org/a/aea/aecrev/v102y2012i1p167-201.html

[3] Jorgenson, D and Vu, K M, Information Technology and the World Growth Resurgence, German Economic Review, Vol. 8, Issue 2, pp. 125-145, 2007.

[4]. Jorgenson D., Vu K. M., Projecting World Economic Growth: The Contribution of Information Technology, The Review of Socionetwork Strategies, Vol. 3, pp. 35-49, 2009.

[5] Communique of BRICS Ministers of Communications on the outcomes of the meeting on "Expansion of Cooperation in the Field of Communications and ICTs". URL http://www.minsvyaz.ru/ru/

[6] Lazanyuk I., Balashova S., Revinova S., Impact Government ICT Strategy on India`s Growth. International Journal of Business and Management Studies, CD-ROM. ISSN: 2158-1479: 04(02):145–156, 2015.

[7] Revinova S., Balashova S., Lazanyuk I. ICT in Russia: the Current State, Government Support, and Main Trends. International Journal of Business and Management Studies, CD-ROM. ISSN: 2158-1479: 04(02):127–143, 2015.

[8] The Global Information Technology Report 2014. URL www.weforum.org

[9] BRICS B2C E-commerce Report 2014. Ecommerce Foundation. URL http://www.ecommercefoundation.org/

[10] The Conference Board. 2015. The Conference Board Total Economy Database™, September 2015. URL http://www.conference-board.org/data/economydatabase/

[11] The Global Competitiveness Report 2015–2016. URL http://reports.weforum.org/global-competitiveness-report-2015-2016/

[12] Measuring the Information Society Report 2014. URL http://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2014.aspx

[13] Information technology report 2014. URL http://reports.weforum.org/global-information-technology-report

INFRASTRUCTURE: REDEFINING APPROACHES TO THE CONCEPT AND CLASSIFICATION

Assoc. Prof. Dr. Irina Baskakova

Ph. D. student Nikita Malafeev

Ural Federal University, Yekaterinburg, **Russian Federation**

ABSTRACT

The growing demand of the world economy for infrastructure-related capital increases the practical importance of its academic research. However, there are significant differences in the understanding of the term "infrastructure" and its classification. Consequently, the results obtained by different researchers are often incomparable. All this requires once again refer to the concept of infrastructure. The purpose of this paper is to formulate a flexible framework for the concept of infrastructure, to examine the presence of the concept's *core* among the research for the last 50 years and to identify the ways to create infrastructure classification system, following the same logic of flexibility. Achieving this purpose allows, on the one hand, adapting the concept to specific research goals and objectives and, on the other hand, making the results comparable. The authors emphasize to the importance in advancing the understanding of how to ensure the usefulness of economic research for the formulation of economic policy in terms of infrastructure.

Keywords: infrastructure, classification of infrastructure, flexible framework, public capital, social overhead capital.

INTRODUCTION

Infrastructure development remains a pressing problem for all countries in the world for quite a long time. The explosive growth in demand for infrastructure is primarily due to acute lack of capacity of the existing infrastructure facilities. These facilities cannot adequately maintain the current level of economic activity. Today most countries face the challenge of chronic underfunding of infrastructure capital, which accounts for 20% in developed countries and for 40% and higher in developing countries [12]. PWC and the IMF estimates that the annual need for investment in infrastructure today is from 3% of GDP for developed countries, up to 9% (North Africa) and even up to 12% (South Asia) for developing countries, i.e. the world average is about 4.5% of GDP [12]. In turn, McKinsey estimated that the total value of the infrastructure capital in the economy should not be less than 70% of the gross domestic product of the country. For instance, in 2012, the needs for infrastructure investment in the world was 3.55 trillion dollars, while actually it was only 2.5 trillion dollars spent [12]. The bulk of investment in infrastructure (more than 65%) is done by government, but its financial capacity is not unlimited, and the annual infrastructure needs up to 2030 will only steadily increase. All this together defines the special interest of government agencies in infrastructure research and its impact on economic growth, economic development, poverty reduction, reducing social inequality and regional disparities, improving economic efficiency and economic security, etc.

SCIENTIFIC CONFERENCE ON SOCIETY, SCIENCE AND ARTS

As an object of research, infrastructure started its path in economic science in the period of industrialization in the late XIX - early XX centuries, and came in its avant-garde together with Keynes macroeconomic revolution and later cemented its place along with the postwar theories of economic growth and economic development. Today there are a plenty of research papers, which incorporate infrastructure in different theoretical and empirical constructs. A considerable part of them was a direct response to a demand from the government. However, is it possible to compare the results of the papers? Which factors impose constraints on the comparability? Obviously, these factors are determined by differences in approaches to definition and classification. Nevertheless, if is there such a part of the concept of infrastructure which is a tradeoff for the researchers, i.e. *the core of concept*, which is out of discussion? This is not a simple question to answer. Moreover, only few research papers cover this particular issue and other issues above. Among the rare exceptions, we can highlight the following articles: W. Buhr [3] and G. Torrisi [11].

Infrastructure as an object can be seen under a wide variety of research perspectives. We see the importance in advancing the understanding of how to ensure the usefulness of economic research for the formulation of economic policy in terms of infrastructure. The purpose of this paper is to formulate a flexible framework for the concept of infrastructure, to examine the presence of its *core* among the research for the last 50 year and to identify the ways to create infrastructure classification system, following the same logic of flexibility. Achieving this purpose allows, on the one hand, adapting the concept to specific research goals and objectives and, on the other hand, making the results comparable.

Structure of the paper is as follows. In Section 1, we briefly consider the history of the concept of infrastructure and, in detail, examine different approaches for the formation of this concept. In Section 2, we focus on the issues of infrastructure classification and propose a way to create flexible and adaptive classification, which may potentially solve the comparability issue of results of variety of research papers.

1. THE CONCEPT OF INFRASTRUCTURE: RETHINKING THE EXISTING APPROACHES TO THE FORMATION

The concept of infrastructure started its development from fragmented notions of what we today understand by the infrastructure facilities in the economists' works of the XVIII-XIX centuries, and reached its first evolutionary milestone in the term "social overhead capital". The latter became one of the results of work of pioneers of the theory of economic development like A. Hirschman [6]. He defined social overhead capital as basic services without which primary, secondary and tertiary productive activities cannot function. In the late 1940s, some economists began to use the military origin term 'infrastructure' instead of the term "social overhead capital", in order to avoid confusion with social welfare facilities such as hospitals and schools. The leading role of the state in the formation of the capital stock of infrastructure became the reason of introduction of the term 'public capital', which refers to infrastructure facilities and related public investment. This term was extensively used in many scientific papers, published in the 1990s, which were written in response to the pioneering work of Ashauer [1]. However, the process of mass privatization of state assets along with the development of public-private partnerships became the main reason of the requirement for a new concept. It should be broader than 'public capital', but narrower than the

'infrastructure'. In our opinion, the concept of infrastructure capital fits perfectly. We should note that different authors relate the above concepts in different ways, often using these terms as synonyms, but, in our view, such contraction of the concept of infrastructure is unnecessary and misleading.

Infrastructure as an economic concept does not have a universal definition, which may be considered as a standard for most researchers. Virtually every major study on the problem sets its own framework of what should be understood under the term "infrastructure". Constructs (e.g., infrastructure and superstructure, see J. Tinbergen's article [10]), proposed by researchers, frequently lack a theoretical grounding. W. Buhr [3] rightly points out that this unsatisfactory situation is a consequence of the need for simultaneous realization of three analytic objectives: 1) the formulation of a concept for the term "infrastructure"; 2) the incorporation of theoretic approaches (for example, the theory of public goods), and 3) the description of the reality of infrastructure provision. In practice, this is not a trivial or even impossible task for the average researcher.

In economic science, there are two approaches to the definition of the concept of infrastructure. The first approach characterizes the infrastructure by three attributes. The first attribute is a *technical* (infrastructure is a capital good, i.e. provided in a large number of units, originated by investment expenditure and characterized by long duration, technical indivisibility and a high capital-output ratio). We should note that some technical features may be *not applicable* for intangible assets, which are the part of institutional or soft infrastructure. The second one is an *economic* (infrastructure is a source of external economies of scale and externalities, a public good or sometimes a merit good). The third attribute is an *institutional* (infrastructure goods and services are the object of the public provision and the public control). This approach, according to G. Torrissi [11], is a prevalent and was developed in papers of authors such as A. Youngson [13], R. Jochimsen [7]. Alternatively, a functional approach, grounded in the work of W. Buhr [3], is based on the idea that the creation of the social product is the result of the interaction of economic agents and the contribution of each agent is defined by the provision of infrastructure. In other words, the activation and mobilization of the potentialities of economic agents are inherent characteristic of the infrastructure. Therefore, each type of infrastructure can be defined according to its effect (e.g., W. Buhr [3] distinguishes three types of infrastructure: household-oriented, enterprise-oriented and market-oriented). Despite the differences in approaches to the definition, most researchers show mutual understanding of what should be considered as the *core* of the concept of infrastructure: roads, railways, utilities, waste disposal, airports, harbors, docks, etc. All these facilities are crucial for the comprehension of what infrastructure means for the economy and its operation and development. Other facilities as hospitals and schools are not less important, but their operation is completely dependent on the capacity and uninterrupted operation of the facilities mentioned above. Therefore, such social facilities represent the so-called *shell* of the concept of infrastructure.

We consider institutional attribute, especially property rights, as one of the most important among others. This attribute can be used as the criteria (along with the tangibility of assets), which helps to determine the relationship between the following concepts: infrastructure, public infrastructure, infrastructure capital and public capital.

2. CLASSIFICATION OF INFRASTRUCTURE: PROBLEMS AND SOLUTIONS

Infrastructure classification also has no common approach to implementation. As well as in the case of definition of infrastructure, its classification is often based on the objectives of the theoretical and/or empirical research and on principles that are shared by other researchers. The classification also can be approved by a country's statistical agency, as well as it can be unique result of a particular researcher.

For many research papers, classification criterion is the functional nature of certain infrastructure facilities. The rest of the research papers selects the features of infrastructure as a classification criterion (network structure or a 'point' object, tangible or intangible assets). We should point out that the features and functions in this section are *only applicable* for the infrastructure as the whole system in comparison to the attributes and the functions of a particular infrastructure facility or even asset in the first section. However, every researcher interprets these criteria in its own way, highlighting certain functions or features of infrastructure. The lack of a common understanding of the classification criteria is a serious challenge for researchers, particularly on the issue of comparability of results. It affects cross-country analysis of the level of infrastructure provision. Therefore, the common principles of gathering of national accounts statistics data is the only help for researchers (which is true, for example, for OECD countries). However, it is not always possible for developing countries and/or their administrative units.

Table 1 contains an analysis of infrastructure classifications, taken from the studies published over the past 50 years. Some types of infrastructure from various classifications are almost identical due to its composition of facilities. For example, roads are part of such type of infrastructure as economic, material, core, network, main, basic, hard. Moreover, according to the goals and objectives of the study, the researcher may take into account the diversity of infrastructure facilities, or may focus only on the most productive part of infrastructure. In the first case, it may be done for a comprehensive look at infrastructure as a research object (e.g., R. Jochimsen [7], G. Vaughan-Morris [12]) or for an empirical assessment of the productivity of different types of infrastructure (e.g. V. Popov [8]). In the second case, it may be due to the author's desire to simplify the procedure of empirical estimation (e.g. Aschauer [1]).

The classification presented in the paper of G. Vaughan-Morris [12] meets both criteria and is quite successful attempt to implement the so-called combined approach. This classification is the most expanded among the presented infrastructure classifications, because it divides hard infrastructure into subtypes. The author also provides a further division of hard (excluding industrial) and soft infrastructure in the functional and non-functional, and strategic and infrastructure of national importance. Such subtypes can better reflect the features and functions of certain infrastructure facilities.

Table 1. A comparative analysis of different approaches for classification

Author	The infrastructure types and its composition	Criteria for classification
N. M. Hansen [5]	1. Economic (transport: roads, naval, highways, airports; networks: sewer, water supply, gas, electricity; commodities transfer, irrigation, etc.) 2. Social (schools, hospitals, green areas, public safety, waste disposal)	function (*economic*: direct support of productive activities; *social*: increasing the social comfort, action on the productivity)

Table 1. A comparative analysis of different approaches for classification

R. Jochimsen [7]	1. Personal (i.e. human capital) 2. Institutional (the norms, institutions, procedures, i.e. economic constitution) 3. Material (transport, utilities, public services, health and educational facilities, telecommunications, etc.)	function (*personal*: determining the quality of the economic agents' values; *institutional*: social integration of values; *material*: fulfilment of physical and social needs)
D. Aschauer [1]	1. Core (transport: roads, highways, airports, public transport; networks: electricity, gas, water, sewerage) 2. Not core (residual component)	function (*core*: sustainable operation of an economy)
D. Biehl [2]	1. Network (roads, railways; networks: water, electricity, telecommunications) 2. Nucleus or 'Point' (schools, hospitals, museums)	feature (structure, necessity of human capital involvement for facility operation)
J.-E. Sturm, J. Jacobs et al. [9]	1. Main or Basic (main railways and roads, canals, harbors, telegraph, dikes, drainage, land reclamation) 2. Complementary (light railways, public transport, networks: gas, water, electricity, local telephone)	function (basic: maintaining the economy of the whole country; complementary: maintaining the economy of the administrative unit)
Di Palma, Mazziotta et al. [4]	1. Material (transport, water supply and electricity networks) 2. Immaterial (centers for innovation research and education)	feature (tangible and intangible assets)
V. Popov [8]	1. Basic (transport, communications, utilities: electricity, gas and water) 2. Social (public administration, education, health, social security, services: arts, culture, sports, housing) 3. Market (wholesale and retail trade, catering, logistics and distribution, procurement, financial services, etc.)	function (basic: maintaining the sustainability of the whole economy; social: maintaining the social sustainability; market: maintaining the market structures sustainability)
G. Vaughan-Morris et al. [12]	1. Hard infrastructure: a. Economic (transport facilities, utilities, flood defenses, waste management and telecommunications) b. Social (social housing, health, educational and green infrastructure) c. Industrial (facilities required in mines or the interconnecting roads) 2. Soft (government buildings, laws, rules, systems of order, health, etc.)	Dual criteria may be applied: a. function (hard: maintaining and operation of the whole economic system; soft: maintaining of the economic, health, social standards); b. feature (hard: primarily physical assets; soft: primarily institutions, i.e. intangible assets)

From our point of view, the algorithm of formation of infrastructure classification consists of the following steps. *The first step* - it is reliance on existing country-specific statistics data in order to be able to adequately carry out empirical research. If necessary, the researcher must perform manual adjustment of data to a specific standard (for example, the format of the OECD statistics). *The second step* is to use a combined approach based on both criteria (i.e. features and functions of infrastructure). Firstly, it must ensure a compromise of various points of view on the classification of the infrastructure. Secondly, the types of infrastructure generated by this approach should reflect the dual nature of the infrastructure, i.e. emphasize the importance of both the attributes and the functions they perform. For instance, the economic infrastructure frequently has a network structure. In contrast, the social infrastructure is comprised of 'point' objects that cannot operate without human capital of personnel (in other words, these objects cannot be considered as infrastructure facilities in isolation from their

staff). *The third step* is to ensure the expandability of infrastructure classification, i.e. the division of types into subtypes on a particular criterion. Firstly, a larger number of subtypes is the opportunity to discover previously unexplored aspects or revise the issue from a different angle. Secondly, it brings adaptability, i.e. the researcher can include or exclude certain subtypes based on the purposes and objectives of the study.

The implementation of these three steps - the way to create flexible and adaptive classification system, which has the potential to solve the comparability issue of results of contemporary infrastructure research.

RESULTS

Key principle of formation of a flexible framework of the concept of infrastructure should be its conciseness. We offer only a coordinate system, which combines the disparate approaches and establishes a certain freedom for research in order to give substance to the concept. Therefore, the infrastructure may be considered as a multilevel system of facilities, which consist of the tangible and the intangible assets. The characteristics of these facilities are determined by the directions of the two vectors. The first vector is a range of attributes, i.e. technical, economic, and institutional attributes, which reflect economic nature of facilities as a source of external economies of scale, externalities, etc. These attributes are not dependent on the type of infrastructure. The second vector is a range of functions performed by the infrastructure facilities in the socio-economic system. The list of functions is determined by the needs of households, enterprises and the economy as a whole and varies depending on the type of infrastructure. The composition of facilities, included in the infrastructure as a whole or in its certain type is determined by the selected criteria of infrastructure classification.

The totality of studies over the past 70 years has defined a set of facilities, which is already not subject to discussion and therefore, this set can be called the *core* of the concept of infrastructure. For example, the set includes roads, railways, harbors and airports, networks of electricity, water supply, gas distribution and some more. Usually such facilities are part of the economic, the basic or the main type of infrastructure, depending on the chosen classification. The *inner shell* of the concept may include facilities that are mainly composed of intangible assets and are part of the institutional or soft infrastructure - such as a system of law, for example. These facilities define the "rules of the game", i.e., have a direct influence on the processes in the *core* and its structure. The *outer shell* consists of facilities of social infrastructure (e.g., educational and government buildings, hospitals). In addition, it may include facilities of market infrastructure, which is highlighted by some researchers (e.g, Popov [8]). The *outer shell* of the concept of infrastructure provides flexibility, which, in turn, causes the diversity of classifications. Although the *outer shell* is the subject of heated discussion for now, it should become a matter of compromise among researchers and the final step towards a widely used concept of infrastructure.

The criterion of property ownership along with the criterion of tangibility of assets allows us to create a matrix of relationships between the concept of infrastructure and other related concepts.

Table 2. Interconnection of different definitions/concepts of infrastructure facilities

Type of infrastructure assets	Property rights	
	Both public and private sectors	Only public sector
Both tangible and intangible assets	infrastructure	public infrastructure
Only tangible assets	infrastructure capital	public capital

We suppose that such a matrix is another step in addressing the issue of comparability of the results of research, which eliminates confusion in the concepts, related to the infrastructure facilities.

DISCUSSION

The range of results of impact estimation of infrastructure on economic performance includes opposite and even contradictory research findings. Such situation does not allow the public authorities to use the results of existing studies on the issue as a basis for the formation of new economic policy of infrastructure development or at least, for amending a current policy. This reduces not only the significance of the studies themselves, but also - indirectly - the efficiency of public investment due to the lack of reliable data about the infrastructure gap. A framework of the concept of infrastructure, proposed earlier in our definition is one of the necessary tools for flexible study goals. Using the framework of the concept (in conjunction with the relevant classification system and methodology) the study can potentially give results of infrastructure research, which can be considered by the state as a signal to continue, stopping, starting or restarting investment in infrastructure.

Further research of the problem should focus on a few areas. The first one is to formulate a classification system of infrastructure, following the three-stage algorithm proposed by authors in the second section, as well as taking into account the logic of the definition represented in the results of this study. Secondly, such framework of the concept and classification system provide an opportunity to rethink the methodology of evaluation of infrastructure and its economic impact, which could be a key step towards solving the problem of the comparability of research results. It is important to identify principles of a combined approach to infrastructure assessment and the criteria for consistency of the obtained estimates. Thirdly, the existing links between facilities belonging to the same type (or to different types) of infrastructure may also be considered as the sources of economic effects. Analysis of these relations is nothing but disclosure of the mechanism of interaction between the core, the inner shell and the outer shell in the concept of infrastructure, which, in our view, seems to be one of the key challenges in the further development of the problem.

CONCLUSSION

The definition of the concept of infrastructure should be based on established traditions in economic science for the last 60-70 years. At the same time the definition should be flexible enough in order to adapt it for the purposes and objectives of a particular theoretical and/or empirical study. Emphasis on the dual nature of infrastructure, i.e. equal importance of its attributes as an economic object and the functions it performs in the economy, can help to solve this problem. Moreover, the definition of infrastructure

should be a concise enough as it only sets the coordinate system for the researcher. The resulting concept of infrastructure can be divided into the *core* (e.g. the facilities like roads, utilities, etc.), the *inner shell* (i.e. an institutional environment - laws, rules) and the *outer shell* (e.g. the facilities of education and health care system, government buildings). The *outer shell* provides flexibility to the entire concept. The classification, which claims for the widespread use in economic science, must meet the same principles of compromise of approaches, flexibility and adaptability and follow the logic of the definition of infrastructure. The creation of a flexible classification system, redefining the methodology for assessing the impact of infrastructure and disclosure of the mechanism of interaction between the core, the inner shell and the outer shell of the concept of infrastructure - all these questions we can propose for further studies.

REFERENCES

[1] Aschauer D.A., Is Public Expenditure Productive, Journal of Monetary Economics, USA, issue 23, pp 177-200, 1989.
[2] Biehl D., The role of infrastructure in regional development, European Research in Regional Science, United Kingdom, issue 1, pp 9-35, 1991.
[3] Buhr W., What is infrastructure, Volkswirtschaftliche Diskussionsbeiträge, Germany, issue 107-03, pp 1-32, 2003.
[4] Di Palma M., Mazziotta C., Infrastrutture e sviluppo. Primi risultati: indicatori quantitativi a confronto (1987-95). Quaderni sul Mezzogiorno e le politiche territoriali, Confindustria, Italy, n. 4, 1998.
[5] Hansen N. M., The structure and determinants of local public investment expenditures, Review of economics and statistics, USA, vol. 47/issue 2, pp 150-162, 1965.
[6] Hirschman A.O., Strategy of economic development, Yale University Press, USA, pp 1-230, 1958.
[7] Jochimsen R., Theorie der Infrastruktur: Grundlagen der marktwirtschaftlichen Entwicklung, Universität Tübingen, Germany, pp 1-253, 1966.
[8] Popov V.E., Investicii v infrastrukturu i jekonomicheskij rost: regional'nyj aspekt, Regional'naja ekonomika: teorija i praktika, Russia, vypusk 1, pp 59-68, 2009.
[9] Sturm J.-E., Jacobs J., Groote P., Productivity impacts of infrastructure investment in the Netherlands 1853-1913, Research Institute SOM, issue 95D30, Netherlands, pp. 1-30, 1995.
[10] Tinbergen J., Shaping the World Economy, Suggestions for an International Economic Policy, The Twentieth Century Fund, USA, pp 1-330, 1962.
[11] Torrisi G., Public infrastructure: definition, classification and measurement issues, MPRA Paper, Germany, issue 12990, pp 1-34, 2009.
[12] Vaughan-Morris G., Strategic Infrastructure - Steps to Prioritize and Deliver Infrastructure Effectively and Efficiently, World Economic Forum, Switzerland, pp 1-104, 2012.
[13] Youngson A.J., Overhead capital. A study in development economics, Edinburgh University Press, United Kingdom, pp 1-192, 1967.

INSTITUTIONAL ASPECTS OF THE RUSSIAN ECONOMY REINDUSTRIALIZATION: FORECAST OF THE REGIONAL CLUSTERS DYNAMICS

Chief researcher CR IMTE, Inna Shevchenko,

Leading researcher CR IMTE Yuliya Razvadovskaya,

assistant Anna Khanina

Southern Federal University, **Russia**

ABSTRACT

Over the recent years, the economic policy of many countries has focused on development mechanisms of networking between enterprises in one or more branches in a certain area. Approach to the development of the economic individual territories potential, based on increased geographical concentration is becoming more widespread, confirming the effectiveness of local geographical networks in the global competition context. Despite the world economy globalization, which gives a comparative advantage by reducing transport and transaction costs, the development of the economy competitiveness is becoming an increasingly important separate institutional form of economic potential concentration. The article analyzes the cluster as an institutional form that has an impact on regional economic development at the stage of re-industrialization. There is an active policy for the creation of regional clusters in the Russian economy. It is expected that such institutional arrangements provide for innovative regions development in conditions of re-industrialization economy. Experience shows that businesses tend to cluster in certain regions. This is due to the benefits that arise from geographical concentration and from the region's specialization in certain types of activities. There is an opinion, that the enterprises included in the regional cluster structure have higher economic performance. The analysis suggests that not all existing clusters influence the development of innovations in the region, and the analysis forecast for the clusters development shows that the most significant indicator of the cluster influence to the region is the revenue, which forms the GRP structure. It is concluded that the cluster is an efficient tool for territory development.

Keywords: institutional policy, regional clusters, reindustrialization, concentration, innovation, forecast the development of regional clusters.

Introduction.

The institutional environment forms the technological efficiency of the economic system that is characterized by well-developed production structure and defines the relationship between major subsystems of the socio-economic and production-technological systems. It is universally recognized that the institutional environment affects the process of formation and redistribution of the proportions between production, investment and employment, in determining the level of productivity and the productivity of capital. Thus, depending on the level of economic development and the institutional environment of economic growth can occur by increasing production

and use of fixed capital used in the economy with a certain level of technology, and on the basis of fundamentally new technologies. In the first case, there is a net increase of fixed capital, i.e. the excess of input over the disposal and accordingly, the economy is characterized by dynamic reproduction. In the second case is dominated by intensive updating of the existing production facilities, modernization of production based on new technologies and innovations, that is, a stationary type of reproduction of fixed capital. At the present stage of development for developed countries is characterized by a stationary type of reproduction of fixed capital, that is, intensive upgrade of existing technologies on the basis of achievements of scientific-technical progress[1]. It should be noted that this type of reproduction of fixed capital on the basis of its expansion while improving technology leads to a simultaneous increase in the return on capital, productivity. Which correspondingly provides a higher return to the economy, its competitiveness on a global level.

Under these conditions, the institutional environment is a critical factor in ensuring the development of science and use its achievements in production in a reindustrialization of the economy. Through a developed institutional environment are achieved the effects in improving production technologies, increasing production volume while reducing the resources of capital and labor [2,3]. At the expense of introduction of achievements of science provides intensive economic growth, characterized by reducing the complexity and capital intensity of production. Forming the basis for processes of production, exchange and distribution through a complex of norms, rules and legal norms of the institutional environment is a crucial element in macro-economic planning national economic development [4]. The level of efficiency of the institutional environment is determined not only by the degree of development of legal rules and norms, but the presence of the relevant institutions for development, providing increase of efficiency of interaction of subjects of economic activity. Policy institutional regulation of the economy in the present stage includes the cluster initiative. At the same created in the framework of territorial and sectoral planning of innovative clusters act as infrastructure aimed at strengthening the cooperation of science and production.

In the last few decades a growing interest from domestic and foreign scientists to the problems of management in industry through the generation and dissemination of knowledge and innovation in the cluster [4,6,8,11]. The development of a new approach to the management of economic development of individual territories and industries related to the fact that in a highly competitive and innovative environment, lack of knowledge and try to compensate it at the expense of network cooperation. In connection with the limited knowledge and resources in today's highly competitive conditions, the benchmark of economic policy at the regional and sectoral levels is the cluster contributing to the support of innovative development of the industry [8]. Many studies confirm that the companies included in the structure of the cluster have higher rates for innovative development than companies that are not included in the network structure of the cluster type [15].

Created in the Russian economy innovation clusters represents a new organizational form that is designed to improve the competitiveness of the territorial-industrial complex in the framework of the process of re-industrialization. Economic effects by enhancing the competitiveness of enterprises operating within the cluster arise from the agglomeration and, consequently, the localization of the economy. In this case, the cluster brings together sector and enterprises associated with access to collective resources, such as specialized labor markets and infrastructure, and provide a

stimulating mix of competition and cooperation [5,6]. Second, clusters foster the systemic dynamics of learning and knowledge creation, the relationships of the enterprises, cooperation with educational and research organizations [7]. We can assume that one of the effects of the clustering is the reduction of capital intensity of production and increasing productivity.

Clusters encompass tangible elements such as infrastructure and intangible aspects, and are also an effective mechanism of attracting direct investments and activating external-economic integration and interaction between the participants in the regional innovation systems [8,9]. The mandatory elements of a regional industry cluster are science, production and commercialization of the results of joint activities. While the actual development of the innovation system is only possible with close partnership of business, science and education, regional and Federal authorities [10]. Thus, it is possible to make the assumption that the creation of innovation clusters promotes intensive upgrading of existing technologies at the expense of introduction of achievements of scientific-technical progress in conditions of re-industrialization of the economy.

The main part. At the present time in Russia created 25 clusters of different sectoral orientation. It should be noted that the main area of distribution of the clusters is the European part of Russia. The highest concentration of clusters is observed in the regions with high innovation activity, including in Central and North-Western Federal districts (Fig. 1).



Fig. 1 Map of the most active areas of innovation in the economic space of Russia

The cluster in the Russian economy is a potential Institute of development of territorial-sectoral complexes in the conditions of re-industrialization. Therefore there is a need to analyze the effectiveness of the clusters, identify their impact on the pace of technological innovation and socio-economic development of territories. To identify the degree of influence of the cluster on the economic performance of the area was made an analysis of the main indicators of clusters, and analyzing their impact on the level of economic development of the region. For analysis were used indicators of the region, such as GRP, the regional volume of investments, number of patents, employment and factors – performance clusters, such as revenue from sales in the cluster, the volume of private investment, and the share of manufactured innovative products, the number of employees in enterprises and organizations participating in the activities of the cluster, R & d funding in the cluster. In this study, the assumption that the greatest influence on the activities of the region will be clustered to provide such indicators as the volume of

private investment, the volume of produced innovation products, as well as the final financial result obtained in the course of functioning of enterprises within the cluster.
To confirm this hypothesis, we conducted factor analysis, the results of which indicate that some cluster parameters affect appropriate indicators of socio-economic development of territories. The analysis revealed that the greatest influence on the economic performance of the region provides such an indicator as the volume produced by the companies of the cluster of innovative products.

Table 1.

The average values of the cluster which has the most strong influence on the performance of the regions

The indicators in the cluster that have the most strong influence on the performance of the region	Average value of the coefficient (factor analysis)
Revenue from sales of goods, performed works, rendered services on foreign market revenue.	0,6
The volume of private investments, billion rubles.	0,6
The volume and share of innovative products, billion rubles.	0,7
The number of employed, thousand people	0,6
R & d (funding)	0,5

According to the data presented in table 1 the greatest influence on the indicators of the region have such indicators in the cluster, as the volume and share of innovative products, number of employees, the volume of private investment and sales revenue. The dynamics suggests that the institutional environment affects the process of formation and redistribution of the proportions between production, investment and employment, in determining the level of productivity and the productivity of capital.
To predict the development of clusters in accordance with the identified typology was used the method of analytic alignment. In the study of common trends by the method of analytic alignment based on the fact that changes in the levels of a number of speakers can be with varying degrees of accuracy of the approximation expressed defined mathematical functions. The equation determined by the nature of the dynamics of a particular phenomenon. In practice, according to the available time series defines the appearance and find the parameters of the function $y=f(t)$, and then analyze the behavior of deviations from trend. Most often, when the alignment uses the following dependencies: linear, parabolic and exponential.
For the analysis and forecasting of development dynamics of regional clusters was chosen as these clusters as the Saratov innovation cluster and Petrochemical territorial cluster. Originally performed analytical alignment of indicators for the development of clusters and regions in which they are created. Table 2 presents data on the activities of the clusters and indicators GRP of all the regions in which the function of the analyzed clusters. Figures for 2016-2017 are forecasted.

Table 2

Statistics of clusters and regions

Saratov innovation cluster (Nizhny Novgorod oblast)										
Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Revenues for the cluster, billion rubles)	134	141	147	164	176	184	194	204	214	280
GRP (billion rubles)	241	299	376	473	588	547	646	647	670	673
Petrochemical territorial cluster (Republic of Bashkortostan)										
Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Revenues for the cluster, billion rubles)	204	237	256	277	309	364	550	830	860	870
GRP (billion rubles)	310	381	505	590	743	647	757	759	840	890

In the course of the analysis of indicators of development of the Saratov innovation cluster and Petrochemical territorial cluster - revenue from sales of goods, works and development of the region's GRP, it was found that there is a dependence of the growth of one parameter from another. However, it should be noted that the trends of GRP growth and revenue growth cluster in the Petrochemical territorial cluster in the territory of the Republic of Bashkortostan are quite similar than in Saratov innovation cluster, which confirms the hypothesis of the existence of innovative and territorial clusters. For example, let's make analytical alignment of the analyzed indicators.

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS

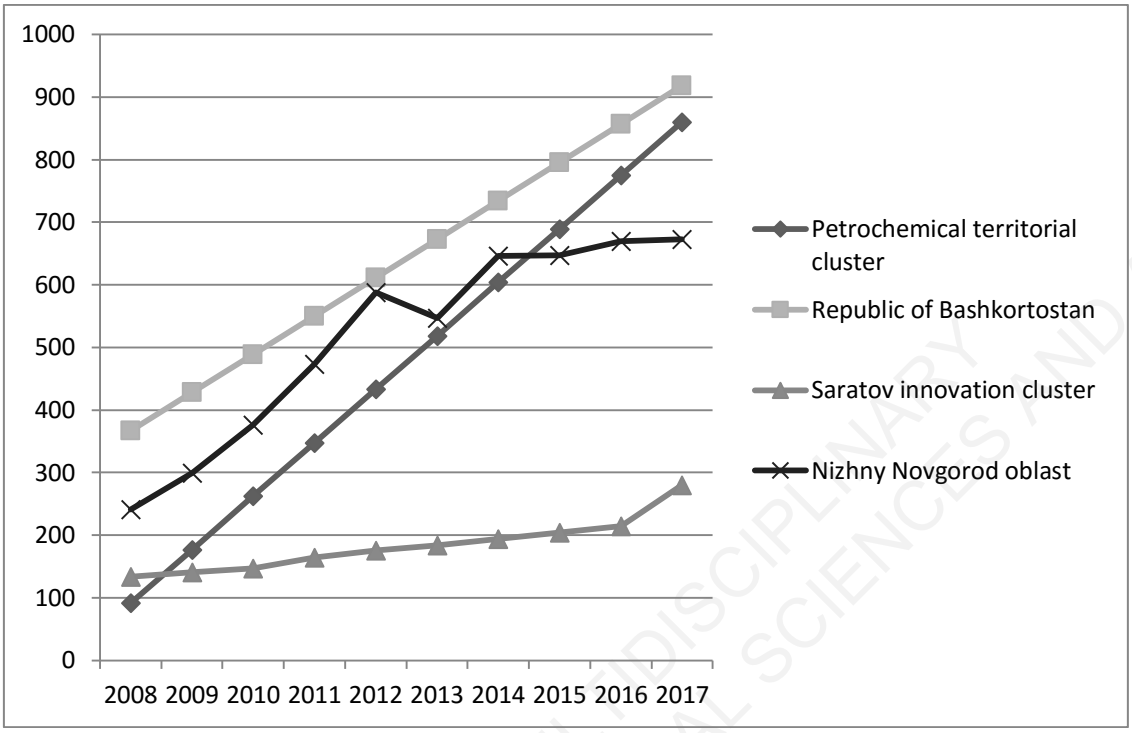


Fig.2 Results of analytical alignment in the performance of clusters and regions

As the figure shows, the growth of GRP of the Nizhny Novgorod region and the growth of revenue from sales of the Saratov innovation cluster have a positive trend. It is also worth noting that these indicators do not depend on the time period, as the elasticity coefficient, characterizing indicator of the strength of the connection of the time factor with a score of X or Y of both parameters is less than 1. Thus, having an analytical smoothing of the indicators of development of innovation cluster in Saratov and Nizhny Novgorod region, one can conclude that the growth of GRP of the region is outpacing the revenue growth of the cluster, however, the positive direction of development of these parameters, suggests that the cluster is an effective tool for the development of this territory.

From the analysis of the functioning of the territorial Petrochemical cluster in the Republic of Bashkortostan is obvious direct dependence between indicators of development of the region and the cluster. The growth of cluster activities, in particular revenue, directly affects the efficiency of development of the region and its GRP. Thus, we can conclude that the territorial Petrochemical cluster is an important link in the development of the Republic of Bashkortostan and the performance indicators form the basis of the region's GRP.

CONCLUSIONS.

The analysis of influence of the cluster, indicators of socio-economic development of territories suggests that the cluster is an effective instrument of institutional regulation of territorial development. The specificity of the cluster directly determines the system parameters of the region development. Innovation and technology cluster in the greater degree influences the parameters of innovative development of the region, regional clusters have an impact on the overall socio-economic development of territories. It should also be noted that the forecast for the development of clusters in the Russian

economy on the example of the Saratov innovation cluster and Petrochemical territorial cluster suggests that the predictive positive dynamics of clusters forms a background positive trend of development of the territories concerned. On the basis of the conducted analysis it can be concluded that the institutional environment is one of the main factors providing development of innovative potential of territories and industries. Through the development of innovative clusters are achieved the effects in improving production technologies, increasing production volume due to generated effects of the concentration of production and increase the interaction between enterprises and organizations.

ACKNOWLEDGEMENTS

The publication was prepared within the framework of the Russian Foundation for Humanities, research project No. 15-02-00344. "Modeling of processes of re-industrialization of the territorial-sectoral complexes in the architecture of the economic and geographical space of Russia"

REFERENCE

[1.] Arikan A.T. Interfirm knowledge exchanges and the knowledge creation capability of clusters. Academy of Management Review, 2009, no. 34, pp. 658–676.
[2.] Bahrami H., Evans S. Flexible recycling and high technology entrepreneurship. California Management Review, 1995, no. 37, pp. 62–89.
[3.] Bell, G. G. 2005. Clusters, networks, and firm innovativeness. Strategic Management Journal, 26, 287.
[4.] Casanueva, C., Castro, I., & Galn, J. L. 2013. Informational networks and innovation in mature industrial clusters. Journal of Business Research, 66, 603–613.
[5.] Capello R., Faggian A. Collective learning and relational capital in local innovation processes. Regional Studies, 2005, no. 39, pp. 75–87.
[6.] Connell, J., & Voola, R. 2013. Knowledge integration and competitiveness: A longitudinal study of an industry cluster. Journal of Knowledge Management, 17(2), 208–225.
[7.] Davis L., North D. Institutional Change and American Economic Growth. Cambridge. 1971. — P. 6.
[8.] Gertler, M. S. 2003. Tacit knowledge and the economic geography of context, or the undefinable tacitness of being (there). Journal of Economic Geography, 3(1), 75–99.
[9.] Krugman P. Geography and Trade. Leuven and Cambridge, MA, University Press and MIT Press, 1991.
[10.] Krugman P. R., Obstfeld M. International Economics: Theory and Policy. — 1988. Prentice Hall, 2008. - 712 p.
[11.] Kutsenko E. (2015) Pilot Innovative Territorial Clusters in Russia: A Sustainable Development Model. Foresight-Russia, vol. 9, no 1, pp. 32–55. http://dx.doi.org/10.17323/1995-459x.2015.1.32.55
[12.] Lissoni, F. 2001. Knowledge codification and the geography of innovation: The case of Brescia mechanical cluster. Research Policy, 30(9), 1479–1500.
[13.] Storper M. The Regional World Territorial Development in a Global Economy. Guilford Press, New York, 1997.

[14.] Borovskaya M.A. Shevchenko I. K., Razvodovskaya Y. V., Fedotova A. Y., Identification of a cluster based on the comparative advantages of the region on the example of the southern Federal district, Regional economy: theory and practice. Ed.: OOO "Publishing house FINANCES and CREDIT" (Moscow). – 2015. – C. 2-6

[15.] The Report Of The Ministry Of Economic Development. Cluster policy: concentration of potential to achieve global competitiveness. Under. ed And Bortnik.M. Rudnik P. B., Shadrin A. E. URL:http://2014.forum.economy.samregion.<url>/sites/default/files/materials/Doklad_SMEF.A PDF. Date: 20.09.2015.

[16.] The cluster summit. International multimedia press center of RIA Novosti, 2013. URL: http://cluster.ria.ru/news/20131118/948315120.html. Date: 20.09.2015.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
S G E M 2 0 1 6

INTEGRATING SUSTAINABLE DEVELOPMENT POLICIES IN CREATING AN AGRICULTURAL COOPERATIVE

PhD. Student Maria Claudia Preda (Diaconeasa)

PhD. Student Raluca Emilia Chirculescu

Bucharest University of Economic Studies, **Romania**

ABSTRACT

Current conditions in Romania, as an EU member since 2007, register large differences in socioeconomic development regarding to the founding countries. They have determined the need for a study on adaptation to EU directives aimed at sustainable economic development. This study will try to highlight how the integration of sustainable development policies as mandatory for setting up an agricultural cooperative can be a favorable factor and shorten the process of adapting the new structure to the changing European economy.

Romania has shortcomings both in the chapter of sustainable economy and that of the establishment of agricultural cooperatives. This kind of structures is considered to be the global food security solution for a growing population. However, the environment degradation level, especially in rural Romanian is not very advanced, and the ability of the population to absorb information is very high. Also, the learning process of the cooperative principles based on the European model is only at the beginning in Romania and the number of agricultural cooperatives existing in this country, at last count, was only 66. The authors want to demonstrate that the integration of the sustainable development in agricultural cooperatives operating principles while the Romanian rural population is only now learning the cooperative regulations can represent a shortcut meant to catch up for some of the years that Romania has behind western Europe.

The work methodology will consist of a feasibility study, starting from the structure recommended by the Romanian Agency for Funding Rural Investment to create an agricultural cooperative in the Romanian rural area. In this study, the environmental policies have major importance so as to demonstrate that the possibility of creating such a cooperative is valid, regardless of the implementation region and that it may be a solution to fill the gaps between regions.

Keywords: agricultural cooperative, sustainable development, integration, adaptation to European requirements

INTRODUCTION

Often, growth is taken into account one of the strongest steps to extend human welfare through the multiple potentialities offered to individual shoppers or industrial. However economic process alone can't sustain the requirements and human needs. As a consequence of economic process and negative effects occur as gas emissions with atmospheric phenomenon, gas depletion, degradation of biodiversity caused by the destruction of natural habitats and innumerable different devastating effects. Following

this context, sustainability development took root branches making links between economic, social and environmental. Sustainability development is outlined as development that meets gift desires while not compromising the power of future generations to hide their desires. [1] Long-term sustainability of economic process depends on maintaining basic system services, a healthy atmosphere and cohesion of societies. reconciliation these components would force stronger cooperation with countries within the developing world - already over eightieth of the globe population, which can represent nearly all the rise in its future - attributable to the risks of disintegration and exclusion touching all countries . therefore the importance of getting a broader vision of what's needed wealth, a long read of the results of activities and a bigger stress on international cooperation these days, can facilitate to realize viable solutions.

Sustainability development are often understood in economic terms as "development that lasts" [2] - i.e. a path on that maximize human welfare for today's generation doesn't lead to decreases in future welfare for future generations. Forms of capital embrace supporting the welfare of man, nature, human and social capital. "Adequacy" to support well-being depends on the interaction between them and therefore the population size, its characteristics, and preferences. Differing kinds of capital provides one among the most mechanisms through that generations area unit connected to every different - that stocks area unit influențateprin current investment choices, however, their era many generations.

A key issue for sustainability development is that the extent to that differing kind of capital is often replaced with one another. Wherever substitution is feasible, the exhaustion of 1 style of capital is in step with sturdiness wherever it is often salaried by a rise within the different. However, the substitution between differing kinds of capital isn't invariably potential. For instance, within the presence of vital thresholds for a few resources, the value of any degradation could increase chop-chop, the line for policies to keep up the standard and strength of those resources.

This paper highlights the importance of a variety of cross-cutting components to guide policies towards sustainability development. These embrace particularly long coming up with horizons. Whereas trade-offs between completely different objectives could have confidence short-run, long-term, human, natural, human and social capital can complement one another in supporting social improvement.

Important components of sustainability development policies. Delivery of the public product. Several of the advantages from government interventions required to push sustainability development have characteristics of the public product (basic analysis, data, health, and education). Also, several of that public product area unit international as a result of they'll like many countries (for example, data on the state of world ecosystems). The particular delivery of those public product needs overcoming

obstacles to coordination, through burden sharing rules that acknowledge completely different responsibilities and response capacities of individual countries. **Value effectiveness.** Policies ought to get to reduce their economic value. This may need extra resources to make sure that everyone the prices area unit equal spent the total vary of potential interventions. Cost-effectiveness minimizes mixture prices and setting a lot of bold targets within the future.

The effectiveness of the atmosphere. Policies ought to ensure: **Regeneration** - the employment of renewable sources. Resources ought to be used effectively and this could not be allowed to exceed their long rates of natural regeneration; **Substitutability** - i.e. nonrenewable energy resources ought to be used expeditiously and their use restricted to levels which will be offset through renewable resources or different varieties of capital; **Assimilation** - that's dangerous or polluting emissions into the atmosphere mustn't exceed the assimilatory capability and therefore the concentrations ought to be unbroken below established vital levels necessary to guard the human health and therefore the atmosphere. **Avoiding changelessness** - irreversible adverse effects of human activities on ecosystems and biogeochemical cycles and hydrological be avoided. Natural processes capable of maintaining or restoring the integrity of ecosystems ought to be protected against the adverse effects of human activities. **Political integration.** Unsustainable practices could lead to incoherent policies in several areas. Sectoral policies, particularly, area unit typically introduced while not taking into consideration the results of external environmental policies area unit involved, resulting in inconsistencies and aspect effects. **International cooperation.** With the deepening international interdependencies, externalities become a lot of in depth. A slim concentrate on the national interest isn't viable once countries face a variety of environmental and social threats that have international implications.

Sustainable agriculture was self-addressed by Congress within the food trade, agriculture, conservation, and Trade Act of 1990. Beneath this law, long sustainability agriculture means that "an integrated production plant based mostly animal and UN agency have a selected request that the term will: Meet the food desires; enhance environmental quality and therefore the natural resources base on that agriculture depends on economy; create a lot of economical use of unrenewable resources and resources on these farms and integrate, wherever acceptable, natural biological cycles and controls; supports the economic viability of farm operations; enhance the standard of life for farmers and society as a full. "

The goal of sustainability agriculture is to reduce the adverse effects on the immediate atmosphere and to produce each a sustained level of production and profit. This goal is inherent understanding that sustainability should be extended not solely globally however indefinitely in time and by all living organisms, as well as humansWhile the goal of sustainability agriculture is outlined equally by several organizations, there are not any rules or laws strictly outlined for farmers. There area unit standards and

certifications for organic farming, that is similar to sustainability agriculture, however, the 2 don't seem to be thought-about synonyms.

Economic incentives are often accustomed encourage the employment of environmentally friendly farming techniques and technologies. sustainability practices farmers will economize attributable to reduced ought to purchase pesticides, herbicides, fertilizers etc. sustainability farms tend to possess a lot of harvests leading each money security and subsistence farmer. The laws, each native and international, might implement standards in environmental protection and education might facilitate farmers create higher selections.

Why cooperatives?

Today, when the world aspires to cooperation and collaboration on every level giving up the independent work, the idea that information and knowledge should be freely transmitted from those who have them to those who need them for social and economic development, is everywhere. The cooperative is a structure that can ensure an even and global development, inclusive and able to diminish regional gaps. Cooperatives are known, as a concept, for about 300 years. Meanwhile they went through many changes, largely due to the political regime approached by each country. The different approaches had negative effects especially in countries that experimented totalitarian regimes because of the economic and the control of the areas that cooperatives offered, but they are now the preferred solution for rural problems. The European Union (EU) defines cooperatives as autonomous associations of persons united to meet common economic, social, and cultural goals. They achieve their goals through a jointly-owned and democratically controlled enterprise [3] and they kept the same principles for 300 years. No matter the sector they function in (agricultural, banking, pharmaceutical, etc.), cooperatives represent a solution for achieving the objectives of "smart growth" mentioned in Lisbon and Europe Agenda because they are the type of organization that addresses both entrepreneurial and social objectives of a community [4]. It is considered that the development potential of cooperative organizations is important especially for the rural area of Central and East Europe, ensuring the economic push they need. Also, the United Nations Organization's Agenda Post-2015 has among its basic principles both sustainable development: put sustainable development at the core and inclusive growth: transform economics for jobs and inclusive growth, the second principle has cooperatives as a recommended way of achieving the goal [5].

The COPA COGECA's (institution that unites and represents the European farmers and the European agri-cooperatives) report on agri-cooperatives of EU for 2014 shows that the number of cooperatives in Central and East Europe is very low: Bulgaria – 900, Czech Republic – 548, Poland – 136, Romania – 68, Slovenia – 368 and Slovakia – 597 [5]. The turnover at country level for these countries is compared in Figure 1 with the

turnover registered by the first five agri-cooperatives in EU, we mention that there are no available data for Bulgaria.

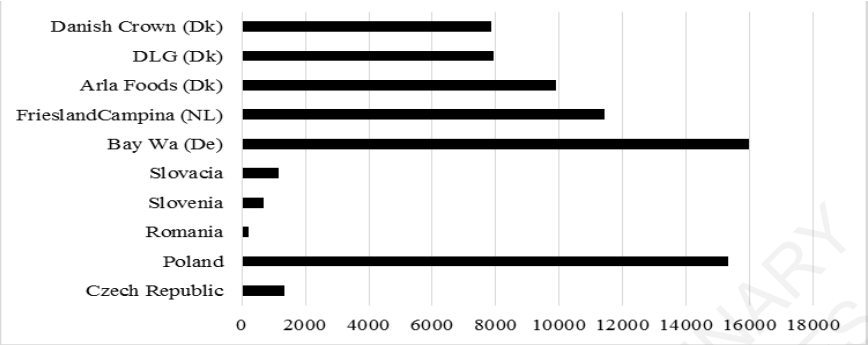


Figure 1 – Agri-cooperatives turnover in mil. EURO [5]

The turnover for the first five agri-cooperatives in EU is higher than each of the analyzed countries, Poland is the only exception. We may conclude that, at a global level, the agreed solution for ensuring social inclusion and sustainable rural development has already proven to be good.

Why is the topic relevant for Central and East Europe rural area?

According to Eurostat, rural area and rural population have a very high percentage, 45% of the population living in rural area. The situation is similar for the other countries in Central and East Europe. This is enough reason to put sustainable development of these areas as a priority both for national and European governance. The EU legislation makes clear statements about developing these areas as a priority. In Table 1 we can see why a strategy of sustainable development for the rural areas could have a very high and long term impact.

Table 1 – Classification of the population by residence and GDP/capita

		Rural area	Intermediate area	Urban area
Population	EU average	22.60%	34.90%	42.50%
	Bulgaria	37.10%	44.80%	18.10%
	Czech Republic	32.90%	42.90%	24.20%
	Poland	33.20%	38.50%	28.30%
	Romania	45.00%	43.50%	11.30%
	Slovenia	43.40%	56.60%	0.00%
	Slovakia	50.20%	38.40%	11.40%
GDP/capita euro/year	EU average	33330.00	30962.00	33270.00
	Bulgaria	3783.00	4468.00	12285.00
	Czech Republic	12793.00	13100.00	22726.00
	Poland	7403.00	9065.00	14598.00
	Romania	4693.00	6290.00	15928.00

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

	Slovenia	14521.00	19814.00	-
	Slovakia	10764.00	11186.00	32305.00

The differences between EU average and these countries are important and they consist of many factors like the totalitarian regime they endured for a long period, the late adherence to the Common Agricultural Policy and very strict rules and standards the local farmers have to obey, rules they don't always understand. Each of the analyzed countries has a rural population higher than the EU average which means that the care and thought the EU institutions put into finding solutions for developing them is an understandable priority.

In terms of Employment (Table 2), statistical data show a need for increasing the employment rate and the agri-cooperatives, as instruments of social economy [3], may be the optimal solution for ensuring that increase in the rural area. This type of structures may increase both the employment rate and the self-employment rate, and by including sustainable development policy, an increase in the quality of life and environment on long term is also ensured. The high number of employees in agriculture for these countries is noticeable, Romania has both the highest percentage of agricultural workers and lowest number of cooperatives.

Table 2 – Employment

	Employed	Self-employed	Unemployed	Employment in agriculture
EU average	64.80%	14.40%	10.20%	4.40%
Bulgaria	61.00%	11.50%	11.40%	6.10%
Czech Republic	69.00%	17.00%	6.10%	2.20%
Poland	61.70%	17.90%	9.00%	10.90%
Romania	68.70%	18.40%	6.80%	27.80%
Slovenia	67.50%	12.10%	9.70%	9.20%
Slovakia	67.60%	15.20%	13.20%	2.50%

Brief analysis of the given documents for measure 4.1 – Investments in agricultural holdings and 16 – Cooperation from the National Program for Rural Development

It is considered that including agri-cooperatives as an instrument for developing the rural area ensures in the same time the sustainability of the area [6]. Agri-cooperatives solve, at a theoretical level, problems like extreme poverty, gender equality, long term education and food safety, social and economic stability. Meanwhile, it is known that a great part of the rural population doesn't know how and cannot find information on how to start and manage a cooperative, nor the opportunities that come with it. It is implied that the rural population doesn't know how to fill all the documents required for financing a cooperative organization, documents like marketing plan, feasibility study or partnership agreement. All of these documents are available on the Romanian Agency's for Financing the Investments in Agriculture website [7].

Although, at international level, the even sustainable development is more and more pronounced, the Dutch model where farmers found the environment cooperatives as a solution for implementing sustainable development objectives in their daily activity [4], is utopian for most of the developing countries at this point.

The two measures that have been taken into consideration in this paper are 4.1 because it should be accessible especially for existing cooperatives or producer groups and also for their members as entrepreneurs and individuals, given the higher connections with the market that they should have and 16 because it refers directly to cooperation among entities with activity in the rural area in order to favor development.

The feasibility study that must be written in order to ask for European funding by measure 4.1 has eight chapters, each one with at least one subchapter. Among these subchapters there are very few paragraphs that may be associated with the sustainable development objectives, the rest consists of technical and economic data [8]. The first paragraph that needs to be mentioned is the one referring to the training of the farm manager, the higher the training is, the higher scoring the project will obtain. The second mention appears when separating vegetable and animal farms, a project for a vegetable farm needs to mention the water consumption analysis for the irrigation system and a construction in compliance with the environmental regulation for depositing manure for the animal farm. The final paragraph taken into consideration refers to the number of new jobs created by the investment. The rest of the study, although dense, is formed by very technical data and economical calculus. All the calculus stands for pure economic reasoning and has nothing to do with the sustainable development.

Measure 16 doesn't make any reference to sustainable development, but only to the economic opportunities that cooperation among farmers may give. In the documents explaining this measure the phrase "responding to environmental challenges" is mentioned, but there are no examples of how to do so. Furthermore, no document required for receiving European funding by this measure contains anything related to environmental problems, challenges or sustainable development[9].

Including sustainable development objectives in these documents should be required by the authorities and not expected to come from private initiative as it doesn't ensure short term profits so it is not interesting for entrepreneurs at this point.

CONCLUSION

The situation of Central and East European countries cannot be resembled to the Netherlands where the first measures of adopting sustainable agriculture came from the farmers, members in cooperatives, more than twenty yers ago [6]. Still, Dutch environmental cooperatives are proof for the developing countries that such regulations are feasible. For these countries we see proper that the first step should be made by the authorities, since they don't have the time for the natural appearance of the sustainable

objectives in people's minds. Also, these regulations should be set as an obligation for modernising or building a new agricultural entity, especially for cooperative ones. We believe that including the following measures in the documentation for obtaining European funding will reduce both the regional gaps and ensure a sustainable development for a large area in the EU. So, the construction of a power installations able to ensure minimum 25% renewable energy (solar, wind, etc.)[10] must be included in any project; The new purchased machines must meet the highest energy consumption and emission standards; Consolidation of old buildings must include envelopment, and the new ones must be built by the lowest energetically consumption standards; At least 25% of the utilized agricultural area must be reconverted to ecological farming; At least one partnership between a vegetable and an animal farm regarding an exchange, for example manure for animal food, must be made; The number of new jobs created must be proportional to the size and activity of the farm, but no lower than 1 and finally, farm managers must organize once every two years training classes for the employees so the novelty in the field gets heard directly by the local actors.

REFERENCES

[1]. http://ec.europa.eu/growth/sectors/social-economy/cooperatives/index_en.htm, last accessed 27.06.2016;

[2]. European Commission, COM/2004/0018 final , Bruxelles, 2004;

[3]. International Labor Organization, International Cooperatives Alliances, Cooperatives and the sustainable Development Goals, A contribution to the Post-2015 Development Debate, A policy Brief, 2015;

[4]. COPA COGECA, Report: Development of Agricultural Cooperatives in the EU 2014, Burxelles, 2015;

[5]. http://ec.europa.eu/agriculture/cap-indicators/context/2015/indicator-table_en.pdf , C1, C5, C6, C7, C8, C11

[6] European Commission, Report of the cooperative working group "Fostering cooperatives' potential to generate smart growth & jobs", Bruxelles, 2015;

[7] www.afir.info – Solicitants guide, Measure 4.1 and 16

[8] Wiskerke J., Bock B., Stuiver M., Renting H., Environmental co-operatives as a new mode of rural governance, NJAS - Wageningen Journal of Life Sciences Vol. 51/ Issue 1-2, Netherlands, 2003, pp. 9-25;

[9] World Commission on Environment and Development, 1987. Our Common Future. Oxford: Oxford University Press.

[10] Blueprint for a Sustainable Economy, Edited by David W., Pearce, Edward B. Barbier, Earthscan Publications Ltd.: London, 2000, 273 pp.

INTELLIGENCE TECHNOLOGIES IN MANAGEMENT AND ADMINISTRATION OF JUSTICE

Assoc. Prof. Nayden Nenkov[1]

Prof. Mariana Petrova[2]

Assoc. Prof. Yuriy Dyachenko[3]

[1] Episkop Konstantin Preslavsky University of Shumen, **Bulgaria**
[2] St. Cyril and St. Methodius University of Veliko Tarnovo, **Bulgaria**
[3] Volodymyr Dahl East Ukrainian National University, **Ukraine**

ABSTRACT

An essential part of modern management and administration of justice is computing, particularly, intelligence technologies. For the solution of applied problems we could use intelligence technologies which performs particular tasks in management and administration of justice. For the different tasks we use various kinds of information systems. We will consider it for instance on management on example of information systems in administration of justice and information systems in management of Human Resource Development. Development and implementation of an intelligence system of enforcement is crucial, not only the expected effect on the affected public relations internally, but also as a means of fulfilling the obligations imposed as a result of Bulgaria's membership in the EU. E-Justice is not a single act or a state of the judicial system – this is a process that involves a set of measures associated with the reorganization of the judicial system of using modern information technologies – legal, technical, organizational, financial and educational. The necessity for implementation of "e-enforcement – Gateway to the enforcement" by the means of information system of enforcement is justified by the fulfilment of legal requirements and the potential effect this Gateway e-enforcement may have had. There are requirements for the judiciary in terms of interfaces and how to exercise procedural rights electronically. As far as intelligence technologies develop provision for a regulatory framework with which to regulate the dynamic relationship. As for management of personnel in enterprises one of the most difficult task is to determine the effectiveness of training costs due to its branching and sophisticated feedback caused by improved production results of staff who took part in it. The aim of the human resource development system is to make the knowledge, skills and experience of the staff correspond to the desired indices at different levels: enterprise strategy, branch activity, work duties. Determining the impact of performance of the company on indicators characterizing the personnel training, the analysis of this relationship is performed on the basis of intelligence system IBM Watson Analytics. The use of intelligence technologies in the management and administration of justice improves the efficiency and transparency and the goal is to continue the process of integration of information systems and ensuring their full applicability. The introduction of many different information systems in management and judicial system requires the provision of reliable connectivity between institutions and upgrading the skills of working with them. Considering the conditions for development of web-based system for business management in the frames of research

project „Models and applications of information systems with distributed databases and systems with artificial intelligence" in Konstantin Preslavsky University of Shumen.
Keywords: administration of justice, business management, intelligence technologies. re

INTRODUCTION

Nowadays computing is an essential part of modern management and administration of justice. For the solution of applied problems we could use intelligence technologies which performs particular tasks in management and administration of justice. Rapid changes in complex environment requires quick responses and unconventional solutions in the information systems.

Now traditional approaches to developing of information systems through programming on Turing machines should be replaced by the creation of continuous self-adaptive systems [1, p. 35] with natural interfaces. Intelligence technologies meet these requirements, especially those that are focused on the reproduction of principles of human intelligence functioning [2].

We will consider degree of intelligence of information systems in management on example of information systems in administration of justice and information systems in management of Human Resource Development.

INTELLIGENCE TECHNOLOGIES IN ADMINISTRATION OF JUSTICE

In 2008 the Council of the European Union has developed and adopted a multi-year action plan for the period 2009-2013 in the European e-Justice. The European e-Justice must fulfil three basic functions in terms of access to information in the field of justice, electronic communication between the court and the parties concerned, and to simplify and promote the exchange of information between judicial authorities in the Member States. In view of this development and implementation of an information system of enforcement is crucial, not only the expected effect on the affected public relations internally, but also as a means of fulfilling the obligations imposed as a result of Bulgaria's membership in the EU. No doubt the importance of the reform is based on the consistent application of a number of measures, the result of which should give the public a quick, transparent and effective functioning justice system.

Development and implementation of an intelligence system of enforcement is crucial, not only the expected effect on the affected public relations internally, but also as a means of fulfilling the obligations imposed as a result of Bulgaria's membership in the EU. E-Justice is not a single act or a state of the judicial system – this is a process that involves a set of measures associated with the reorganization of the judicial system of using modern information technologies – legal, technical, organizational, financial and educational. The necessity for implementation of "e-enforcement – Gateway to the enforcement" by the means of information system of enforcement is justified by the fulfilment of legal requirements and the potential effect this Gateway e-enforcement may have had. There are requirements for the judiciary in terms of interfaces and how to

exercise procedural rights electronically. As far as intelligence technologies develop provision for a regulatory framework with which to regulate the dynamic relationship.

The implementation of the reform for the transition to e-justice could not be achieved without a clear normative rules established by the law.

There are requirements for the judiciary in terms of interfaces and how to exercise procedural rights electronically. There were introduced rules for identifying persons in the electronic environment, there rules implemented for the adoption of procedural statements of the parties conducting electronic works issuance of documents in electronic form, and other general aspects of the exercise of procedural rights of the parties and of the judicial system.

As far as technologies develop provision for a regulatory framework with which to regulate the dynamic relationship, that is not subject to permanent regulation – these formats requirements for submitting electronic documents, interface requirements for electronic submissions, requirements for the design of the public interface of the Internet pages of the judiciary and others.

The implementation of the reform in the implementation of the e-justice is impossible without the presence of certain conditions and the possibility of conducting proceedings in electronic form. In connection with these new opportunities certain rules are created to require the judiciary to use uniform rules, procedures, technology and functional parameters in ensuring opportunities for conducting proceedings in electronic form and in the course of certification statements in electronic form. Special regulations are developed for conducting proceedings in electronic form.

DEVELOPING INFORMATION SYSTEM OF ENFORCEMENT

Pursuant to the requirements of Article 77 of the Law on private enforcement (Agents Act) [3], the obligation and responsibility of the Minister of Justice are to establish, maintain and develop the information system of enforcement (ISSI), which leads to the modern service provided by the administration and justice system. All these initiatives lead to better facilitating operational processes, improved administrative capacity for higher volume services, and promoted information security.

Since the entry into force of the Law on private enforcement (2007) till present the obligation for functioning information system of enforcement is not completed. Establishing and implementing of a portal for law enforcement is essential to the Inspectorate of the Ministry of Justice on JSA.

Creating Portal enforcement will increase operability and transparency and will increase collections, while facilitating the work of the employees and will take much of their passive duties.

The main objective of ISSI is this modern service of the administration and the judiciary through: facilitating operational processes, improving the administrative capacity for higher volume services, promoting information security.

Implementation of ISSI will significantly enhance the analytical capabilities of the administration, it will facilitate management decisions, it will improve significantly the efficiency and transparency of the enforcement authorities and administration, and it

will meet most of the growing interest in accessing public information and the provision of electronic services. In this sense, ISSI will reduce direct and current budgetary expenses of the administration of consumables, communication and human resources.

Requirements to ISSI: The system should cover all the quality of statistics and analytical information and security standards and confidentiality set by the Ministry of Justice and other institutions. It should provide the experts from the Inspectorate and the Ministry of Justice the opportunity to define new input and output statements and reports, calculations and processes, and outputs and publications.

ISSI is to be implemented as a single technological environment with common functional subsystems (modules) and sub-types in accordance with Agents Act and regulations acts. This technological environment should allow for easy addition of new modules with minimal involvement of the developer.

Range: ISSI should provide to the utmost automatically all activities related to the work of bailiffs in Bulgaria. It should serve all flows of information in each phase, ensuring consistency and integrity them to follow the process of inspections and generate different types of analytical information. The system will consist of three separate modules: module of private enforcement; module of state enforcement; modulus of inspections;

The scope of information, provided data and services must comply with all legal requirements of the Republic of Bulgaria (Agents Act [3], Concept of e-governance in Bulgaria 2010-2015 [4], Roadmap for the implementation of the Strategy for development of e-government in Bulgaria 2014-2020 [5], Strategy for development of e-government in Bulgaria 2014-2020 [6], etc.).

The aim here is to align and simplify the relevant procedures without substantially alter their nature and optimizing the outcome. It is expected to develop new methods for automated electronic exchange of information while ensuring the protection of the data and the inability to be subject to unlawful actions by unauthorized entities, including within the same host or store of the administration.

INTELLIGENCE TECHNOLOGIES IN HUMAN RESOURCE DEVELOPMENT

Intelligence technologies enable the prompt analysis (cleaning, investigating and making conclusions) of data by people that do not have special skills in data analysis. By Stefan Sfrohmeier and Franca Piazza, “potential or Artificial Intelligence in Human Resource (HR) Management is explored in six selected scenarios:

- turnover prediction with artificial neural networks,
- candidate search with knowledge-based search engines,
- staff rostering with genetic algorithms,
- HR sentiment analysis with text mining,
- resume data acquisition with information extraction,
- employee self-service with interactive voice response” [7, p. 149].

The most difficult task in HR Development is to determine the effectiveness of training costs due to its branching and sophisticated feedback caused by improved production results of staff who took part in it. The aim of the HR Development system is to make the knowledge, skills and experience of the staff correspond to the desired indices at different levels: enterprise strategy, branch activity, work duties. The specification of employees who need this training, its content and duration is the supposition of the effective work of HR Development. The period during which learning outcomes have an impact on the performance of the company depends on many external factors regarding the company. Considering that the disclosure of financial opportunities for training and implementation of training going on for some time, changes in the financial situation of the enterprise affecting some delay on parameters that characterize training.

As an example of Artificial Intelligence used for HR Management we consider determining the impact of performance of the company (labour costs, labour costs per person, income, profit, profit per person) on indicators characterizing the personnel training, the analysis of this relationship for ALC "Severodonetsk factory of chemical non-standard equipment" (Table 1).

Table 1 – Financial results, labour costs and share of employees trained in ALC "Severodonetsk factory of chemical non-standard equipment" in 2007-2014

Index	2007	2008	2009	2010	2011	2012	2013	2014
Number of employees	231	274	272	272	273	314	321	286
Labour costs, ths. UAH	4254,0	5849,6	2718,2	5044,5	6078,6	7109,6	6849,8	3640,0
Labour costs per person, ths. UAH per person	18,42	21,35	9,99	18,55	22,27	22,64	21,34	12,73
Income, ths. UAH	25740	49752	46250	47233	76628	70137	96649	98151
Profit, ths. UAH	-959	6022	1823	-6825	5711	7036	10766	14098
Profit per person, ths. UAH per person	-4,15	21,98	6,70	-25,09	20,92	22,41	33,54	49,29
Number of trained employees	49	46	36	25	43	42	21	14
Share of trained employees, %	21,2	16,8	13,2	9,2	15,8	13,4	6,5	5,0

This analysis is performed on the basis of cognitive system IBM Watson Analytics (Fig. 1). This is a technology platform that uses natural language processing and machine learning. IBM Watson Analytics is an easy-to-use service for finding answers in data without downloading software. Discovery of visualization and smart solution available on the cloud, it guides data exploration, automated predictive analytics and makes creating dashboards and infographics almost effortless.

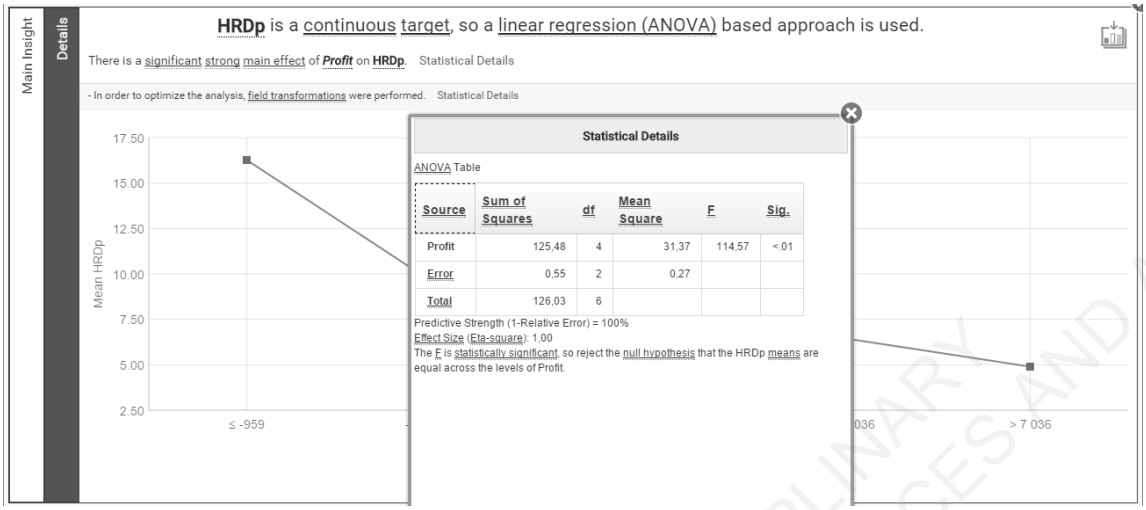


Figure 1 – Results of IBM Watson Analytics [8] analysis of data set.

Found that the main factor influencing the amount of training the company is the net income of the company for the previous year. Considering this analysis could be argued that decisions on financing of HR Development carried out on the basis of income of the enterprise in the past period.

DEVELOPMENT OF WEB BASED SYSTEM FOR BUSINESS MANAGEMENT

In the frames of project „Models and applications of information systems with distributed databases and systems with artificial intelligence" in Konstantin Preslavsky University of Shumen [9] developed and/or improving algorithms, methods and procedures for improving the efficiency of the existing or building components of new information system and systems with artificial intelligence. Tasks of the project: extracting and introducing knowledge in the intelligent systems; data analysis and extracting patterns; developing information systems with new technologies of design and programming. Basic methods of the study are mathematical and algorithmic models, experiment, comparative analysis and forecasting. The desired effect of applied scientific and methodological results is to improve the quality of education at the university.

Research aims at implementation of innovative methods and tools for training in basic and specialized courses in college and specialized software environments such as: GPSS, Mapple, MathLab, Mathematica, SciLab associated with such direction. The project is based on studies made on the subject, which are published by the participants, the results achieved under this subtask of the project are presented in the published scientific articles.

A WEB based system for business management is developed using the software environment – RUBY ON RAILS [10]. This technology allows the creation of an effective system for warehouse management and relationships with company customers. The article shows the main stages of design and implementation of this type of software

system. The new and unlearned in the university environment, RUBY ON RAILS, is used.

Extraction of the needed knowledge and filling the knowledge database in artificial intelligence systems is a difficult stage of their development. This is the focus of the next development. Proposed are UML models of the most commonly used algorithms and methods for intellectual analysis of data – Data Mining. It is suitable for both practical and educational purposes.

CONCLUSION

Information systems are selected depending on requirements to the nature of the information processing and financial opportunities. We considered it on examples of information systems in administration of justice and information systems in management of Human Resource Development.

The use of information technology in the judicial system improves the efficiency and transparency of the administration of justice and the goal is to continue the process of integration of information systems and ensuring their full applicability in the courts, the prosecution and investigation.

The effective functioning of the judiciary is essential to ensure free access to and exchange of information between the judiciary, public administration and civil society and business.

The introduction of many different information systems in the judicial system requires the provision of reliable connectivity between institutions and upgrading the skills of working with them.

Transition from discrete paradigm of information processing (programming for Turing machines) to continuous paradigm (learning of artificial intelligence) allows faster and more accurate adapting to environmental requirements. In the modern conditions of business, it becomes more relevant to use the intelligence technologies for decision making.

Implementation of research projects in Konstantin Preslavsky University of Shumen allowed to develop important practical applications. Involving external experts from other organizations and especially from business is increasingly trending in practice. This contributes to the connection between the university science and the industry practice and real applications.

ACKNOWLEDGEMENTS

The publishing of this article was possible thanks to the support of the Episkop Konstantin Preslavsky University of Shumen and its program of the development of the research project: „Models and algorithms for extracting knowledge from large data, simulating a neural networks and optimal training procedures“.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS

REFERENCES

[1] George F., Philosophical foundations of cybernetics, Abacus, Tunbridge Wells, 1979.

[2] Salomon G., Perkins, D.N., Globerson T., Partners in cognition: Extending human intelligence with intelligent technologies, Educational Researcher, vol. 20, pp 2-9, 1991.

[3] Private Enforcement Agents Act (published, SG, No. 43/2005; amended, No. 39/2006, No. 31 and 59/2007).

[4] Concept of e-governance in Bulgaria 2010-2015, MTITS, 2010.

[5] Strategy for development of e-government in Bulgaria 2014-2020, MTITS, 2014.

[6] Roadmap for the implementation of the Strategy for development of e-government in Bulgaria 2014-2020, MTITS, 2016.

[7] Strohmeier S., Piazza F., Artificial Intelligence Techniques in Human Resource Management – A Conceptual Exploration, Intelligent Techniques in Engineering Management, Cham, Springer International Publishing, pp 149-172, 2015.

[8] IBM Watson Analtycs, http://watson.analytics.ibmcloud.com.

[9] Software models and systems in teaching and research, Project RD-05-359, 12.03.2010.

[10] Nenkov N.V , Momchev E.A., Zlateva K.R., A Web-based system for management of business by RUBY ON RAILS, Collection of scientific works dedicated to the 130th anniversary of Academician Kiril Popov, vol. 1, Shumen, 2011, pp 220-228, ISSN: 1314-3912.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

INTER MUNDUS[1] – DESIGNING THE QUALITY OF HOTEL SERVICES: PROSPECT OF CUSTOMER AND MANAGER

Dr. Katarzyna Hys[1]

[1] Opole University of Technology, **Poland**

ABSTRACT

The article includes a *blueprinting* map, designed for hotel services. The project of the map was prepared on the basis of L. Shostack methodology. However the article presents an original way of map modeling for these services, namely: the process of hotel service modeling included in its scope at the same time two perspectives. Modeling of service reality was based on mapping service process taking into account the perception of buyer and manager. Designing and analysis of *blueprinting* map, made from these two perspectives, allowed i.a. for identification of key differences and similarities in service perception of customer and manager. Designed *blueprinting* map reflected actions taken during the services process, making possible the analysis of individual situations, including critical, and in a consequence determination of corrective-preventive actions.

Keywords: blueprinting, perception of buyer and manager, hotel services

INTRODUCTION

The expression „inter mundus" used in the title of the article is to illustrate to the reader the complexity of market reality [8]. The immanent feature of the market is its dual character, which practically means, that on the market continually comes to confrontation between different parties of exchange [1, 11]. All stakeholders simultaneously have different economic, legal-political, technical-technological and socio-cultural objectives, that are realized in the quantity and quality corresponding to the intentions of concerned parties [2, 10]. In a consequence realization of these objectives motivates entrepreneurs to design service process, which can lead to the efficient and effective exchange on the market [5, 9].

One of the methods enabling entrepreneurs to design service process is blueprinting. This method is a proposal of holistic expression of services providing process. It is a kind of map taking into account the image of participants' activity in the services process and their actions.

1. MEOTODOLOGY

Due to the complexity and multidimensionality of real market relations taking place between the parties of exchange, the article attempts to develop the blueprinting map. This map was projected from the perspective of the entrepreneur, who defines the

[1] Inter mundus (Latin) – between the worlds.

standards of hotel service through visualization of potential processes carried out during the service. This study is detailed, which should facilitate transfer of knowledge to the practice of management.

However, the concept of hotel service means any activity that is carried out in the hotel and tourist accommodation buildings, in which a wide range of services related to the stay of customers is being delivered. In this article, in further descriptions and analyses the author uses a general name "hotel" and "hotel service".

2. BACKGROUND

The blueprinting method in a proposal of Lynn Shostack within the range of service process modelling [12, 13]. Formulating the blueprinting map is based on mapping in details all the elements of the service process, which is implemented by employees for customers.

Due to advantages of the blueprinting method, in the literature we can find a lot of positive feedback concerning its contribution in following fields: internal marketing activities [6], process of service development [12], monitoring customer's preferences [11], service innovation [3, 66-94], service productivity, process efficiency [7, 580-591], business processes [9] and above all, within the range of management and control of existing customer service processes [12, 13]. The literature also knows applications of blueprinting in the context of specific types of services, e.g.: non-profit, health-oriented education, industrial, or the hotel [9, 606-621]. However, these studies are usually very general, which makes difficult the transfer of knowledge to the practice of management.

3. THE NATURE OF BLUEBRINTING SERVICES

The basis for blueprinting map modelling is visualization of particular stages and activities carried out by and in cooperation with the customer and an employee in the service process. The main aim of modelling is communication, analysis and control of implemented actions [4, 359-361]. For all defined actions, in the long term, there are determined targets of continuous improvement of the process. Due to the nature of the services, each service appointment is a single incident. However, we can design a core of service process - the realization of each following element of service comes within employees duties, who are expected to conduct professionally [6].

Blueprinting map presents visually sequences of actions in two-dimensional system. What is important, fundamental for mapping are actions taken by the customer - that determine the whole projection system. The horizontal axis shows chronological arrangement of actions taken by the customer and employees. While the vertical axis creates a second dimension of analysis. That means, it organizes actions according to the types of subjects and their roles in the service process. We can distinguish here groups of: customers – representing the role of a (potential) buyer and employees - taking the roles of first contact, backstage and support persons for the activities carried out in the whole process. Separation of particular stakeholder groups is additionally enhanced by introduced lines separating different zones of influence. Lines are divided into: interaction, visibility and internal connexion [12]. Which represents the relations

between: customers and front-line employees, front-line employees and backstage employees, as also backstage employees and other employees.

The blueprinting map distinguishes one more element - these are material attributes of the service. Throughout the service process there is continuous evaluation of material elements of the service carried out by the customer. Although this evaluation is not always deliberate – it influences the perception of service by the customer. As a result of combining all the elements we obtain blueprinting matrix composed of a sequences of participants' actions process, between which there are interactions.

4. MAP BLUEPRINTING - EXEMPLIFICATION

In the present case, blueprinting map takes into account actions of the customer and the hotel staff and takes into account implementation of the following stages:

- Identification of the key actions and their typical sequence called draft of the service process.
- Modelling of service process from the point of view of the customer.
- Creating direct and indirect connections and communication couplings.

After completing project activities a blueprinting map has been developed (Fig. 1). This scheme, however, requires detailed explanation. The blueprinting map has been divided into five thematic fields, that are: material aspects, customer actions, front-line personnel actions, direct actions of backstage personnel and supporting processes. These fields have further been divided with separators, which accordingly have the names of the lines: material aspects, customer and front-line personnel actions, visibility - this is the area of interaction between front-line personnel and backstage personnel, internal interactions - shows the relations at the junction of backstage personnel and those, who implement processes supporting the operation of the entire organization.

Table 1. Mapa blueprinting dla usługi hotelowej

	poza terenem hotelu	na terenie hotelu	recepcja	pokój	pozostała oferta hotelu	parking	relacje poza hotelem
physical evidence							
line of physical evidence	1	2 3	4 5	6	7	8 9	10
customer action	1	2 3	4 5	6	7	8 9	10
line of interactions							
onstage contact - employee actions	1	2 3	4 5	6	7	8 9	10
line of visibility							
backstage actions \employee actions	A	B C	D, E	F, G	H	I I	I, J
line of internal interaction							
support process	a	a b	c	d, e	f	g	g

Source: own study

4.1. PHISICAL EVIDENCE

For a customer the most important lines are: interaction and visibility lines. These lines define areas of the service process, in which the customer participates in a direct manner and evaluates the effects of all management and operational actions taken at all levels of the enterprise - also material aspects through the results of the processes that support the organization. Visit of the customer in the hotel requires his assessment of all accessible elements, including material aspects of the environment. Material aspects also allow to create the image of the organization, which is important from the point of view of the customer, particularly in comparison to the competition. In case of a hotel, among components of the environment, we can distinguish material and immaterial aspects. These aspects on one hand create quality standards of customer service, on the other hand are evaluated by the customer and influence purchase decisions. From the point of view of effectiveness and efficiency of sale, it is important to prepare the hotel service professionally. Which means, in practice, the use of all possible attributes of the hotel in order to slow down and/or exclude competition.

To the elements forming so called 'physical evidence' we may include:

- the elements outside the hotel complex:
  - website (nowadays one of the first and most important forms of communication with the customer),
  - social media (i.a. blogs, business networks, forums, portals for sharing photos, as well as reviewing products/services, social networks such as Facebook, Twitter, LinkedIn, Yelp, Youtube),
  - outdoor advertising (exposed on advertising medium i.a. such as: advertising boards, static and mobile billboards, citylights),
  - information - access boards to the hotel,
- elements inside the hotel complex:
  - car park for the customers,
  - localization of the hotel (e.g.: distance to the city centre, vicinity of other buildings),
  - development of terrain around the hotel (objects of garden architecture such as: arbores, statues, fountains, fencing, lighting; usable objects - for daily recreation such as: sandpits, swings, benches and maintain order facilities such as garbage cans),
  - hotel entrance (elevation of the building, external decoration, display window, logo- signboard, information boards),
  - room design and fitting,
  - others (e.g. aesthetic qualities, view),
- front desk - interior of the hotel:x:
  - lobby (facilities for handicapped persons and parents with children, information desk - concierge, patio),

- interior design (design, style, fitting, facilities, technology, Wi-Fi),
- additional customer service centres (e.g. spa & wellness centre, boutiques, restaurant, clubs),
- promotion materials,
- front-line personnel uniforms and appearance.

4.2. CUSTOMERS ACTIONS

Material aspects of the service are only the outer shell of the hotel. The customer assesses it, but the essence of hotel service sale is a customer service process through direct contact with employees. The diagram highlights therefore the second area called "customer actions". This sphere includes ten activities that are carried out by the customer and/or with the participation of front-line employees of the hotel. The individual processes have been labelled with numbers between 1 ÷ 10, and their detailed descriptions are included in Table 2 in the area "in the customer's eyes".

A mirror reflection of customer activity are actions taken by the hotel's front-line employees. Description of individual behaviour is included in Table 2 in the area "in the employee's - advisor's eyes", which also includes ten actions.

Table 2. Activities of customer and employee in the hotel

Activity on the interaction line			
No.	**IN THE CUSTOMER'S EYES** - customer activities	No.	**IN THE EMPLOYEE'S– ADVISOR'S EYES –** front line personnel activities
1	Browsing the Web Browsing posts in social media	1	Transfer of current information and comments to be posted on the website
2	Telephone call	2	Telephone call: booking a room and/or providing information
3	Arrival at the hotel, parking the car, unpacking luggage	3	Showing the parking, unpacking car zone, porter service (e.g. luggage trolley)
4	Entering the hotel - greeting	4	Greeting the customer
5	Formalities - accommodating	5	Checking in the client
6	Entering the room, assessment:	6	Handing over the keys and providing necessary information, preparing the room with regard to:
	room (and bathroom) decoration		interior design (room and bathroom)
	facilities (including Wi-Fi)		functionality, completeness and quality of facilities
	cleanliness		cleanliness
	comfort of use		preparing the information materials (including i.a.: provided services, attractions in the hotel and surrounding area, contact numbers, mini-bar price list, extra fees, TV channels)
7	Stay in the hotel Contact with hotel staff, assessment of the customer service standards, including:	7	Guest service during their stay Satisfying customers' needs and creating the image of the hotel by:
	employees appearance		employees appearance
	level of interest in the customer		focusing attention on the customer
	level of communicativeness		developing a relation with the customer
	substantive knowledge		providing substantive information on hotel offer
	ability to inspire confidence		individual treatment of customer
8	End of stay	8	Formalities - checking out and settlement
	expression of opinions and comments		thanking for using the services and inviting to next visit
			providing promotion materials (e.g. goodbye bag), neutralizing any negative feedback or reinforcement of

			positive, encouraging to share them
9	Leaving the hotel	9	Leaving the hotel
	packing luggage into the car		luggage assistance
	leaving the car park (parking zone)		
10	Formal customer reviews	10	Creating a permanent relation with customer - building loyalty
	entries in supported applications such as social media, filling in questionnaires		sending forms to express opinion sending invitation for stay in the hotel, newsletter etc.

Source: own study

4.3. SUPPORTING ACTIVITIES AND PROCESSES

In such meaning the scheme was adapted for hotel services. The initiative lies mainly on front-line employees, who accompany customers throughout the visit in the hotel and prepare it for the customer visit. However we have to be aware, that the hotel service consists of several stages.

The customer of the hotel assesses service, which he is experiencing. All the material and immaterial attributes, which are elements of services setting are previously planned and organized by the management and supportive staff. Employees are trained for effective sale of the service, and the effects of their work are monitored and controlled. As a result of coupling (customer-employee relation) a corrective-preventive actions might be taken, which are to result in developing the best standards of customer service. That is why the blueprinting scheme (table 1) includes direct actions and support processes carried out by the backstage personnel. A detailed list of activities is included in Table 3.

Table 3. Supporting activities and processes

no.	**DIRECT ACTIVITIES OF BACKSTAGE PERSONNEL**	no.	**SUPPORTING PROCESSES:**
A.	Website: creation, changes, updates, answering questions - interaction	a.	HEADQUARTER: The computer system supporting customers registration/transfer of information
B.	Telephone contact with the customer - connecting with the appropriate unit / transfer of basic information		
C.	Maintaining cleanliness inside and outside the hotel	b.	Tidying and maintenance system
D.	Promotion materials: design, delivery, update	c.	Marketing service and technical support system
E.	Supplies and office materials: preparation and delivery		
F.	Preparation of the hotel and all other objects to serve customers (documentation including permissions, attestations)	d.	Technical support system Tidying and maintenance system
G.	Infrastructure and service standards in other service points: gastronomy, a selling point of company's gadgets, recreation	e.	Sale support system - handling of other service points, which are located in the hotel
H.	Headquarter guidelines concerning terms of use of the hotel, model documents and other formalities	f.	Decisive system
I.	Passing information, after customer visit, concerning e.g. quality of work, needs, requests, information on the competitive offer etc. to the relevant departments	g.	Marketing and decisive system
J.	Feedback - introducing changes under the influence of recommendations, postulates (redefining the offer, standards of customer service)		

Source: own study

The activities contained in Table 3 are not seen directly by the customer. Customers benefit from the effects of work of many people, who they usually do not meet, and often are not aware of their existence. At the same time meeting the standards of

customer service without these works would not be possible. Therefore, these actions are placed behind the line of visibility - which in practice means, that the customer does not have direct access to them. These works, however, are necessary and implemented by the backstage employees at the strategic, tactical and operational level.

CONCLUSION

The purpose of blueprinting map presented in the work, was to show the nature of relations between the two worlds - the provider and the recipient. In the method a modelling of dynamic service process is carried out, having regard to the perspective of customer and all employees involved in the implementation of this process. Modelling of reality service consists in here on making the effort of mapping and analysing, and then creation of the process service realization having regard to the perception of the buyer. Presented in the article, the original map of process handling for the hotel service includes elements, that create sequences of actions. Whereas comparative list of activities and goals, which determine behaviour of the parties of exchange, allows for visualization of processes within individual transactions and their improvement. Blueprinting method allows for visualization of activities, thereby enables the analysis of individual situations and taking corrective-preventive actions. When abnormalities or threats are found, the organization can make modifications that will positively affect the perception of the offer by the customer. So it constitutes a kind of a self-assessment method of activities taken by the employees of the organization in the context of their effectiveness.

REFERENCES

[1.] Bębenek P., Development of employee competencies and their impact on safety at work [in:] Krzyżaniak S., Logistyka, Poznan, 2, 2016.
[2.] Bębenek P., Review of proposals of Innovation Solutions [in:] Malik K., Dymek Ł., Effective Transfer of Knowledge from Science to Industry in the Opolskie Voivodeship. Requirements for an Effective Cooperation, DIFIN SA, Warsaw, pp. 165-175, 2015.
[3.] Bitner M.J., Ostrom A.L., Morgan F.N., Service Blueprinting: a practical technique for service innovation, California Management Review, 50/3, 2008.
[4.] Coderre S., Woloschuk W., Mclaughlin K., Twelve tips for blueprinting, Medical Teacher, p. 31, 2009.
[5.] Hawrysz L., Foltys J., Environmental aspects of the social responsibility of the public sector organization, Sustainability, Vol. 8(1), pp. 1-19, 2016.
[6.] Hawrysz L, Patronage vs. implementation of the Corporate Social Responsibility (CSR) concept in the public sector, Advanced Research in Scientific Areas, EDIS - Publishing Institution of the University of Zilina, Vol. 2, pp. 184-187, 2013.
[7.] Hys K., Tools and methods used by the Polish leading automotive companies in quality management system. Results of empirical research, Journal of Achievements of Materials and Manufacturing Engineering, 63/1, pp. 30-37, 2014.
[8.] Hys K., ISO 9001 – Certificates by industrial sector in the world as a key decision variable, Manager, 22, pp. 7-18, 2015.

SCIENTIFIC SOCIETY INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SCIENCE AND ARTS SGEM 2016

[9.] Kozel R., Mikoláš M., Vilamová Š., Chuchrová K. and Piecha M., Porter's Analysis as a Standardized Process Applicable in Industrial Companies, Komunikacie (Communications), 18/1, pp. 79-84, 2016.
[10.] Maj., Diversity management's stakeholders and stakeholders management [in:] Popa I., Dobrin C., Ciocoiu C., Proceedings of the 9th International Management Conference, Management and Innovation for Competitive Advantage; Buchares, pp. 780-793, 2015.
[11.] Maj J., Walkowiak Ł., Diversity Management in Polish Organizations [in:] Proceedings of The 4th International Virtual Conference on Advanced Research in Scientific Areas (ARSA-2015), No. 4, EDIS - Publishing Institution of the University of Zilina, Zilina, pp. 79-82, 2015.
[12.] Milton S.K., Johnson L.W., Service blueprinting and BPMN: a comparison. Emerald Group Publishing Ltd., Managing Service Quality, 22/6, 2012.
[13.] Randall L., Perceptual blueprinting, Managing Service Quality, 3/4, 1993.
[14.] Shostack G.L., How to Design a Service?, European Journal of Marketing, p. 16, 1982.
[15.] Shostack G.L., Designing services that deliver, Business Harvard Review, p. 62, 1984.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
S G E M 2 0 1 6

INTERNATIONAL ASSIGNMENT PROCESS IN ORGANIZATION: EXPATRIATES AND REPATRIATES PERSPECTIVE

Assistant professor, Dr.psych. Solveiga Blumberga

Daiga Treiliņa
"RISEBA" University of Business, Arts and Technology, **Latvia**

ABSTRACT

Contemporary global business competitiveness depends on flexibility and adaptation skills. If, for the implementation of specific goal, appears lack of human resources, then subcontractor services or look for internal resources at the global level are used, so workers go on international assignments. International assignments have become topical in recent years, when the national borders have become more and more fragile, and companies develop their activities at international level. When going to international assignment, each expatriate experience psychological change circle. If the process is not well coordinated and expatriate or repatriate may decide to go home without reaching the objectives - international assignment is unsuccessful. To decrease the number of unsuccessful international assignments, it is necessary to analyse existing processes, understand the weaknesses of the process and figure out how to avoid or reduce these weaknesses. The goal of the study is to find out, what is the main shortcomings of international assignment process from expatriates and repatriates perspective, to improve global mobility team processes. With the study authors want to answer following questions: How international assignment process is evaluated by expatriates and repatriates? How international assignment process is evaluated by managers and personnel specialists? The data of the research is gathered with two surveys created by the authors: one for expatriates and repatriates, other for managers and personnel specialists. The results show that more than a half of expatriates and repatriates goes to international assignment together with their families. The reason, why expatriates and repatriates want go to international assignment, are opportunities for international experience and a possible career development. The highest stress for expatriates and repatriates is connected with difficulties to find a suitable residence and kindergarten / school for children. Conclusions: most of the repatriates in the current work use competences and skills acquired during the international assignment and international assignment has opened the way for career growth. The main reasons why expatriates return earlier are: expatriates family cannot adapt to the new situation or expatriates personality is not suitable for international assignment. There is not sufficiently performed preparation of expatriates and repatriates for international assignments in organizations, personnel specialists are minimally involved in the international assignment process.

Keywords: international assignment process, expatriates, repatriates

SCIENTIFIC PROCEEDINGS OF INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE SOCIETY, SCIENCE AND ARTS

INTRODUCTION

Global business competitiveness depends nowadays on their flexibility and adaptation skills. If human resources appear insufficient for the implementation of specific goal, subcontractor services are used or internal resources are searched on global level. Implementation of certain goals requires the use of exclusively internal resources, so that employees have to go on international assignments. It is crucial to clearly define the purpose of international assignment so that the employee understands what is expected from them during the assignment and what can they expect from the company when they return from assignment [4]. When going on international assignment, each expatriate experiences the circle of psychological changes that forms from the following stages: preparing to international assignment; arrival to the assignment destination; adaptation to the new circumstances; work at the country of international assignment; preparing to return home; returning to the home country; adaptation to the circumstances at the home country [7]. Failure to successfully coordinate this process, lack of relevant information or failure to adequately appreciate the expatriate's performance or other negative factors can make them to return home without achieving the set goals – the international assignment is then unsuccessful. Analysis of the existing process, identification and preventing or minimization of the shortcomings is required to minimize the number of unsuccessful international assignments and ensure that employees are satisfied with the experience gained from international assignment. Globalization offers countless challenges and opportunities to entrepreneurs [5]. Increasing number of businesses elect to operate globally, and globalization affects most of business industries. The businesses that operate on global market compete with each other [3]. Brewster with group of authors [2] point out to the following strategic reasons for international assignments of employees: professional development; exchange of knowledge; exchange of special skills; control; coordination. A business can send employees to short-term or long-term international assignments with the view to improve competitiveness and increase competences of the employees. The employees sent on long-term or short-term assignments are called expatriates. Bandielf and Kay [1] explain that expatriate means an employee who works abroad, usually upon assignment by the business or from the employee's country of origin. The key stages of international assignment include selection and training of employees, followed by transfer of employee to the new country. The second stage is adaptation to and acceptance of the new circumstances. When the employee completes the international assignment and returns home, this process is called repatriation. After repatriation, the employee either continues employment with the organization or leaves for some reasons. Global mobility turns into trend, and a number of employees seek international experience to promote their personal growth and career development [8]. The increase in number and complicated nature of international assignments has led to perception of global mobility specialists not only as performers of support functions. The support functions are now supplemented with the role of advisor and strategic role of partner in the international employment management [6]. Goal of research: To identify the substantial shortcomings of international assignment in information technology organization. Issues of study: How international assignment process is evaluated by expatriates and repatriates? How international assignment process is evaluated by managers and personnel specialists?

MATERIALS AND METHODS

4 questionnaires developed by authors have been used in conducting the study: questionnaire for expatriates; questionnaire for repatriates; questionnaire for direct managers; questionnaire for personnel specialists. The total number of respondents is 65 employees of information technology organization in Latvia. Questionnaires for expatriates were distributed to 16 employees currently performing international assignment. Questionnaires for repatriates were distributed to 22 employees performing international assignment during the last two years and currently returned to their home country. Male employees are sent on international assignments on most occasions. The average age of expatriate and repatriate respondents is 26-45 years (male employees), and this means that 26-45 years old employees are most frequently sent on international assignments; all respondents have university degree. The age of 15 respondents managers is 26-55 years (male employees), and the age of respondents personnel managers is 26-63 years (female employees).

RESULTS

Questionnaire for expatriates was developed with the view to identify the opinion of expatriates currently performing international assignments on the international assignment process in the organization. Summary of data obtained from the 1st questionnaire shows that expatriates sent on international assignments most of all lack information about expected assessment of their performance during the assignment, about the vacation procedure and possibility to travel home; about the local legislation and local habits. Some questions were asked to find out what bothered the expatriates most of all when they went on international assignment (see Figure 1).

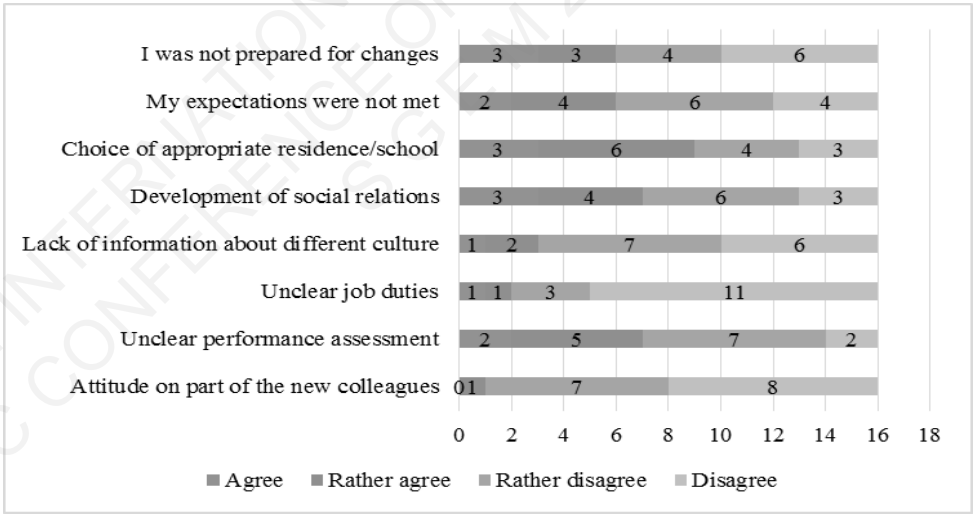


Figure 1. Difficulties faced by expatriates sent on international assignment

Figure 1 illustrates the difficulties faced by expatriates sent on international assignment. Assessment of the proposed statements shows that expatriates find the following to present key difficulties: to find appropriate residence and kindergarten/school (38%); to develop social relations in the new country (25%); lack of information about expected assessment of their performance (31%). Responses received from respondents to other questions of the questionnaire show that expatriates have experienced no culture shock in the new country or any adaptation difficulties. Most of expatriates agree that adequate preparing/training would facilitate adaptation to the new circumstances and also

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY

improve their performance. It means that more attention to this process would serve the business interests. Respondents point out that no process is established for assessment of expatriates' performance. Responses to this question show that performance is assessed at each manager's discretion, and therefore quite a large number of expatriates (31%) receive no assessment at all. Respondents (50%) feel concerned with returning to their home country and the office to be held after returning; this means they lack clear vision of what they would do after returning. In spite of the above-mentioned, all respondents agree with the statement that they would recommend their colleagues to undertake international assignments.

Questionnaire for repatriates was distributed with the purpose of identifying the opinion of repatriates on the international assignment process in the organization. Half of the respondents (50%) stated they had been sent on international assignment without checking whether or not they are suitable for such assignment; 86% decided to accept the international assignment because they believed it was an excellent opportunity to gain international work experience and expected career development upon completion of assignment. The responses show that expatriates rely on and expect that their experience would be taken into consideration and a better position would be offered when they return from international assignment.

Repatriates, on their turn, in reply to the question about what have they missed most of all during their international assignment listed the following information: habits, policy and religious beliefs in the country of assignment; expected arrangement of repatriation; assessment of their performance during the assignment; peculiarities of cross-culture communication; and the local legislation. Data obtained from the respondents show that the following issues have presented most difficulties to the repatriates: inability to find appropriate residence and kindergarten/school; insufficient preparedness to international assignment. Knowledge of the above-listed aspects enables the business to develop an action plan for their minimization.

All (100%) respondents agree that preparing/training of personnel prior to international assignment would facilitate their adaption in the new country. 91% of respondents express their willingness to share information about the gained experience with other colleagues sent on international assignment to the same country the repatriates have returned from; all respondents (100%) are willing to help other colleagues sent on international assignment to the same country the repatriates have returned from by sharing the relevant information and providing support; they positively assess the experience gained during international assignment.

Questionnaire for direct managers was developed with the view to identify the opinion of managers of the former expatriates, both in their home country and country of assignment, on the international assignment process in the organization. 72% of respondents pointed out to importance of checking whether or not the candidate is suitable for the given international assignment. The replies show that prior to proposing assignment to the potential expatriate, most of the managers have conducted interviews to check suitability of candidates for the assignment.

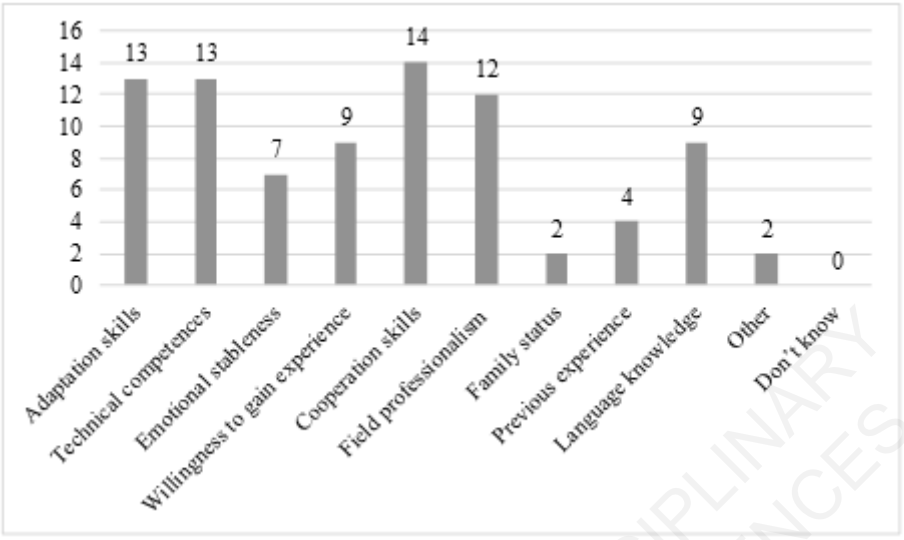


Figure 2. Criteria to be taken into account in selection of candidates for international assignment

All respondents (100%) have replied (see Figure 2) that the key criterion to be considered upon selection for international assignment is cooperation skills. 93% believe it is adaptation skills and technical competences, 86% think field professionalism is the criterion; 65% believe language knowledge is a relevant criterion, and 50% believe emotional stableness should be taken account in selection. The main 3 criteria upon selection for international assignment include: cooperation skills, technical competences, and adaptation skills.

A number of questions were aimed at identifying the managers' opinion on the reasons why expatriates fail to succeed and return ahead of schedule: what are the reasons that trigger the desire to leave ahead of schedule (see Figure 3).

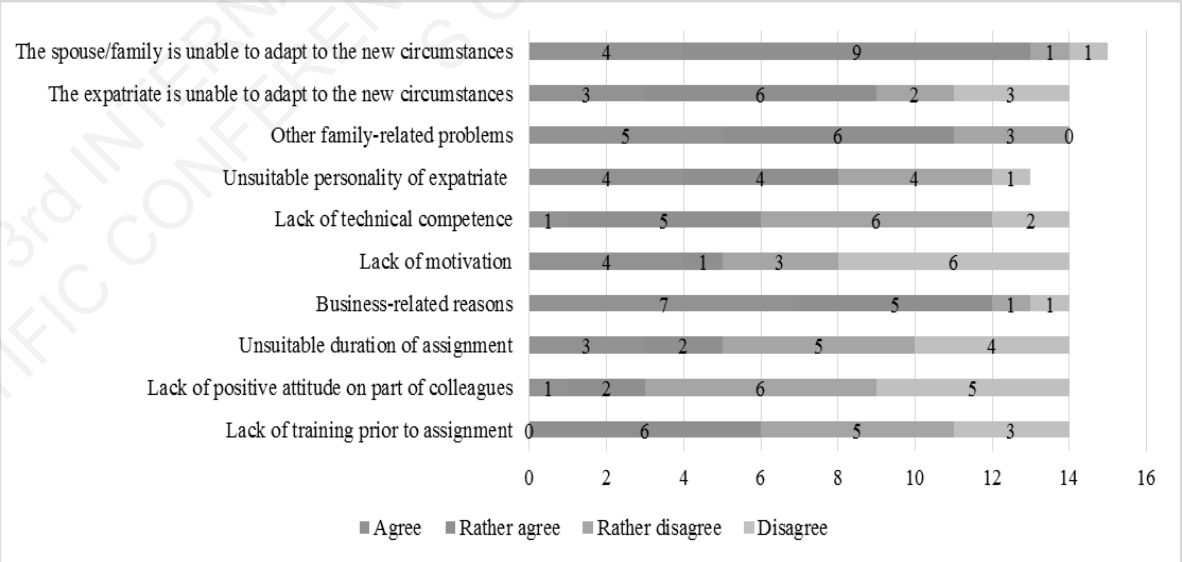


Figure 3. The reasons for expatriate returning ahead of schedule

Figure 3 shows that the most common reasons for expatriate returning ahead of schedule include: inability of the expatriate's family to adapt to the new circumstances,

business-related reasons (50%); expatriates have experiences other family-related problems (36%); expatriates are unable to adapt to the new circumstances (43%); and personality of expatriates is unsuitable for international assignment (31%). Respondents (20%) also note their performance is assessed by direct manager in the home country; 60% reply that assessment is made by direct manager in the country of assignment; 20% reply that performance assessment is made by managers both in the home country and the country of assignment. All mangers have replied that performance assessment is made, however they have different opinions on which of the managers is responsible for assessment.

Questionnaire for personnel specialists was developed to identify the opinion of personnel specialists of the former expatriate at their home country and country of assignment on international assignment process in the organization. 67% of all respondents confirm they have been involved during the stage of settlement of the necessary formalities. Summary of all replies to this question highlights that involvement of personnel specialists in the international assignment process is minimal; on 50% of occasions the personnel division is attracted to personnel selection for international assignments, and on the other half of occasions they are not involved. The questions were asked with the view to identify the key criteria to be taken into consideration upon personnel selection for international assignment (see Figure 4).

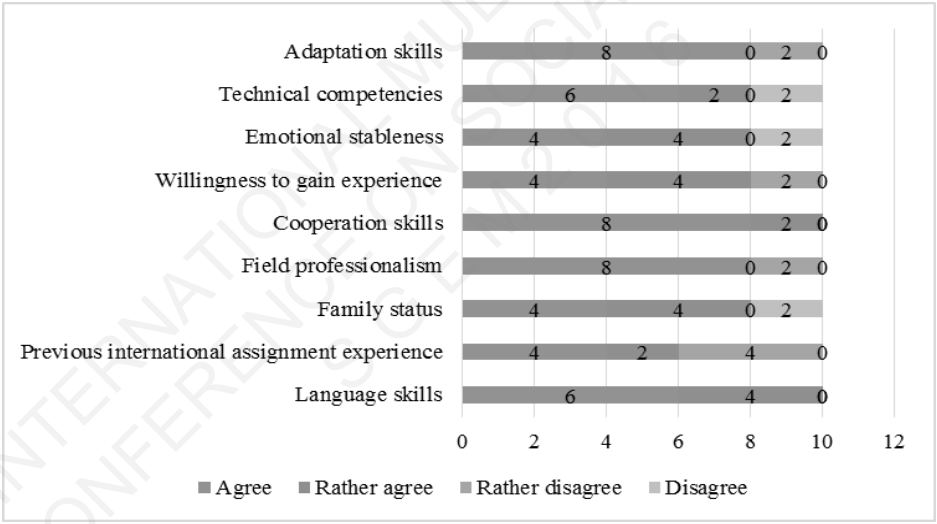


Figure 4. Criteria to be taken into consideration upon selection for international assignment

Figure 4 shows that, in the opinion of personnel specialists, the key criteria to be considered upon selection for international assignment include: cooperation skills (80%); language skills (60%), and field professionalism (80%).

What are the reasons why expatriates fail to succeed and return home ahead of schedule (see Figure 7). In reply to other questions, personnel specialists believe that the occasions where expatriates return home ahead of schedule are triggered by: family-related issues (80%); unsuitable duration of assignment (50%); and also lack of preparing/training prior to going on international assignment (77.78%). Analysis of replies to the above statements shows that, in the opinion of personnel specialists, preparedness prior to the international assignment would facilitate the employees' adaptation in the new country and improve their performance; on most occasions

personnel specialists are not involved in personnel assessment process. Authors of the work have conducted correlation analysis using the Spearman correlation ratio, however no statistically significant relations were identified.

DISCUSSION

Global mobility team is engaged in calculation of costs, contract drafting, cooperation with subcontractors, etc. Other stages of international assignment process depends on the country to which the expatriate is assigned. The studied organization has not established any process for personnel selection prior to international assignments. The managers point out that on most occasions they conduct interviews before adopting decision on the most suitable candidate for international assignment; however approximately one half of expatriates and repatriates state no interviews have ever been conducted with them. On most occasions expatriates and repatriates feel no culture shock in the new country or adaptation difficulties, and they have not experiences any adaption difficulties that would affect the performance of respondents. The key problems experienced by expatriates and repatriates include finding a suitable residence and kindergarten/school for their children. People have better understanding of arrangement of the process before than after the actual process. Results obtained from the questionnaires developed by the authors confirm that essential improvements are required to the international assignment process. Personnel division should develop an easy-to-understand description of global international assignment process including detailed process steps and responsible officials, and conduct thorough analysis of job requirements and analysis of the country of assignment before the personnel selection process for international assignment, and develop the "fellow" system so that repatriates share information about the gained experience with their colleagues who are preparing to go on international assignment to the country where the repatriate has been; to develop adaption programs in assignment countries; to develop guidelines for assessment of expatriate performance. The guidelines should clearly specify the duties and responsibilities of expatriates, the duties and responsibilities of managers, as well as the duties and responsibilities of personnel specialists or managers involved in the process; to keep records of the international assignments terminated ahead of schedule to identify the reasons of early termination.

CONCLUSIONS

More than one half of expatriates and repatriates have been going on international assignment together with their families, and this means it is crucial for them to collect information about children-related matters such as availability of kindergartens, etc.

Expatriates and repatriates elect to go on international assignments because of the opportunity to gain international experience, and also because career development is expected after the assignment; higher remuneration is not among the key reasons for going on assignment. Both expatriates and repatriates lack information before going on international assignments bout the assessment of their performance during the assignment; the replies regarding performance show that the company has not developed or communicated the expatriate performance assessment process and performance assessment is a matter of each manager's discretion; therefore, a fairly high number of expatriates receive no assessment at all.

In the managers' opinion, the key reasons for expatriates return ahead of schedule include the following: the expatriate's family is unable to adapt to the new

circumstances, for business reasons; the expatriates are unable to adapt to the new circumstances; ant the expatriates' personality is not suitable for international assignment. Personnel specialists are involved in the international assignment process to minimum extent, and mots of personnel specialists only learn about assignment during the document drafting stage. Information technology organization incurs fairly high costs for international assignments, and it is therefore important to ensure qualitative administration of international assignment process where all stakeholders fully understand the process and their responsibilities. The conducted study can be used by global business mobility team, personnel specialists in various organizations to which/from which expatriates are assigned.

REFERENCES

[1] Banfield P., Kay R., Introduction to human resource management, USA, 2008.

[2] Brewster C., Sparrow P., Vernon G., Houldsworth E., International Human Resource Management, 3rd Edition, UK, 2011.

[3] Cueto J., Sanchez J., Validity of Context-Specific versus Broad Individual Differences in International Assignments, Revista de Psicologia del Trabajo y de Las Organizaciones, vol. 27 / issue 1, pp 5-15, 2011.

[4] Krell E., Taking Care of Business abroad. HR magazine, vol. 56 / issue 12, pp 44-48, 2011.

[5] Moorhead G., Griffin, R., Organizational behavior: managing people and organizations, USA, 1998.

[6] Robb A., Au A., The Changing Role of Global Mobility – Strategic Or Supporting Function? International HR Adviser, 2015

[7] Sussman N.,Working Aborad and Expatriate Adjustment: Three Disciplinary Lenses for Exploring the Psychological Transition Cycle of International Employees, Social & Personality Psychology Compass, vol.5 / issue 7, pp 393–409, 2011.

[8] Vorhauser-Smith S., Global Mobility: A Win-Win For You And Your Employer. Forbes, 2013.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

INVESTIGATION OF THE REASONS AND IDENTIFICATION OF CYCLIC RECURRENCE IN INTENSIFICATION OF THE RESOLUTION OF THE PROBLEMS OF THE RUSSIAN ECONOMY'S ENENERGY EFFICIENCY ENHANCEMENT

Prof. Alexander Melnik

Assoc. Prof. Olga Mustafina

Kazan Federal University, **Russian Federation**

ABSTRACT

A high level of energy intensity is still the largest problem of the domestic economy. The resolution attempts are given much prominence at all levels of administration. Energy efficiency enhancement has been included among the most significant priorities of the domestic economy's development. However, notwithstanding the measures taken, energy consumption level in Russia is still 2-4 times higher in comparison to the analogous indicators in the developed countries. The paper is focused and is investigating the reasons of the Russian economy's high level of energy intensity maintaining factors. The retrospective analysis of the domestic economy's development in interrelation to legislative and regulatory activity in the sphere of energy saving has been carried out for the resolution of the task assigned. The materials of the State Federal Statistics Service, Ministry of Energy and Ministry of Economic Development of the Russian Federation, as well as a number of other official sources, introducing data on economic position of the country and measures taken in the sphere of energy efficiency enhancement - were employed as an informational basis to the present paper preparation. The study shows clearly traceable cyclic recurrences of intensification of the efforts, directed at implementation of the various types of programs in the sphere of energy efficiency enhancement of the Russian economy. It has been found that the current condition of the country's economy is a primary cause, exerting a definitive influence upon the intensification of different management structures' operation. In times of crisis, characterized by a decrease in gross domestic product and a decline of production in various sectors of the economy, the intensification of activity in the area of energy saving and energy efficiency enhancement is being observed. Reducing energy intensity of production is considered as one of the most important directions, ensuring the economy's way out of crisis. It is at these times when legislative and regulatory activity tends to intensify. During the periods of the economy's progressive development much less attention is given to the solution of this issue, as targets of its development under favorable market conditions are achieved primarily through the growth of volume rates in various sectors. That being the case it has become possible to identify the stages of intensification of the efforts, undertaken to enhance energy efficiency of the Russian economy. The detected cyclic recurrences are a major reason, restraining its energy intensity reduction. Currently taken measures may not be sufficiently effective on the long run, due to the identified feature of energy saving management. These are only systemic and sustained actions in the sphere of energy

SCIENTIFIC MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS

saving, which could possibly create a necessary basis for a fundamental change in the ongoing situation.

Keywords: energy saving, energy efficiency enhancement, energy intensity of production

INTRODUCTION

The most important problem of the Russian economy, significantly restraining increase of its competitiveness, is still a high energy intensity level of production. More recently, the solution to this problem was not given much importance, mainly due to the presence of significant reserves of various types of energy on the territory of Russia. The favorable situation on the international commodity markets allowed to constantly generate financial resources from their sale, not contributing to the solution of this problem. However, current conditions, characterized by a high degree of instability of the environment, as well as the continued tightening of sanctions from foreign countries in addition to a significant decline of energy prices, determine the objective need to improve the functioning of the Russian producers through various factors, including, first and foremost, the increase of the energy efficiency.

It should be noted, that in recent years energy conservation and energy efficiency have been included among the top priorities of the Russian economy. However, despite the measures taken, the Russian economy's energy intensity level is still from 2 to 4 times higher than in the developed countries. Thus, a comparison between different countries makes it possible to create some basic assumptions. Firstly, Russia is one of the largest consumers of energy resources. According to this indicator, it ranks third in the world after the US and China. Secondly, Russia is at the same time one of the least efficient energy consumers. If we compare the rate of energy intensity of gross domestic product (GDP) among the countries - the largest consumers of energy resources, then Russia's GDP is the most energy-intensive (Figure 1.). Energy intensity of GDP in Russia is twice higher than in the US, three times higher than in Japan, and four times higher than in the UK.

Various experts highlighted a number of reasons for the high power intensity of the Russian GDP [1, 2]. These include the impact of climatic factors, the current structure of the economy with a predominance of energy-intensive industries, the technological backwardness of a number of industries and depreciation of fixed assets, amounting on an average to 40% today, and in some areas to more than 50% [3].

SCIENTIFIC INTERNATIONAL SOCIAL SCIENCES AND ARTS

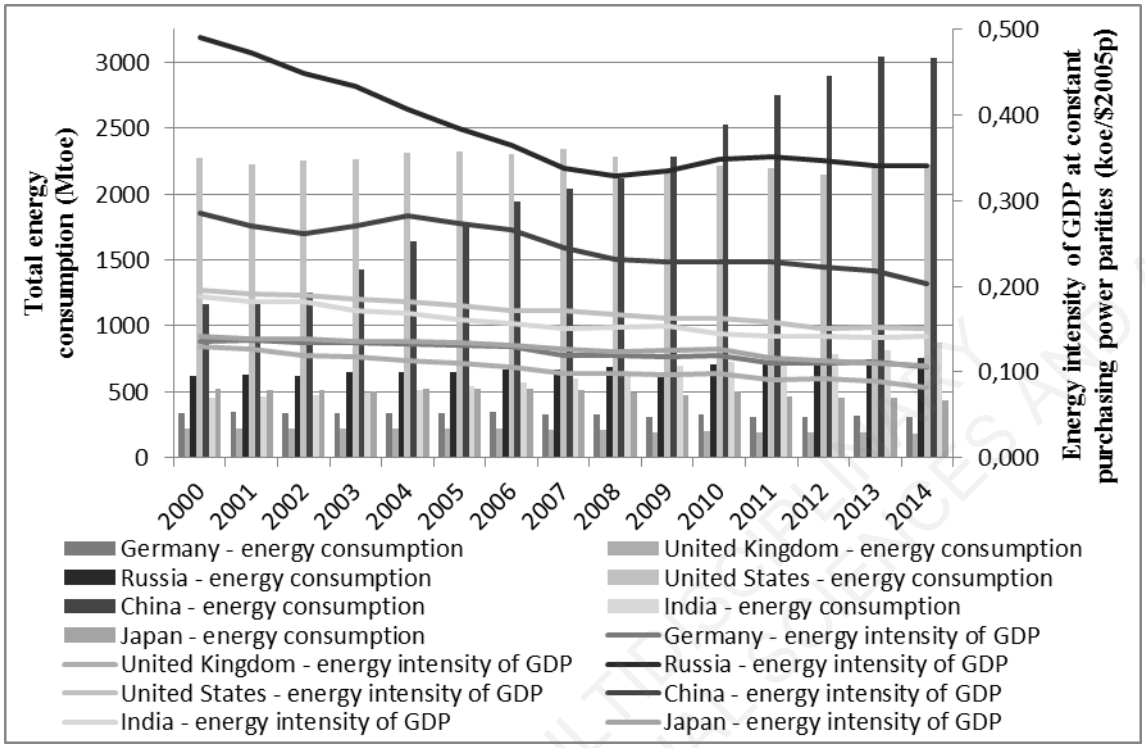


Fig. 1. Dynamics of consumption of energy resources and the energy intensity of GDP in different countries [2]

Increased attention to this problem and the efforts made in this direction, have led in recent years to some positive results. For instance, for the period from 2000 to 2014 the energy intensity of GDP had been reduced by an average of 2.6% per year. A higher reduction rate of 3.2% per year was only in the UK. However, selected for an analysis period from 2013 to 2014, demonstrates that the situation is not so favorable. Reducing the energy intensity of GDP has slowed down considerably and has become so small, that the average annual reduction of energy intensity tends to zero, while it was 8.9%, in Japan, in the United Kingdom - 6.9%, and in Germany - 5.4% (Fig. 2).

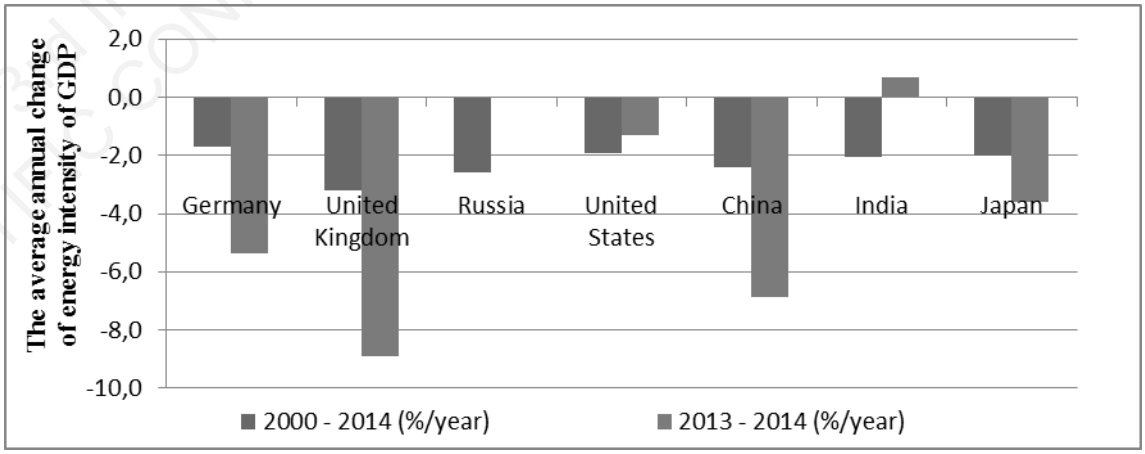


Fig.2. Changing the energy intensity of GDP in several countries [3]

All this suggests, that the rapidly implemented and cost-effective measures, aimed at identifying and addressing main and observable energy losses, together with the formation of the basic rules and regulations of energy consumption, totally exhaust the potential to further reduce energy consumption and improve energy efficiency. Moreover, the analysis of the problem suggests that there is some periodization of intensified efforts for the implementation of various types of programs in the field of energy saving and energy efficiency of the Russian economy. In this regard, the main objective of the study has become the confirmation of the existing cyclicity of the measures undertaken at various levels of management in the area of energy conservation and energy efficiency, as well as the identification of the causes of this recurrence.

MATERIALS AND METHOD

A retrospective analysis of the development of the Russian economy that has been carried out to solve this problem, allowed to detect changes in the results of its operation in conjunction with measures of state regulation. Thus, the period from 1995 to 2016 has been determined for investigation purposes. This period was further divided into three crisis periods in Russia. On the one hand, the development of Russian economy indicators, including GDP and the consumption of energy resources were taken as an object of study; on the other hand, the legislative and regulatory activity of the state bodies in the sphere of energy saving. The first stage analyzed the impact of changes in the general economic situation in the country on the amount of energy consumption and energy intensity of GDP. The second stage evaluated the intensity of measures aimed at reducing energy consumption and improving energy efficiency. Materials of Federal Service of State Statistics, of Ministry of Energy, Ministry of Economic Development of the Russian Federation and other official sources have been used for information references, revealing data on the economic situation of the country and implemented in the field energy efficiency improvement measures.

RESULTS

At the first stage of the study there were distinguished three periods of crisis characterized by a reduction in GDP and industrial production index. They cover the periods of 1998-1999, 2008-2009 and 2014-2016 years. According to the logic of the argument, the decline in industrial production over the years should lead to a reduction in energy consumption. However, despite the decline of the production in the country, the significant reduction in energy consumption did not occur (Fig. 3). Therefore, it is logical that the preservation of the volume of consumption of energy resources while reducing production volumes led to an increase in energy intensity.

Basic mechanisms of energy management in Russia are manifested through the means of state regulation in this sphere of activity. A major factor, largely determining the dynamics of the energy efficiency of the economy, is the degree of elaboration of an appropriate regulatory framework. In this regard, the analysis of legislative and regulatory activity in the field of energy saving was carried out at the second stage.

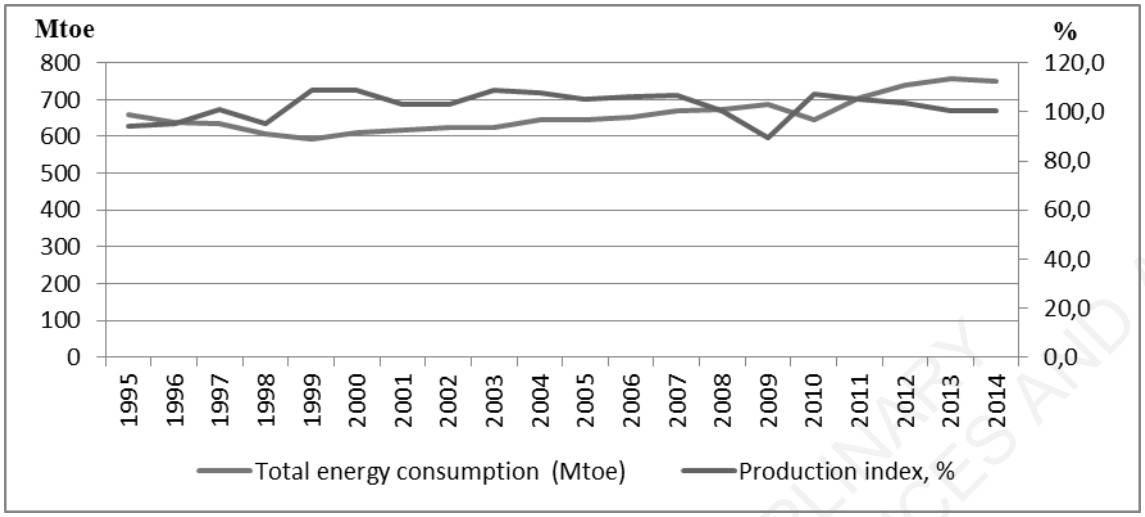


Figure 3. Dynamics of changes in energy consumption and the index of industrial production in Russia [3, 4]

It should be noted that the basis for the functioning of the national economy, including the conditions of formation of its energy efficiency, is governed by the basic regulations, including the Russian Constitution, that divides powers between the various authorities; Civil Code of Russian Federation, which regulates the civil aspects of energy supply to consumers; and the Code of Administrative Offences of Russian Federation, providing for responsibility of heads of enterprises and organizations for the wasteful use of energy resources [5]. The basic documents establishing the requirements for energy efficiency have been the state standards from the moment of approval in 1986.

The analysis clearly shows cyclicity that is found in the intensification of efforts aimed at the implementation of various events in the field of energy conservation and energy efficiency of the Russian economy. The first stage of revitalization of legislative activity in this area took place at the end of the 1990s. At that time, there was adopted a package of legal documents, including the Russian Federation Government Decree "On urgent measures for energy conservation," the Federal Law "On energy saving" and a series of orders of various ministries and departments to ensure the necessary conditions for carrying out the work in energy saving. The next stage clearly demonstrates increased activity in the field of energy conservation at the time when Russian economy overcame crisis of 2008 and covers the years of 2009-2011 (Fig. 4.). During this period, energy efficiency is given special attention at all levels of government [6]. At that time energy efficiency and energy conservation are for the first time included among the priorities of development in science, technology and engineering. Then the "Energy Strategy of Russia until 2030" was adopted. Also, new Russian program "Energy saving and energy efficiency for the period until 2020" was approved. "On energy saving and increasing energy efficiency" became the Federal Law. In addition, a number of federal laws, directives and regulations in the field of energy efficiency was adopted by the Russian Federation Government.

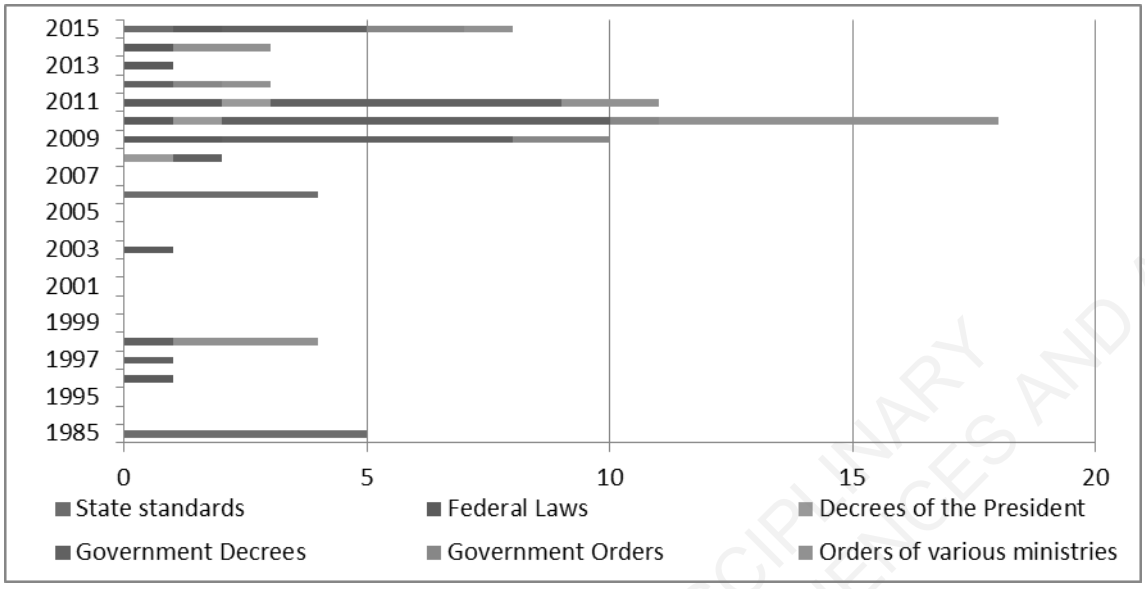


Figure 4. The dynamics of the adoption of legal documents in the field of energy efficiency and energy conservation in Russia [7]

The third stage in the revitalization of the energy saving could be linked to years 2014 - 2015. This period is also associated with the need to get the economy out of the current crisis. On the background of the external problems the attention to the high energy intensity of production is being intensified once again. Energy saving and energy efficiency are viewed as priority scientific problems that require urgent solution at the different levels of economic management. The new national standard for the measurement and verification of energy efficiency is approved. A number of decisions and orders of the Government of the Russian Federation relating to energy conservation is passed. In the spring of 2016 there was approved the "Strategy of development of housing and communal services till 2020", that allocated increase of energy efficiency sector among the key areas of its realization.

Thus, the results indicate a clear dependence of energy efficiency related revitalizing measures from the different government entities to the current state of the economy. As the analysis shows, the adoption of the most important energy saving legal acts falls to the post-crisis periods. In the periods of sustained economic development the solution to this problem is given much less attention.

DISCUSSION

The importance of the results of this study lays in indicating major reasons for the low effectiveness of efforts implemented in the sphere of energy saving. First of all, the low effectiveness of efforts comes from the delay in the decision-making, fundamental to improve the energy efficiency of the Russian economy. In other words, the currently developed model of energy efficiency management aims at overcoming the obvious problems that require an early intervention and can be characterized as the "post factum" management. The most striking illustration of this is an increase of legislative and regulatory activities in the field of energy saving, especially in times of crisis. This is explained primarily by the following facts. First of all, in the post-crisis period characterized by a fall in gross domestic product and a decline in production in various sectors of the economy, the problem of reducing of the energy intensity becomes

particularly relevant. Secondly, the reduction of energy production itself is considered as one of the areas with a high potential of resources saving, on the one hand, and the development of new competitive technologies that are necessary to get the economy out of crisis, on the other hand. However, the current energy efficiency management model can not fully meet modern conditions of functioning of the Russian economy. Only systemic and sustained actions in the field of energy saving are able to create the necessary basis for a fundamental change in the situation.

CONCLUSION

As a result of the study the following results were obtained. Firstly, there was identified clearly observable cyclical increase in efforts to implement the various types of programs in the field of energy saving and energy efficiency of the Russian economy. During the period from 1995 to 2016 there has been allocated three stages characterized by increase of legislative activity in the sphere of energy saving. Secondly, it was found that the main cause of exerting a decisive influence on the revitalization of the various management structures is the current state of the economy. The problem of high energy intensity becomes especially relevant in difficult times of crisis and its solution is presented as a necessary condition for bringing the country out of crisis. Thirdly, the thesis was proved, that the established cyclisity is the most important cause of restraining the decrease in energy intensity of the Russian economy. The absence of a regular, consistent work in the field of energy efficiency, as well as the need to address emerging problems that require urgent intervention, is one of the factors significantly hindering decrease of the energy intensity of the Russian economy. For these reasons, the measures taken can not be sufficiently effective on the long run. Only the formation of an integrated energy efficiency management system based on the prediction of possible development of the economy and the anticipated consequences would lead to an increase of efficiency in management decisions in the field of energy saving.

ACKNOWLEDGEMENTS

The study was performed by a grant from the Russian Science Foundation (project №16-18-10227).

REFERENCES

1. Melnik A.N., Ermolaev K.A. Top management course from the perspective of its impact on the activation of energy-saving activities in the enterprise, International Multidisciplinary Conferences on Social Sciences and Arts SGEM 2014, Bulgaria, 2014, pp. 725-732.
2. Anisimova T.Y., Khabibrakhmanov R.R. Reduction of energy intensity of russian economy on the basis of application of the selective approach to the problem solving, International Multidisciplinary Conferences on Social Sciences and Arts SGEM 2014, Bulgaria, 2014, pp. 479-486.
3. Official site of Russian Federation Federal State Statistics Service 10.07.2016 http://www.gks.ru/
4. Official site of International Research & Consulting agency «Enerdata» 10.07.2016 http://www.enerdata.net/

5. Nepal, R., Jamasb, T. Restructuring the power sector in transition: Do institutions matter?, Energy Economics (34), 2012. pp. 1675-1682.
6. Erdogdu, E. The impact of power market reforms on electricity price-cost margins and cross-subsidy levels: A cross country panel data analysis, Energy Policy (39), 2011, pp.1080-1092.
7. Official site of Legal reference information provider «ConsultantPlus» 10.07.2016 http://www.consultant.ru/

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

LABOUR MARKET FRICTIONS IN THE VISEGRAD GROUP

Ing. Adam Pápai[1]

[1] Masaryk University, Faculty of Economics and Administration, Brno, **Czech Republic**

ABSTRACT

In this paper we examine the dynamical and structural properties of the economies of the Visegrad Group. Our focus lies mainly in the investigation and comparison of the labour market frictions present in these countries. We estimate a dynamic stochastic general equilibrium model for small open economies on four data sets between periods 2002Q1 and 2015Q4. The selected model contains several labour market and other types of rigidities, like wage and price adjustment costs. The explicitly defined labour market consists of a search and matching function and a Nash-type wage and working hours bargaining process. A switching mechanism is implemented for the Slovak Republic to differentiate between autonomous and joint monetary policies for periods before and after 2009. The model matches the behaviour of real macroeconomic variables relatively well. Our results suggest that the wage rigidities are weaker compared to the price frictions in all examined economies. Also, in most cases the monetary authority is capable of influencing the labour market variables. Finally, all countries except Poland show signs of high degree of openness.

Keywords: labour market, frictions, DSGE model, Visegrad Group

INTRODUCTION

Dynamic stochastic general equilibrium (DSGE) models represent the modern day workhorses of the macroeconomic modelling. They are a widely used tool not only by private companies, but also, largely, by the public sector. Their application is vast, because they can be easily modified to help the observer to examine different relationships between macroeconomic variables. Central banks all over the world utilize this property of said models, to investigate how their monetary policy can influence other areas of the economy under different circumstances.

Researchers like Christiano et al. [2] estimate a series of models focusing on the analysis of the monetary policy. They describe the implications of the monetary policy maker's decisions as well as the factors that influence the monetary authority. They also investigate the appropriateness of the usage of Hodrick-Prescott filter as an estimator of the output gap and the benefits of estimation with Bayesian techniques. Finally, they compare the impulse response functions of the DSGE model with the results obtained by vector autoregression estimation.

Galí et al. [5] implement labour market into an otherwise standard DSGE model. Their findings suggest, that labor market with frictions improves the overall ability of the model to match the behaviour of key macroeconomic variables and the interactions among them.

Tang connects the examination of monetary policy and the labor market in article [10]. The findings of this paper suggest that the policy maker should be concerned with the stabilization of employment dynamics. Inefficient labour market can cause a trade-off

between inflation stabilization and stabilizing real activities. For other interesting articles, that investigate the decision making of monetary authority or the development of labour market variables using DSGE models, see e.g. Faia [4], Sheen and Wang [9] or Christoffel et al. [3].

In this paper we expand and unify our previous studies, like Pápai and Němec [7] to investigate the structural properties of labour markets in the Visegrad Group (V4).

VISEGRAD GROUP

The countries of V4, namely the Czech Republic, Hungary, Poland and the Slovak Republic, are geographically close together. Due to this, they share several historical events amongst themselves. They joined the European Union together in 2004, which simplified the way to the labour and goods markets of Western Europe. Figure 1 shows the unemployment rates in the countries of V4. At the start of the observed period, in 2002, the highest unemployment rate was in Slovakia and Poland at around 19.5%. Both countries managed to reduce these high rates in the following seven years. With the arrival of the financial crisis in 2007 and the recession in 2008, the unemployment rates halted in their decline and began to increase in 2009. The lowest rate was 9.1 and 6.9 respectively. The rise stopped in 2010. The figure shows, that the recession had a bigger impact on the Slovak labour market, where the unemployment rate rose by two thirds to 14.6%. Since then, both the Polish and the Slovak labour markets are slowly recovering to their pre-recession states. The Czech and Hungarian unemployment rates were fairly low at the beginning of our time period with values of 7.4 and 5.6% respectively. Unlike in the previous two countries, the unemployment rate was increasing slowly but steadily even throughout the whole time period before the recession in Hungary. We can observe slight decreasing tendencies in that time for the Czech Republic. After the crisis, the development of this variable is similar in the last two countries to the first two. A roughly three-year period of relative stability was followed by a continuous decrease.

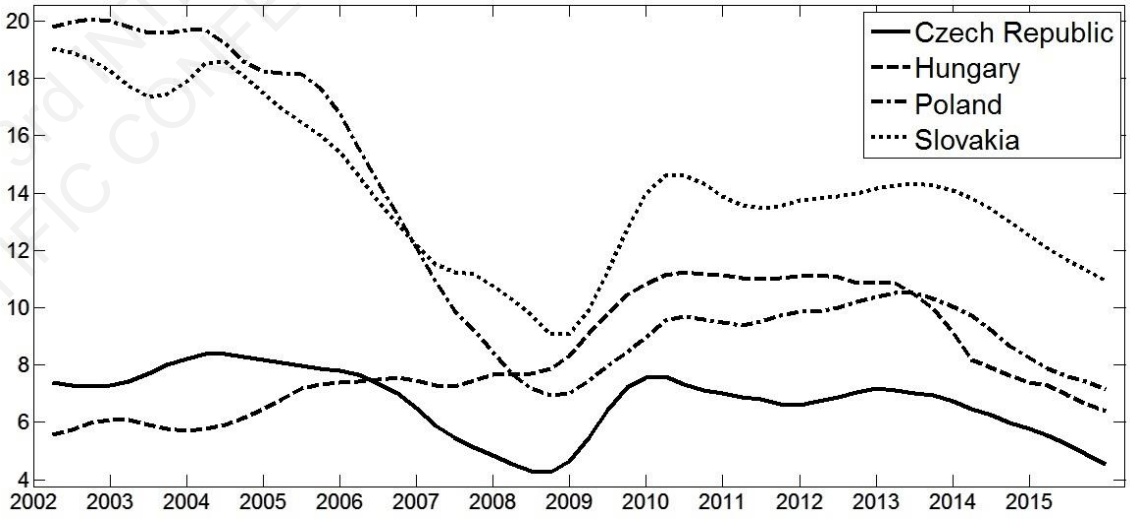


Figure 1: Unemployment rate (%) in V4 countries; Data source: OECD database

A significant factor, that distinguishes one country from the rest is that only Slovakia entered the Economic and Monetary Union (EMU), adopted the euro and gave up its monetary policy in 2009. Since then, the stability of the Slovak economy relies mainly on the effectiveness of the domestic fiscal policy and the European Central Bank, as the maker of monetary policy for the countries of the Euro area. The other three countries kept their currencies and have autonomous monetary policy. Furthermore, although being relatively large compared to the other countries, we decided to treat the Polish economy as a small and open so we can investigate all of the selected countries with the use of a single model specification.

THE MODEL

For our estimation we select a DSGE model for small open economies developed by Albertini et al. [1]. This model focuses on the description of labour market variables. Therefore, it contains labour in intensive (hours worked) and also in extensive (employed) margin. The labour market is non-Walrasian, which means there exists a fraction of population which is unemployed in the equilibrium. The model contains several types of rigidities, like price and wage adjustment costs, hiring and vacancy posting costs and matching frictions. The model consists of three agents – households, firms and monetary authority - and leaves out capital and government.

Labour market

The search and matching function determines the number of worker-job position matches. It has the following Cobb-Douglas form:

$$M_t = \varepsilon_t^{\chi} S_t^{\nu} V_t^{1-\nu}$$

where M_t is the number of matches, S_t represents the number of job seekers, V_t is the mass of vacancies, ε_t^{χ} represents the matching efficiency shock and ν is the elasticity of matching function with respect to S_t. Unemployed workers and vacant job positions are unproductive. The process of searching for work and workers is costly and time consuming. Only employed people matched with filled jobs produce output. The labour force is assumed to be constant and is normalised to 1. Employment in each time period *t* consists of old and newly employed workers. Thus, the employment law of motion has the following form:

$$N_t = (1 - \rho^x) N_{t-1} + M_t$$

where N_t is the mass of employed workers and ρ^x is a constant and exogenously given job destruction rate. The number of job seekers differs from the number of unemployed:

$$S_t = 1 - (1 - \rho^x) N_{t-1}$$

This formulation allows workers who lost their job in one period to find a new one in the same time period.

Households

The representative household maximizes over all periods its expected intertemporal utility, which has the following form:

$$E\sum_{t=0}^{\infty}\beta^t\varepsilon_t^c\{\log(C_t-\vartheta\bar{C}_{t-1})-N_tV(h_t)\}$$

The utility depends on the discount factor β. ε_t^c is the preference shock, C_t is the composite consumption of domestic and foreign goods, ϑ represents the deep-habit parameter, which helps smoothen out the consumption over time. N_t is the aggregate employment defined above and $V(h_t)$ is the disutility of work, which depends on the hours worked, h_t. The household decides to spend its income – which consists of interests from domestic and foreign bonds, wage income and unemployment benefits – on consumption of goods or investing it in bonds.

Firms

There are three types of firms in the model. Each of them faces different kinds of rigidities:

Domestic intermediate good producers – operate on a perfectly competitive market. They are the only firms that hire workers. Given the absence of capital, it is their only input. To create output the intermediate good producers need to hire employees. Before they are able to hire, they have to create vacant job positions. However, the creation of a vacancy is costly. Furthermore, if the firms want to adjust the wages of their employees, another (wage setting) cost occurs. This cost is modelled following Rotemberg [8]. The firms and the workers negotiate the wage and hours worked in a Nash bargaining process. Here the created surplus of a filled and productive job position is divided between them based on their negotiating power. The firms maximize their profits given the wage, wage adjustment and vacancy creation costs.

Domestic retailers – buy the unfinished products from the domestic producers, combine them and sell them on a monopolistically competitive market to the households. This monopolistic power gives them the opportunity to adjust the prices of the domestic goods. However, doing so, they face additional price adjustment costs.

Importers – represent the final kind of firms. They import heterogeneous goods from the foreign sector and sell them in a monopolistically competitive environment. Similarly to the domestic retailers, the importers have the ability to optimize their prices in every period. The change of price incurs increase of costs. Furthermore, the importers also face volatilities of the exchange rates.

Monetary authority

The autonomous monetary policy maker sets the current interest rate (i_t) with respect to its previous value, deviations of inflation (π_t) and output (y_t) from their steady state values and first differences of output (Δy_t) and nominal exchange rate (Δe_t) gaps. The decision making Taylor-type rule of the monetary authority has the following form (the log-linearized variation of the equation is presented):

$$i_t=\rho_R i_{t-1}+(1-\rho_R)\left(\rho_\pi\pi_{t+1}+\rho_y y_t+\rho_{\Delta y}\Delta y_t+\rho_{\Delta e}\Delta e_t\right)+\varepsilon_t^m$$

Parameter ρ_R is the interest rate smoothing parameter. The other ρ parameters represent the weights of each variable in the interest rate setting.

To account for the accession of the Slovak economy to the EMU, we needed to make a modification regarding the Taylor-rule, since the National Bank of Slovakia is no longer

able to influence the interest rates after 2009. We therefore set the domestic interest rate to copy the development of the exogenous foreign interest rate for the period when the official currency in the Slovak Republic is euro.

DATA, METHODOLOGY AND CALIBRATION

As in the original article, we use 11 observed quarterly variables – 8 for the small open domestic economy and 3 for the foreign sector – to cover the examined time period from 2002Q1 to 2015Q4. The first and the last observation of the dataset is given by the availability of the data. Gross domestic product (y_t), CPI inflation (π_t), nominal interest rate (i_t), real exchange rate (q_t), unemployment rate (u_t), vacancy rate (v_t), real wage (w_t) and hours worked (h_t) are selected to represent the domestic economy. Foreign sector is defined by output (y_t^*), inflation (π_t^*) and interest rate (i_t^*). The Euro area is chosen as the foreign economy, because it incorporates all the relevant trading partners of the V4 countries. We aim to acquire all the time series from the same database. For the majority of the data the OECD database serves as our source. However, the incomplete interest rate for Hungary is substituted by the official BUBOR index. The vacancy rate for Slovakia is acquired from the database of the National Bank of Slovakia. The exchange rates are obtained from the sites of the European Central Bank. Finally, the hours worked are acquired from each country's national bank or central statistical office, with the exception of Poland, where this time series is unavailable and therefore it does not enter as an observed variable.

All the time series are seasonally adjusted. To get the cyclical component of the data, we use Hodrick-Prescott filter on 7 logarithmized time series. The inflations, and the interest rates are detrended using their respective means. The resulting time series represent percentage deviations from their trends (steady states). Log-linearized version of the model is used for the estimation which is in accordance of the data modifications.

The estimations of the models are carried out in Matlab's Dynare toolbox with the use of Bayesian techniques and the Kalman filter. The Bayesian approach allows us to provide the model with additional information in form of parameter calibration and prior densities. The Kalman filter is helpful if one wants to investigate unobserved variables. Two chains of Metropolis-Hastings algorithm are generated for each country. Each chain contains 600.000 draws of which the initial 33% was dropped. We aimed the acceptance rate to be around 0.3.

Several of the model parameters are calibrated prior to the estimation from the data. The steady state unemployment rates are set to be the sample means of actual unemployment rates. For the Czech Republic, this value is 6.71, for Hungary 8.26, for Poland 12.23 and for Slovakia 14.11. The home bias in consumption is calculated as the import share of the GDP. These values are 0.37, 0.43, 0.28 and 0.44 respectively. This parameter shows us, that Poland is indeed less open than the rest of the countries. The prior setting of the estimated parameters is presented in Table 1. The prior densities of the parameters are the same for each country, to account for the differences in the data and not the different information given prior the estimation.

RESULTS

The posterior means of estimated parameters are presented in Table 1 for each country. We can see, that the deep habit parameter of consumption (ϑ) is quite high in the V4. It is the highest in Poland, while the people in the other economies smoothen their consumption over time almost equally. The inverse of Frisch elasticity (φ) captures the elasticity of hours worked with respect to wage. The results suggest that the employees in the Czech Republic and Poland react slightly more to the changes of their wages.

The firms bargaining power (ξ) is estimated to be rather low in Hungary and Poland. This is in contrast with the evidence which states that the trade unions are weak in Hungary. The negotiating power of firms is considerably higher in the Czech Republic and Slovakia. The elasticity of matching function with respect to job seekers (ν) is highest in Hungary. Here the number of matches depends more on the unemployed than on the vacancies available. Furthermore, we can observe that the results – if we take into consideration the 90% highest posterior density intervals – confirm the Hosios condition [6], which states, that "*the share of workers (firms) in the surplus of a match is equal to the elasticity of the matching function with respect to the corresponding search input*." In our case this means, that $\nu = 1-\xi$.

The elasticity of vacancy creation (σ) is estimated to be greater than one in each country. Values higher than one indicate increasing vacancy posting costs. This means that creating a new job position is costlier for the firms in Poland than in the rest of the examined economies.

Table 1: Parameter estimation results

		Prior	*Posterior means*			
	Parameter	*density*	*CZE*	*HUN*	*POL*	*SVK*
ϑ	Habit	β (0.5,0.15)	0.734	0.758	0.825	0.745
φ	Inv. of Frisch el.	Γ (1,0.2)	1.599	1.473	1.564	1.428
η	El. of subst.	Γ (1,0.2)	0.682	0.460	0.430	0.792
ξ	Firm's barg. p.	β (0.5,0.2)	0.477	0.265	0.287	0.546
ν	El. of matching	β (0.5,0.2)	0.691	0.842	0.504	0.673
σ	El. of vac. creation	Γ (1,0.5)	4.032	2.805	5.789	3.825
Price and wage setting						
γ_H	Back. price (dom.)	β (0.75,0.1)	0.537	0.649	0.423	0.494
γ_F	Back. price (for)	β (0.75,0.1)	0.826	0.836	0.777	0.803
γ_W	Back. wage	β (0.75,0.1)	0.339	0.606	0.472	0.494
ψ_H	Price adj. (dom.)	Γ (50,15)	33.08	42.84	47.12	66.19
ψ_F	Price adj. (for.)	Γ (50,15)	68.47	61.20	80.48	47.90
ψ_W	Wage adjustment	Γ (50,15)	17.79	36.92	57.89	27.93
Monetary policy						
ρ_r	Smoothing	β (0.5,0.15)	0.833	0.633	0.763	0.743
ρ_π	Inflation	Γ (1.5,0.5)	2.248	1.601	1.447	1.973
ρ_Y	Output gap	N (0.25,0.1)	0.254	0.277	0.501	0.315
$\rho_{\Delta Y}$	Output difference	N (0.25,0.1)	0.264	0.269	0.267	0.282
$\rho_{\Delta e}$	Exchange rate	N (0.25,0.1)	0.044	0.265	0.129	0.386

Source: Authors calculations

The backward looking parameters (γ) govern the degree of frictions of prices and wages. The prices of foreign goods are the most rigid in each economy, while the frictions of prices of domestic goods and wages are lower and almost equal for each country with the exception of the Czech Republic. The prices of foreign goods are also the costliest to adjust (ψ) in the Czech Republic, Hungary and Poland. However, in Slovakia the change of prices of domestic goods is higher than the foreign goods. This could be given by the entry of Slovakia to the EMU and therefore the importers do not have to calculate with exchange rate fluctuations and can change the prices with lower costs. Compared to the other countries, the wage adjustment cost in Poland is very high. It is even bigger than the cost of adjusting the prices of domestic goods.

When estimating the Taylor-rule parameters, we took into consideration the entry of Slovakia to the EMU. From Table 1 we can see that the Czech National Bank (CNB) managed to keep the most stable interest rate among the V4 countries with the smoothing parameter (ρ_r) having its estimated mean at 0.833. The interest rate is the least stable in Hungary, where this value is 0.633. The response of interest rates to changes in inflation varies among the countries. Given the closeness of posterior means of $\rho_{\Delta Y}$ to their prior value, we can say that the data contains very few information of this parameter. Similar is the case of ρ_Y, where with the exception of Poland, the estimated values are close to the prior. The reaction of CNB to the fluctuations of the exchange rate is close to zero. This is currently true for the Czech Republic where the exchange rate is constrained to be above 27 CZK/EUR.

CONCLUSION

We have investigated the labour market properties of the four economies of the Visegrad Group. We found that although these countries are geographically close together, there are several significant differences among them. The results suggest increasing vacancy creation costs, so that the firms are less willing to create new job positions. However, the values of this parameter differ amongst the examined economies. The bargaining power of workers outweighs the power of firms in both Hungary and Poland, while in Slovakia and the Czech Republic the surplus created by an employee and a filled job position is divided evenly between the firm and the worker. In each of the V4 countries, the foreign price rigidities and the foreign good's price adjustment costs are much higher, than the wage frictions and wage change costs respectively. Similarly, as the parameter of elasticity of vacancy creation, the parameter of foreign price and wage adjustment cost is the highest in the Polish economy. Thus we draw the conclusion, that the Polish economy faces the costliest frictions.

For further research of this topic, given the fact that the observed period contains the economic crisis of 2008, it would be interesting to examine its impact on the V4.

ACKNOWLEDGEMENTS

This work was supported by funding of specific research at Faculty of Economics and Administration, project MUNI/A/1040/2015. This support is gratefully acknowledged.

REFERENCES

[1] Albertini, J., Kamber, G., and Kirker, M. Estimated small open economy model with frictional unemployment, Pacific Economic Review, vol. 17, issue 2, pp 326-353, 2012.

[2] Christiano, L. J., Trabandt, M., and Walentin, K. DSGE Models for Monetary Policy Analysis, Handbook of Monetary Economics, Elsevier, edition 1, volume 3, pp 285-367, 2010.

[3] Christoffel, K., Kuester, K., and Linzert, T., The role of labor markets for euro area monetary policy, European Economic Review, 53, pp 908-936, 2009.

[4] Faia, E., Ramsey monetary policy with labor market frictions, Journal of Monetary Economics, 56, 570-581, 2009.

[5] Galí, J., Smets, F., and Wouters, R. Unemployment in an estimated new Keynesian model, Economics Working Papers 1266, Department of Economics and Business, Universitat Pompeu Fabra, 2011.

[6] Hosios, A. J. On the efficiency of matching and related models of search and unemployment, Review of Economic Studies, Vol. 57, No. 2, pp. 279-298, 1990.

[7] Pápai, A., and Němec, D. Labor Market Frictions in the Czech Republic and Hungary, Proceedings of 33nd International Conference Mathematical Methods in Economics (Martinčík, D., Ircingová, J., Janeček, P., eds.), Plzeň: University of West Bohemia, 2015, 606-611.

[8] Rotemberg, J. Cyclical wages in a search-and-bargaining model with large firms, In: NBER International Seminar on Macroeconomics, 2006, University of Chicago Press, 65-114, 2008.

[9] Sheen, J., and Wang, B. An Estimated Small Open Economy Model with Labour Market Frictions, Dynare Working Papers Series, WP no. 35, 2014.

[10] Tang, J.-H. Optimal monetary policy in a new Keynesian model with job search, Journal of Economic Dynamics & Control, 34, pp 330-353, 2010.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY

METHODICAL APPROACHES TO ASSESSMENT OF INTELLECTUAL RENT AS A FACTOR OF INNOVATIVE ECONOMY DEVELOPMENT

Prof. Irina Ershova
Assistant Prof. Irina Androsova
Prof. Svetlana Morkovina
South-West state University, **Russia**
South-West state University, **Russia**
Voronezh State Forestry Engineering University Named after G. M. Morozov, **Russia**

ABSTRACT. Statement of the problem. The formation of the knowledge economy is one of the trends of recent decades, when there is the increasing role of knowledge and information in the world economic system. The main mechanism of functioning of the «new» economy is the market of intellectual property, where the income is intellectual rent. Intellectual rent is an important structural element in the development of modern economy based on knowledge, as there is a gradual replacement of natural-resource rents that makes intelligent income is a determining factor of social development. The ability to generate innovations and to obtain excess profits at the expense of appropriation of the intellectual rent is of great importance to create and maintain competitive advantages of the company in a "new" economy.

Thus, in today's economy intellectual rent takes on a special role in long-term socio-economic development of the country and its regions, as is one of the indicators of optimal use of factors of production and sustainability of existing rent relations.

The purpose of the study. The article is aimed at studying and systematization of methodical approaches to assessment of intellectual rent.

Methods. The article makes use of empirical methods in the study of intellectual rent, General scientific methods of analysis and synthesis, and methods of statistical information processing.

Insights and results. The article summarizes the various methodological approaches to assessment of intellectual rent, and also conducted cross-country comparison of intellectual rent in the last five years. The authors modified the methodological approach to the assessment of intellectual rent, based on the allocation of added value for innovative enterprises.

Keywords: knowledge economy, intellectual property, knowledge, value added, methodical approach

INTRODUCTION

The development of a knowledge-based economy represents a strategy of today's national politics in the existing context. The formation of a knowledge-based economy is one of the apparent trends of the latest decades, where the role played by knowledge and information is growing in the world economic system. The key mechanism of "new" economy functioning is the intellectual property market, where intellectual rent constitutes one of the income sources. Intellectual rent represents a critical structural element of modern knowledge-based economy's growth since the natural raw rent is

gradually being replaced transforming intellectual income into a determining factor of social development. The ability to generate innovations and yield excess earnings by means of intellectual rent allocation is very important for creating and sustaining the company's competitive advantages in the context of the "new" economy.

Therefore, in today's economy intellectual rent is acquiring a special role in long-term socioeconomic development of the country and its regions since it represents one of the indicators showing optimum use of production factors and rationality of existing rent relations.

The rent theory was originated as part of the works prepared by such classical school representatives of political economics as Aaker [1], Swift, A [2]. In the context of marginal concept all kinds of rent were interpreted as a form of income raised from utilizing scarce inputs. Among the Russian authors those who devoted their works to the issues of intellectual rent included I.V. Skoblyakova [3], E. N. Ackerman [4], V.L. Makarov [5].

To develop strategies for effective economic growth in the field of innovations it is necessary to possess methodical tools for assessing intellectual rent which is required to identify different versions of development both for the short term and as part of creating strategic plans. In Russian economy and business practice the tools for assessing national economic system's readiness for transition into a knowledge-based development model, as applied in different situations and activity ranges, are underdeveloped.

Let us review main methodical approaches to assessing the level of knowledge-based economy's growth, considering Russian and global experience. Systemization of key methodical approaches is presented in table 1.

Table 1- Systemization of key methodical approaches to intellectual rent assessment

Developed by	Main content of the method
World Bank	Discounting which allows assessing the effectiveness of investments in science development during the given period of time.
Skoblyakova I.V.	Method of calculating intellectual rent based on the scientists' contribution to generating national GDP. Intellectual rent is calculated based on the following formula: IR = C*P, Where IR refers to intellectual rent, G refers to the scientists' contribution to GDP and P refers to productivity factor
Makarov V.L.	Based on the calculation of the following indicators: level of knowledge sector support; level of knowledge use in economy; balance of knowledge-based economy

The method proposed by the World Bank is based on applying discounting method allowing to assess the effectiveness of investments in the growth of scientific activities. This approach is based on the fact that the cost of the country's resources is the same as the revenues that they can yield. The essence of the method is to estimate the country's monetary value based on its economic potential rather than on its accumulated national wealth. The country's monetary value will be determined as the sum of economic potentials from individual branches of national economy.

A number of author's methods for assessing intellectual rent were developed. For example, Skoblyakova I.V. suggests calculating intellectual rent based on the scientists' contribution to generating national GDP. The amount of GDP per each employed person in the economy is determined to find a scientist's contribution to GDP generation. It considers the fact that in a knowledge-based economy, where science represents the productive force, the scientists' contribution to GDP generation is two-to-three times greater when compared to the contribution made by employees in other fields. Intellectual rent calculation is presented in table 2.

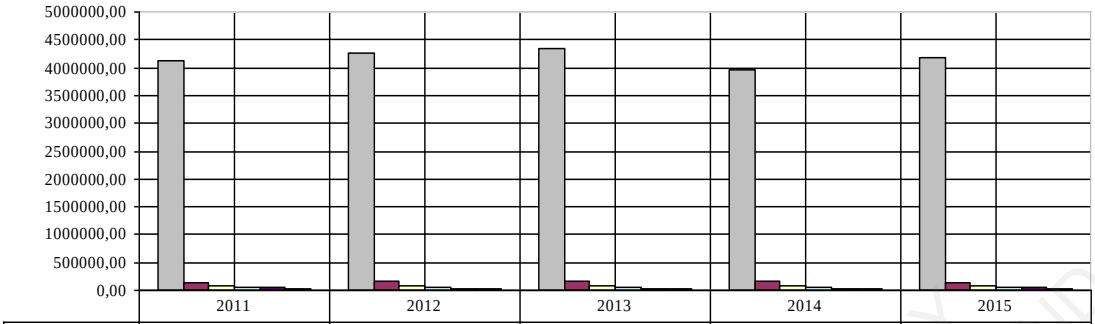
Table 2 – Intellectual rent calculation using the example of different countries across the world as of 31.12.2015

No.	Country	Number of scientists, thous. ppl.	GDP amount, bill. dollars	Work force population, mln. ppl	GDP amount per one employed person,	Scientists' contribution to GDP, mln. dollars	Intellectual rent amount, mln. dollars
1	2	3	4	5	6 (c.4/c.5)	7 (c.3xc.6)	8 (c.7xP)
1	USA	12612,2	18124,7	164,1	110,45	1393006,35	4179019,04
2	Japan	715,3	4210,4	65,7	64,09	45840,17	137520,51
3	Germany	285,6	3413,5	42,1	81,08	23156,67	69470,00
4	France	173,5	2469,5	25,4	97,22	16868,44	50605,31
5	United Kingdom	159,6	2853,4	32,9	86,73	13842,03	41526,08
6	Russia	732,2	1176,0	72,5	16,22	11876,79	35630,37

Source: ccompiled by the author according http://data.trendeconomy.ru [7], http://investorschool.ru [6] [8]

Information presented in table 2 demonstrates that the most economically developed countries are the leaders. These countries feature the highest expenses on science and knowledge-intensive production development.

By using this methodical approach we shall calculate these countries' intellectual rent between 2011 and 2015 (fig.1).



	2011	2012	2013	2014	2015
USA	4137228,85	4260470,72	4347419,10	3952199,18	4179019,04
Japan	136145,30	168470,90	171909,08	156280,98	137520,51
Germany	68775,30	81006,95	82660,15	75145,59	69470,00
France	50099,26	57497,54	58670,96	53337,24	50605,31
United Kingdom	41110,82	40108,12	40926,66	37206,05	41526,08
Russia	34214,78	36882,81	37635,52	34214,11	35630,37

Figure 1 -The dynamics of intellectual rents by country for 2011-2015, mln. dollars

The data of the figure show that the greatest value of intellectual rent is typical for the United States for 2011 to 2015. The decrease occurred in 2014 and 2015. increased the value of the rent to 4179019,04 mln. dollars.

Next methodical approach was proposed by Makarsky V.L., who analyzes intellectual rent by using the following indicators: level of knowledge sector support (investment) in Russia (as a % of GDP) (input); level of knowledge use in the economy (as a % of GDP) (output); balance of knowledge-based economy growth (correlating the resulting output effect and the input expenses). The values are calculated relative to the average level of EEC countries. Findings obtained using the method of Makarsky V.L. are presented in table 3.

Table 3- Intellectual rent assessment based on the method used by Makarsky V.L.

Indicators	EU countries			Russia		
	2013	2014	2015	2013	2014	2015
Knowledge sector support level (input), %	79.43	81.38	82.37	51.21	56.38	56.23
Level of knowledge use in the economy (output), %	83.46	87.14	89.12	78.54	88.12	88.39
Balance of the knowledge-based economy	1.05	1.07	1.08	1.53	1.56	1.57

Indicator of the knowledge-based economy balance in Russia slightly exceeds 1. In other words, the value of the obtained output effect slightly exceeds input expenses (on scientific research and education) which indicates an improvement in cost effectiveness related to the knowledge sector of the economy (knowledge-related expenses are still

ineffective). The calculations prove that in EU countries the average balance indicator is equal to 1.5. In other words, the effectiveness of utilizing investments in knowledge has increased by 50%. In our opinion, this indicator is not very high meaning that in these countries there is a resource allocation for education development. We must note that the indicators of economic balance in Russia are significantly lower compared to the worldwide indicators. However there is a tendency for their growth which promotes a rise in the level of the society's educational development.

CONCLUSION – Based on the conducted study and review of practical application of key methodical approaches to intellectual rent assessment we can sum up the following main conclusions:

- based on the method proposed by the World Bank intellectual rent is determined countrywide as the sum of economic potentials from individual branches of national economy;

- based on the method proposed by Skoblyakova I.V. intellectual rent was calculated for countries across the world, for the past five years. Leading countries feature the highest expenses on science and knowledge-intensive production development;

- the author's method proposed by Makarov V.L. allows to arrive at the conclusion that the ratio between input and output Russian indicators obtained for 2013-2015 demonstrate low efficiency of expenses made with respect to Russian education.

Each of the reviewed assessment methods has its own pros and cons: for instance, the assessment by using one indicator is rather simple and reflects a particular aspect of intellectual rent development; whereas the formation of an integral index is associated with such problems as the selection of constituent indicators, determining and justifying their significance, etc. In our opinion, one of the factors restraining methodical tool development with regard to intellectual rent assessment is the lack of the required statistical information. To resolve this issue, for obtaining a more precise knowledge-based economy assessment we suggest using the available statistical information. We believe that the level of intellectual rent development can be assessed in national statistical reports by using the following indicators: expenses on scientific research and developments, expenses on technological innovations (scientific research and developments), expenses on information and communication technologies (fig. 2).

Our system of indicators defines three distinct groups: science, innovations and information-oriented society. Such a system of indicators is based on a cost approach built on the determination of expenses invested in education and knowledge of the society [7]. The proposed system of cost-based indicators justifies the importance of further development of the methodical approach to assessing the effectiveness of the country's knowledge potential based on the principle of comparing expenses with the outcome.

Given the Russian information base, the development of an optimum method for assessing intellectual rent will promote growing concern towards the issues of knowledge-based economy formation and development which is related to the required enhancement of scientific research and the improvement of education quality in today's Russian society.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS

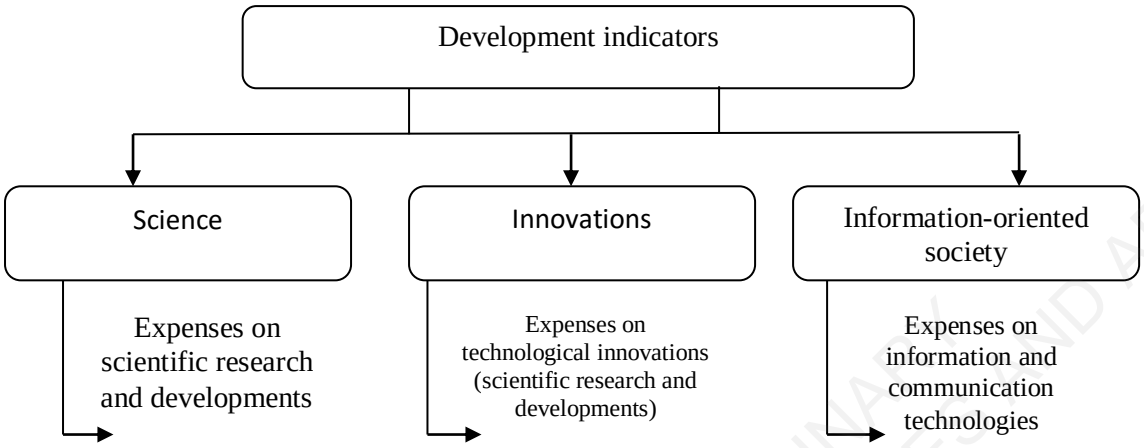


Figure 2 – System of indicators assessing intellectual rent condition

ACKNOWLEDGEMENTS The study was performed under grant of the President RF for state support of leading scientific schools № NSH-9726.2016.6 «Implementation of state policy through the development of tools of strategic and indicative planning».

ACKNOWLEDGEMENTS

The study was performed under the grant of the President of the Russian Federation for state support of leading scientific schools number Scientific School-9726.2016.6 "The implementation of state economic policy through the development of tools for strategic and indicative planning".

REFERENCES

[1]. Aaker, David A. (2004) Strategic Market Management, 7th edition

[2]. Swift, A. and Marshall, G. 1997. 'Meritocratic Equality of Opportunity: Economic Efficiency, Social Justice, or Both?', Policy Studies 18: 35-48.

[3]. Skoblyakova I.V. (2010) Approaches to assessment of intellectual rent // Audit and financial analysis, №2, 402-410 (in Rus.).

[4]. Ackerman, E. N. (2013) Methodical approach to assessment of intellectual rent at the regional level // Vestnik of Tomsk state University, №1, 37-41.

[5]. Makarov V.L. (2008) The measurement of knowledge economy: theory and practice. – M. – 191p.

[6]. Vertakova, J.V. (2015) Taxonomic assessment of innovation economy branch development: a synthesis of methodological approaches. [Izvestiya Yugo-zapadnogo gosudarstvennogo universiteta. Serija: Ekonomika. Sotsiologiya. Menedzhment] Southwest state university bulletin. Series of works: Economy. Sociology. Manageemnt, № 2, 51-59. (in Rus.)

[7]. http://data.trendeconomy.ru

[8]. Vertakova Yu.V., Ershova I.G., Plotnikov V.A. Educational System Influence on Knowledge Economy Formation // World Applied Sciences Journal 27 (5): 679-683, 2013.

METHODOLOGICAL APPROACHES TO INDICATORS' MONITORING OF ECONOMIC SECURITY FOR CORPORATIONS OF HI-TECH INDUSTRY

Assoc. Prof. of Finance and Fiscal policy department, Ph.D in Economics Elena V. Kostyaeva

Assoc. Prof. of Finance and Fiscal policy department, Ph.D in Economics Irena V. Plotnikova

Novosibirsk State Technical University, **Russia**

ABSTRACT

Ensuring of economic security is an essential condition for sustainable development of corporations of hi-tech industry. One of the effective tools to avoid or minimize adverse outcome risk is to monitor of indicators of corporates' economic security.

Development of indicators' monitoring system of economic security for corporation it considered a labour-consuming process, because it requires: an established and automated accounting and control system; the identification of risks that exceed the critical values and become threats for corporations; a reasonable selection of indicators.

The analysis carried out by us has shown that composition of indicators and their limits proposed by Russian scientists are uncertain and require further systematization and improvements.

The main task of our research were to improve the methodological approaches to indicators' monitoring of economic security for corporations, to determinate the range of critical values indicators, to test the methodology to identify the threat of hi-tech industry corporations.

So in this article there is a study of the methodological approaches to monitoring as a process, as well as it systematizes and refines composition of indicators for hi-tech industry corporations. An improved technique in the context of the major functional components of the economic security of the corporations has been tested, and the article identifies the threat, impeding their sustainable development. It also identifies the problems of methodical and practical nature.

Keywords: economic security, monitoring, indicators, corporations.

INTRODUCTION

Recently, significantly increased the attention of politicians, scientists and practitioners to ensuring the economic security issues of Russia and its regions and the corporate sector. Special emphasis now is done on the corporations' economic security of high-tech industries, in particular in the production of electronic components, radio, television and communication equipment and computers. The imposition of economic sanctions against Russia has also played an important role in increasing the interest to economic security of corporations (ESC).

In our view, the economic security should not be activated under the pressure of force majeure and must be carried out systematically and in the framework of the economic strategy the subject of any level. However, ensuring of economic security should not be activated under the force majeure' pressure and must be carried out systematically and in the economic strategy framework for the subject of any level.

One of the tools, that allow both quantitatively and qualitatively to solve this task, is to monitor of the economic security indicators for corporations (MIESC). Monitoring is important not only for the rapid diagnostics of internal and external threats, but also to develop general settings of the current protection system and for the future.

In this regard, issues of improving the methodological approaches for monitoring indicators of economic security high-tech corporations are of particular relevance.

The need to use monitoring in the management, analysis and forecasting has been proved in scientific and specialist literature. Not so long ago in Russia began to use this tool to form strategy for the economic security of the state and the regions. The results of the research in this area are reflected in the works of Russian and foreign scientists as V.K. Senchagov, E.A. Ivanov, V.G. Bulavko, E.V. Karanina, I.A. Konopleva, Nils-Goran Olve, Jan Roy, Magnus Wetter. Also the issues of indicators' monitoring of economic security for the state and the regions, are engaged by specialists of the Institute of Economics Russian Academy of Sciences. At the same time, some aspects of monitoring indicators ESC not well understood, are not industry-specific and require further study.

THEORETICAL AND METHODOLOGICAL FOUNDATIONS FOR THE ECONOMIC SECURITY OF CORPORATIONS

Economic security indicators for corporation are highly sensitive to changes in macroeconomic factors. Risky financial policy, that is carried out by owners, consciously or because of their own illiteracy, adversely affects the economic security corporations. In this regard, ESC monitoring system, formed on the basis of scientifically-developed methodology allows corporate management to respond quickly to internal and external challenges.

The effectiveness of this procedure depends on evidence-based selection of indicators. Our research on this issue has shown that the composition of indicators and their limits, proposed by economists, are unclear and require further systematization and refinement.

So, the main task of our research is to improve the methodological approaches to indicators' monitoring of economic security for corporations, to determinate the range of critical values indicators, to test the methodology to identify the threat of hi-tech industry corporations.

Theoretical and methodological basis of the study were the results of domestic and foreign authors in the economic security field for the state, region, and corporations. As the information base used by strategies and government programs that define of high-tech industry corporations' development, official data from Russian Federal State Statistics Service, the financial statements and annual reports of corporations.

The development of Russia's high-tech industries for decades hampered by the priority position of the fuel and energy complex. The reorientation of the country from export

raw materials to the sale of products and high technologies, and from import associated with the purchase of food and "consumer goods" to acquire of a new generation technologies and equipment is possible by combining the efforts of the state and corporations. According to domestic experts, Russia is in a strong position on the world market in iron and steel, nonferrous metallurgy, electric power industry, the defence industry and the weak - in electronics, automobile and textile industry.

An important indicator of economic security and technological independence of any state is its ability to produce competitive, technically complex products. The development of high-tech industry will provide a stable supply of products for special purposes, will create a high-performance workstations and get a "multiplier effect in related field". In addition, high-tech industry is the fastest growing industry in the world, because its rate of growth was approximately 8% per year [1].

In order to improve high-tech industries, in Russia have been worked out The Strategy and The Program for development up to 2025, in which are described two ways of develop. The first way is based on establishing a state monopoly on the ownership of the hi-tech industry companies and centralized management. The second way involves a public-private partnership, expansion of all forms of international cooperation taking into account the key interests of the State [1].

We think the second option is more appropriate, as the integration the efforts of the government and the private sector (domestic and foreign) should provide the necessary synergy effects to the development of hi-tech industry. But in this variant state executes infrastructure safety function of the total high-tech products market.

Strengthening the foundations of economic security, of course, it depends on government policy. But corporations alike must be prepared for radical changes and protect their safety. In our view, the priority in this direction is the construction of the industry complex corporates' protection system against external and internal threats, which based on the monitoring of certain quantitative and qualitative indicators.

Monitoring the economic security of the subject is the "continuous control process of the economic system' state, including data capture, tracking the dynamics of economic security indicators, identification of socio-economic development trends and forecasting threats" [2]. This definition, in our opinion, reflects the true essence of this instrument, and doesn't require clarification.

The main objective of the MIESC is the corporations state diagnosis, using a system of indicators, taking into account the specific characteristics of economic activity, reflecting the main characteristics of a particular corporation and having strategic importance. In this regard, the most important task for us is to determine composition of the ESC system' indicators and justify their thresholds, using current practices of the analysis and management at the corporation in Russia.

We attempted to group indicators ESC for hi-tech industry determine their threshold values. The basis of the systematization was accepted a functional approach to the content of economic security. In the process of work on systematization there was need for another component of ESC - the market. We consider that such composition of the indicators is to allow a more systematic and objectively identify threats ESC for hi-tech industry in Russia (see Table 1).

Table 1 - Systematization ESC indicators for hi-tech industry

Indicators	**Threshold values**
The market component	
Share of import substitution, %	70 – 50 [1]
Growth rate of revenue (GRR), profit, assets, %	100
Cost growth rate, %	< GRR
Return on assets, %	5.5
Return on sales, %	10
The financial component	
Financial leverage, decimal number	1
Ratio of net current assets, decimal number	0.5
Current ratio	1 [3]
Cash ratio	0.25
Degree of solvency on current liabilities, months	6 [3]
Technical and technological component	
Share of innovative products, %	20
The technological level of domestic electronics, μm	0.045 [4]
Growth rate of fixed assets, %	100, but not > GRR
Capital productivity, decimal number	The industry average
Degree of fixed assets depreciation, %	40 [2]

During monitoring, except indicators are shown in the Table 1, it is necessary to evaluate the indicators of other ESC components: intellectual and human resources; legal; environmental; information; forces.

Further we will approve the refined methodology by major functional components of the ESC. The information base for assessment of the ESC indicators is statistics data and the public financial statements of the holding JSC "Ruselectronics" for 2013 - 2015 years.

Information obtained as a result of the assessment will be the basis for further research. Also note that at this stage, priority is given to the quantitative assessment of indicators, including such components as: indicators analysis of market, financial, technical and technological components of the ESC of hi-tech industry corporations, presented in Table 2 - 4. The calculated indicators are compared with the threshold values, are formulating conclusions about the effectiveness of corporate activities by components ESC.

One of the basic and important indicators of corporate activity effectiveness is the revenue, but its absolute value does not give information on the trends, whereas the tempo indicator gives a clear picture.

Table 2 – Indicators analysis of the ESC market component for JSC "Ruselectronics" holding

Indicators	**Average value**	**Threshold values**
Growth rate of revenue (GRR), %	99	100%
Cost growth rate, %	97	< GRR
Growth rate of operating profit (GRP), %	110	> GRR
Growth rate of assets, %	119	> 100%, but < GRR
Return on assets, %	4	Not < 5.5%
Return on sales, %	8	Not < 10%

The analysis of objects monitoring shows that, in general, corporations have not reached the threshold values, although some organizations have a higher rate of revenue. The reasons for this were: the insignificant contribution of Russian producers on the world market, as well as a small proportion of civilian products in the domestic market and the high share of imports. The growth rate of cost for monitoring objects corresponds to normal values, but for all studying corporations the cost share in the revenue is high. This fact reflects non-effective cost management and financial results.

The growth rate of operation profit corresponds to an economically justified threshold values, exceeding the growth rate of revenue. It is a factor in the possible increase of organization' economic activities efficiency. The growth rate of assets in corporate are high, but significantly higher than revenue growth, which suggests that the use of corporate assets don't generate an increase in revenue and it also indicates about non-efficient use of assets and reducing corporate economic potential in comparison with the previous period. Analyzed profitability indicators do not exceed the thresholds values, which shows an increase of corporations' financial security risk, caused mainly by low (or even a loss), net financial results of the corporations.

General evaluation of the ESC market indicators, points to opportunities for the development of the hi-tech industry corporations, at the same time, the need to improve the efficiency of asset management, equity and results of corporate activity.

Table 3 – Indicators analysis of the ESC financial component for JSC "Ruselectronics" holding

Indicators	**Average value**	**Threshold values**
Ratio of the current assets coverage by working capital, decimal number	-0.27	Not < 0.1
Financial leverage, decimal number	1.92	Not > 1
Net working capital ratio, decimal number	0.02	Not < 0.5
Cash ratio, decimal number	0.51	0.2 – 0.25
Current ratio, decimal number	1.73	Not < 1

The main financial indicators for monitoring ESC are ratios associated with the formation of financial resources and activities sources. Results of the analysis indicate a

defect of coverage current assets by working capital (indicator is negative) and not to use the possibilities of corporate activities expansion through the involvement of long-term borrowings and other long-term sources of funding. At the same time, the financial leverage points to the high degree of dependence on corporate liability (primarily accounts payable), and the ratio of net working capital ratio - an aggressive type of financing policy.

Liquidity ratios are quite high, but show that corporations have a surplus of available funds, is not enough to effectively manage their current assets and non-rational use financial resources.

Table 4 – Indicators analysis of the ESC technical and technological component for JSC "Ruselectronics" holding

Indicators	**Average value**	**Threshold values**
Capital productivity, decimal number	2.38	Not less than the industry average
Degree of fixed assets depreciation, %	42	< 40 %
Growth rate of non-current assets, %	133	> 100%
Growth rate of fixed assets, %	162	> 100%
Share of innovative products, %	18	20% and more

Monitoring of technical and technological factors shows that the depreciation of fixed assets about 40% from the initial value of assets can be considered satisfactory, but in need of repair. The growth rate of non-current assets, as well as fixed assets, more than 100%, may indicate a build-up of production base to further increase production and sales volumes. Analysis of capital productivity indicator needs further clarification on the threshold value, but on the basis of the test data, compared with the previous period this rate increased by approximately 2%.

To summarize the results of the calculations were necessary to formalize the criteria for assessing the level of ESC. In this connection, the authors were developed the assessment scale of the ESC level. Table 5 presents ESC classification levels and their characteristics.

Table 5 – Characteristics and evaluation of the ESC level

State levels of the ESC	**Feature**
Stable	81% – 100% of the indicators within the thresholds values
Normal	61% – 80% of the indicators within the thresholds values
Volatile	41% – 60% of the indicators within the thresholds values
Critical	21% – 40% of the indicators within the thresholds values
Crisis	0% – 20% of the indicators within the thresholds values

The scale assessment presented here provides information about the overall level of ESC state, but for more precise positioning of studying corporations, the scale will be detailed based on deviations of the indicators from their threshold value.

Conducted analysis of the monitoring objects, in each of the three components of the ESC indicates showed, that there are deficiencies in corporate' management and security risks of their operation. To determine the level of economic security of the selected monitoring objects were made calculations, the results of which are reflected in the Table 6.

Table 6 – State level of the ESC for JSC "Ruselectronics" holding

The ESC component	**Average value**	**State level of the ESC**
Market	42.86	Volatile
Finance	41	Volatile
Technical and technological	60	Volatile
General level	47.62	Volatile

The general state level of economic security for the monitoring objects defined as volatile (for each component and in the total). Thus, the studied corporations, and corporations operating in the field of hi-tech in Russia, it is necessary to strengthen their economic security. for this purpose, is necessary to conduct action complex aimed at the development and introduction of innovative products and services that corresponding international standards.

CONCLUSION

Clarifying the composition of the indicators and their systematization revealed the following problems of theoretical and applied nature:

- Lack of official industry guidelines for the assessment of the corporations' economic security;
- The complexity of the experiment due to the unavailability or lack of information, which does not allow to test the methodology fully;
- A priority in the use of quantitative indicators and underestimation of the importance of quality indicators for monitoring purposes.

In the process of realization this study the following results were obtained:

- Refined and systematized the structure of indicators' monitoring of the ESC for hi-tech industry corporations by their function, as well as based on the analysis of the government programs, industry development strategies and calculation determined thresholds values of the ESC indicators;
- Approved refined methodology by major functional components of the ESC, based on the financial statements of the JSC "Ruselectronics" holding corporations;
- To summarize the results of the calculations are formalized the assessment criteria of the ESC level status and developed a rating scale;
- Determined the state level of the ESC for the holding JSC "Ruselectronics" as volatile.

To go to a normal and stable level of economic security the hi-tech industry corporations should:

- To increase the share of innovative products manufactured with the civil sector priority and to reduce dependence on foreign manufacturers of materials and equipment;
- To level up of integration with related industries;
- "To enhance operational efficiency through growth in labor productivity and cost optimization in the production and sales of products" [5];
- "To insure the risks of interruptions in production, the emergence of non-profit and losses in the business activities due to dereliction of obligations by contractors and force majeure" [6];
- To step up the modernization of the technological and industrial base, through their own and borrowed sources, as well as through state subsidies;
- To create the necessary conditions for the inflow of highly skilled professionals and the formation of strategic reserve of engineering and managerial staff.

The results obtained during the research, developing methodological approaches to monitoring, assessment and level of economic security for hi-tech industry corporations, as well as, provided adaptation, could be extended to other production areas and industries.

REFERENCES

[1] "On the approval of the electronic industry of Russia's Development Strategy for the period up to 2025 year", Order of the Minenergo of Russia, Russia, number 311 of 07.08.2007 year, available at: http://docs.cntd.ru/document/902063681 (accessed 21.03.2016);

[2] Senchagov V.K., Ivanov E.A., The mechanism structure of the modern Russian economic security monitoring, Moscow, Institute of Economics of the Russian Academy of Sciences, Russia, 2015, pp. 24 – 25;

[3] "On the approval of Procedures by the Federal Tax Service of accounting and analysis the financial condition and solvency for strategic enterprises and organizations", Order of The Economy Ministry of Russia, Russia, number 104 of 21.04.2006 year, available at: http: //www.consultant.ru/ document/ cons_ doc_LAW_ 61032 (accessed 20.03.2016);

[4] "Development of electronic and radio-electronic industry in 2013 – 2025 years", Regulation of the Russian Government "On approval of the Russian Federation state program", Russia, number 2396-p of 15.12.2012 year, available at: http://www.consultant.ru/ document/ cons_doc_LAW_139234 (accessed 22.03.2016);

[5] Teslia P. N., Plotnikova I.V., Monetary and fiscal policy of the state, Moscow, INFRA-M, Russia, 2012, p. 157;

[6] Scherbakov V.A. Kostyaeva E.V., Insurance, Moscow, KNORUS, Russia, 2014, p. 102.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS

METHODOLOGY FOR ESTIMATION OF FORESTRY ENTERPRISES COMPETITIVENESS

Assoc. Prof. Dr. Konstantin Kolev[1]

[1] Univesity of Forestry – Sofia

ABSTRACT

Methodology for estimation of forestry enterprises competitiveness is proposed. Under competitiveness in this study we understand: analysis of the management of the enterprise resources on the basis of which are created, maintained and improved competitive advantages generating positive economic result for a long period of time. From a statistical point of view, competitiveness is a complex indicator, characterized by numerous manifestations. It is composed of derived and one-dimensional indicators. The first expresses several sides of some phenomenon, while the second only individual side, a separate part of the phenomenon. The estimation of the level of the derived indicator, respectively, the complex indicator as a result of the transition from individual to the general, is based on the values of the simple indicators. Its practical calculation is done through aggregation of one-dimensional indicators values by means of the so called Hellwig's method. In this study the competitiveness is characterized on the basis of the following derived indicators: competitiveness of the product being marketed, labour's productivity, financial performance, enterprise growth, economic realization of forest resources ownership. Based on the above indicators complex criteria of the competitiveness of forestry enterprise is calculated. It is standardized from 0 to 1. The methodology is applied in the six state forestry enterprises for management of state forest territories. On the basis of results some recommendations for improvement of competitiveness are done.

Key words: competitiveness, state forestry enterprises, indicators for competitiveness

INTRODUCTION

The institutional changes of the management model of state forest territories, introduced in 2011, resulted in the founding of 6 state-owned enterprises. They were established on the basis of the planning region principle and not on the basis of profound analysis taking into consideration the financial status, performance, natural resources and fixed assets of their territorial divisions – State Forest Ranges (DGS) and State Hunting Ranges (DLS). This creates actual risk of diversion from the ideal model of perfect competition and deepening of regional differences in the distribution of the factors of production [3, 5, 6]. In accordance with this, it would be appropriate to propose a methodology for assessment of the competitiveness of forest units, which will allow to make timely and well-justified management decisions regarding the improvement of their competitiveness.

The above considerations give rise to the study **objective:** to develop and approbate a methodology for assessment of the competitiveness of the forest enterprise.

This objective can be achieved by solving the following two **tasks**:

- To propose a methodology for quantification of the competitiveness of a forestry enterprise;
- To assess the competitiveness of the six state enterprises managing the forest areas, which are state-owned as of 2014;
- To outline opportunities for improvement of the competitiveness of the six state enterprises managing the state-owned forest areas.

1. Approaches for Assessment of the Enterprise Competitiveness

For the purposes of this study, competitiveness will be considered as: **analysis of the management of the enterprise resources on the basis of which are created, maintained and improved competitive advantages generating positive economic result for a long period of time.**

There are various methods for assessment of company competitiveness but neither of them is generally accepted. The main shortcomings of most of these methods are the lack of complexity in assessment and inability to obtain summarization that is normalized within certain boundaries [4]. In this study we overcome these shortcomings by using the multivariate statistical method of Hellwig.

Statistically speaking, competitiveness is a complex indicator characterized by multifaceted dimensions. It consists of derived and one-dimensional indicators. The former reflect several features of certain phenomenon while the latter reflect only one separate feature of it. The assessment of the derived, or complex, indicator as a result of the transition from singular to general, is based on the significance of one-dimensional indicators. The very calculation of the assessment can be done through aggregation of the values of one-dimensional indicators, which in their unity characterize the complex indicator that is studied.

Derived indicators used to assess the competitiveness in this study are: competitiveness of the product being offered, labor productivity, financial performance, enterprise growth, market adaptability, productivity of forest areas, productivity of tree stock. It should be noted that the quantification of a multivariate indicator – which in this case is the competitiveness – cannot claim to be exhaustive because there is always something elusive within the set of one-dimensional indicators. They refer to certain features of the phenomenon being studied and are subject to quantification. In their unity as a single system they characterize the wholeness, i.e. the multivariate indicator that is studied [2].

1.1. Determination of derived indicators to be used in the assessment of forestry enterprise competitiveness

Each one derived indicator is determined by several one-dimensional indicators expressed in various measuring units (currency, ha, m^3, etc.). Their aggregation requires the one-dimensional indicators to be transformed from named to unnamed values. For this purpose the classic standardization formula is applied [2]:

$$z_{ij} = \frac{x_{ij} - \bar{x}_j}{S_j}, \quad (1.1)$$

where z_{ij} is the standardized value of the j-th indicator at the i-th forest unit;

x_{ij} is the value of the j-th indicator at the i-th forest administration unit;

$\bar{x}_j$ – the average for the relevant j-th indicator.

It is calculated through the formula (1.2):

$$\bar{x}_j = \frac{1}{n}\sum_{i=1}^{n} x_{ij}, \quad (1.2)$$

where n is the number of units in the relevant aggregation;

S_j – the standard deviation of the j-th indicator. It is calculated through the following formula:

$$S_j = \left[\frac{1}{n}\sum_{i=1}^{n}(x_{ij} - \bar{x}_j)^2\right]^{\frac{1}{2}} \quad (1.3)$$

➢ **Competitiveness of the Product Being Marketed.**

The competitiveness of marketed products reflects the customer preferences to the products of certain company over the products of competitive companies. As a result, revenues are generated allowing the company to acquire high quality raw materials and supplies, to invest in new products and technologies and to improve the qualification of its employees [1]. Product competitiveness is defined on the basis of two indicators: realized quantity and price of the main product – timber, in this case. By the size of wood assortments, it can be divided to the following categories - large, medium, small and firewood, and by tree species – to deciduous and coniferous. Based on this, the timber market can be subdivided into eight segments. The standardized values for the realized quantity and price are calculated through the formula (1.1) and the generalized assessment of the competitiveness of marketed products is calculated through the formula (1.4):

$$z_{cti} = \frac{\sum_{j=1}^{8} z_{qi}^{j} + \sum_{j=1}^{8} z_{pi}^{j}}{16}, \quad (1.4)$$

where z_{qi}^{j} is the standardized value for the quantity of the j-th deciduous/coniferous timber category of the i-th forest enterprise;

SCIENTIFIC CONFERENCE WITH INTERNATIONAL MULTIDISCIPLINARY PARTICIPATION ON SOCIAL SCIENCES AND ARTS 2016

z_{pi}^{j} is the standardized value for the price of the j-th deciduous/coniferous timber category of the i-th forest enterprise;

z_{cti} is the score for the competitiveness of the timber products of the i-th forest enterprise. The higher standardized value is a criterion for higher competitiveness of the timber products.

- **Productivity of Labor**

Productivity of labor is a generalizing factor which reflects how effectively the enterprise uses the available resources. Most authors believe that productivity of labor, taking into account the average added value per one employee of the enterprise, is a basic indicator for assessment of the current competitiveness. It is calculated through the formula (1.5) [1]:

$$P = \frac{Expenses\ for\ employees + Profit + Depreciations}{Employees\ count}, \quad (1.5)$$

The standardized value of the labor productivity is found through the formula (1.1).

- **Financial Performance**

The main objective of the financial performance indicator is to be an additional to other indicators because the achievement of a higher level of some indicators can be done on account of lower profit. For example, the higher competitiveness of marketed products can be achieved by increasing the quality considerably, which would reduce the financial performance, on condition that the market prices are steady. The financial performance indicator reflects the quality of management of the enterprise finance and is assessed through the one-dimensional indicators: return on equity (financial profitability); total liquidity and financial independence [1]. Generalizing evaluation of the financial performance can be calculated through the formula (1.6) where the standardized values of the three one-dimensional indicators are multiplied by the significance factors (weights) proposed by Ml. Velev.

$$z_{fpi} = 0{,}6 \times z_{rei} + 0{,}2 \times z_{tli} + 0{,}2 \times z_{fai}, \quad (1.6)$$

where z_{fpi} is the standardized assessment of the financial performance of the i-th forest enterprise;

z_{rei} – the standardized value of the return on equity of the i-th forest enterprise;

z_{tli} – the standardized value of the total liquidity of the i-th forest enterprise;

z_{fii} – the standardized value of the financial independence of the i-th forest enterprise.

- **Enterprise Growth**

This indicator can be determined through various indicators [1]. For the forest enterprise it is assessed through the current growth of timber stock per hectare and the growth rate of the fixed assets value in 2014 as compared to 2013. The first indicator is of great significance for the annual timber harvested volume, the timber sales revenues, the amount of added value, financial performance and opportunities for development of the state- forest enterprises. The second indicator reflects the long-term investments of the enterprise performed with the aim to realize its business objectives.

Through formula (1.1) the timber stock growth and the growth rate of the fixed assets are transformed into unnamed values. The enterprise growth indicator is calculated by multiplying the standardized values of the timber growth per hectare and the growth rate of the fixed assets with significance factors (weights) and then adding them up (formula 1.7). The weights are determined on the basis of expert considerations and their sum is 1:

$$z_{gi} = 0{,}8z_{cgthi} + 0{,}2z_{fai}, \quad (1.7)$$

where z_{gi} is the standardized value of the growth of the i-th forest enterprise;

z_{cgthi} – the standardized value of the current growth of timber stock per hectare of the i-th forest enterprise;

Z_{fai} – the standardized value of the fixed assets of the i-the forest enterprise.

- **Market Adaptability**

This indicator is characterized with the abilities of the management of the company to identify and quickly adapt to the changes of the market situation. It is determined on the basis of the offered quantity of timber and the actually sold quantity of timber.

$$MA = \frac{Offered\ quantity\ of\ timber - Sold\ quantity\ of\ timber}{Offered\ quantity\ of\ timber}.100,\%, \quad (1.8)$$

where MA is the market adaptability. Using the formula (1.1) we can determine a unnamed value (Z_{ma}) of this derived indicator.

- **Economic Realization of Forest Ownership Resources**

The economic realization of the ownership of forest resources is expressed as ground rent. It is a source of means to improve forest ownership and to increase the competitiveness of the forest enterprise. As regards to the analyzed periods, the legally prescribed payments to the Forest Investments Fund have the characteristics of ground rent. The economic realization of the ownership of forest resources is calculated on the basis of the ratio of: the payments to the Forest Investments Fund and the area of the

state-owned forest territories; the payments to the Forest Investments Fund and the timber stock of the state-owned forest territories. After transforming these indicators to unnamed ones, formula (1.9) can be used to calculate the value of the indicator:

$$z_{erofri} = \frac{z_{erofti} + z_{erotsi}}{2}, \quad (1.9)$$

where z_{erofri} is the unnamed value of the economic realization of the ownership of forest resources of the i-th forest enterprise;

z_{erofti} is the unnamed value of the economic realization of the ownership of state-owned forest territories of the i-th forest enterprise;

z_{erotsi} is the unnamed value of the economic realization of the ownership of timber stock of the state-owned territories of the i-th forest enterprise;

1.2. Linear Ordering through The Hellwig Method

The Hellwig method can be used to order in line and to perform comparative analysis of the state forest enterprises with respect to the competitiveness as a multivariate indicator. The essence of the method is to find a pattern point in space and to establish the location of the six enterprises towards this point. This is used to calculate multidimensional indicators (quantifications) normalized within boundaries of 0 to 1.

The Hellwig method should be applied on the basis of the above indicators. For this purpose, their standardized values are used and the coordinates of the pattern point in m-dimensional space are determined. Such are the extremal values of the standardized indicators in 2014. They are categorized as stimulators and suppressors. As regards the former, the higher value is related to the increase of the quantitative assessment of the level of the multivariate indicator (competitiveness), while regarding the latter, it is related to its decrease. In formula (1.10) the stimulating indicators are taken at their maximum values and the suppressing indicators are taken at their minimum values [2].

$$c_{i0} = \left[\sum \left(z_{ij} - z_{0j}\right)^2\right]^{\frac{1}{2}} \quad \text{……..(1.10)}$$

where c_{i0} is the Euclidean distance between the competitiveness of the i-th forest enterprise and the pattern point;

z_{ij} – the standardized value of the j-th indicator of the competitiveness of the i-th forest enterprise;

z_{0j} – the standardized value of the j-th indicator at the pattern point.

The quantitative assessment (multivariate indicator) of the level of competitiveness of the i-th forest enterprise is determined through the formula (1.11):

$$I_i = 1 - \frac{c_{i0}}{c_0} \qquad \text{……..(1.11)}$$

where I_i is the multivariate indicator (quantitative assessment) of the level of competitiveness of the i-th forest enterprise;

c_0 – sum of the mean value of the six Euclidean distances determined through formula (1.10) and their doubled standard deviation.

2. Assessment of the Level of Competitiveness of the State Forest Enterprises

The standardized values of the indicators characterizing the competitiveness of the state enterprises managing the state forest territories as of 2014, and the coordinates of the pattern point are given in Table 1.

Table 1. Standardized values of indicators characterizing the competitiveness of the state enterprises in 2014

State enterprises	Competitiveness of the marketed products	Productivity of Labor	Financial Performance	Enterprise Growth	Market Adaptability	Economic Realization of Ownership of Forest Resources
North West State Enterprise, Vratsa	-0.7100	0.5916	-0.4613	0.9693	0.7740	-0.7976
North Central State Enterprise, Gabrovo	-0.9791	1.3703	-0.2865	0.2661	0.6394	0.1749
North East State Enterprise, Shumen	-0.9172	0.8416	0.0491	-1.2036	-0.8413	0.7170
South West State Enterprise, Blagoevgrad	-0.1197	0.9119	-0.5029	0.9697	1.7163	0.4698
South Central State Enterprise, Smolyan	1.4555	1.4269	0.2202	0.4303	1.4471	2.1265
South East State Enterprise, Sliven	0.3852	0.6748	-1.1830	-1.0078	0.3702	-0.6326
Coordinates of the pattern point	**1.4555**	**1.4269**	**0.2202**	**0.9697**	**-0.8413**	**2.1265**

By using formulas (1.10 – 1.11) and the extremal values of the above indicators, the quantitative assessments of the level of competitiveness of the six state enterprises can be found. They are presented in Table 2, along with the relevant positions in the linear ordering for 2014.

Table 2. Quantitative assessments of the level of competitiveness in 2014

State enterprises	Assessments	No.
North West State Enterprise, Vratsa	0.1238	6
North Central State Enterprise, Gabrovo	0.2435	3
North East State Enterprise, Shumen	0.2426	4
South West State Enterprise, Blagoevgrad	0.2573	2
South Central State Enterprise, Smolyan	0.5006	1
South East State Enterprise, Sliven	0.1326	5

CONCLUSION

Based on the obtained results, the following recommendations can be given to increase the competitiveness of the six state enterprises managing state forest territories:

- **North West State Enterprise, Vratsa**: to increase the operational profit; to decrease the relative share of unsold timber; to increase the fixed assets and to decrease the short-term liabilities; to optimize the number of employees.
- **North Central State Enterprise, Gabrovo**: to change the methods of timber usage in order to increase the market prices; to optimize the number of employees.
- **North East State Enterprise, Shumen**: to increase the sale prices; to decrease the short-term liabilities; to increase the fixed assets.
- **South West State Enterprise, Blagoevgrad**: to improve the adaptability to the market through modifications of the manners of timber use; to increase the return on equity; to sell the old and to buy new assets.
- **South Central State Enterprise, Smolyan**: to increase the financial independence.
- **South East State Enterprise, Sliven**: to increase the operational profit; to increase the fixed assets; to increase the short-term assets and to decrease the short-term liabilities.

The analysis and assessment of the level of competitiveness is a reliable tool in revealing the strengths and weaknesses of the enterprises. Nevertheless, the recommendations for future actions should not be imposed on all Territorial Divisions of the relevant enterprise. Before this, a more large-scale research should be conducted. This is necessary because one state enterprise may have in its structure DGS and DLS, which are characterized with optimal values with respect to the analyzed derived and one-dimensional indicators.

REFERENCES

[1] Велев, М. Оценка и анализ на фирмената конкурентоспособност, с.,188, 2004.

[2] Мишев, Г. Квантификация на многомерни признаци. Научни трудове на УНСС, България, кн. 3, с. 3-31, 1992.

[3] Пейков, Н., Промени в секторната структура и динамика на икономиката, Национална научна конференция на тема „Икономически предизвикателства: растеж, дисбаланси, устойчиво развитие", катедра „Икономикс" при УНСС, София, България, ИК-УНСС, с. 144-152, 2016.

[4] Попова, И., М. Зинцова. Методика определения интегрального показателя конкурентоспособности розничных торговых сетей. Интернет-журнал „Науковедение", Россия, Том 7, с. 1-11, 2015.

[5] Цоклинова, М., 2014. Ефекти от несъвършената конкуренция върху пазара: загуба на благосъстояние при монопол, Десетата юбилейна международна научна конференция на тема „Икономика на България и Европейския съюз – съвременни предизвикателства и подходи за решения", УНСС, Финансово-счетоводния факултет, България (под печат)

[6] Цоклинова, М., 2014. Съвременни измерения на държавната намеса в пазарните отношения: стимулиране на конкурентна среда и икономически растеж. Национална научна конференция на тема „Икономически предизвикателства: растеж, дисбаланси, устойчиво развитие", катедра „Икономикс" при УНСС, София, България, ИК-УНСС, с. 88-95, 2016.

MIGRATION OF LABOUR IN THE BALTIC STATES: ECONOMIC IMPACT AND CONSEQUENCES

Dr.Daina Vasilevska[1]
Prof.Dr.Baiba Rivza[2]
Dr.Inese Lusena – Ezera[3]
Dr.Una Libkovska[4]

[1]Liepaja University, **Latvia**
[2]Latvia University of Agriculture, **Latvia**
[3]Liepaja University, **Latvia**
[4]Ventspils University College, **Latvia**

ABSTRACT

The aim of the article is to clarify the impact of migration on labour resources and its economic consequences on the economics of the Baltic States (Lithuania, Latvia and Estonia) and analyse the policy for facilitation of re-emigration to the Baltic States. The results of the research have been obtained by analysing the planning documents of the re-emigration policy of the Baltic States, Statistical Bureaus' data regarding the migrant flow from 2010 to 2015, and by analysing the theoretical aspects of the impact of international migration of labour on the national economies. At the beginning of 21st century, the problem of international migration of labour in the whole world has gained very important theoretical and practical significance. The last global economic crisis has shown the flexibility of migration and further confirmed that the mobility of a person is an integral part of our globalized world. On the basis of the data of the World Bank, more than 215 m persons (3% of the world population) live outside their country of origin. However, migration is still a politically sensitive phenomenon that has a significant impact on countries' economies. International migration of labour of the Baltic States is an export with low added value (at macro level and mezzo level) and private investment in the joint capital of a person (at micro level). Migration is influenced by different economic, political and social factors in the country of origin of the migrant (factors facilitating the migration) or in the country of destination (connecting factors). The results of the research showed that migration has an impact on labour resources in all three Baltic States, however, an intensive emigration problem is expressed more in Latvia from the three Baltic States, but in the context of the policy, the economic growth rates of the Baltic States can decrease materially because there is a lack of labour attraction strategies, migration policy, and inaction of politicians and officials is observed in reduction of the negative consequences of emigration.

Keywords: labour migration, human resources, return migration, Baltic States

INTRODUCTION

Due to the outflux of labour to the older member states of the EU, labour shortages have become one of the most topical issues of the economic policies in the Baltic states. The way it is handled will determine the economic development of the country in the foreseeable future. Labour shortages may be a constraint on the growth of

the national economy, since replacement with technologies is not always possible. Labour shortages may hamper a balanced growth in the event that businesses, in order to retain and attract labour, are compelled to raise wages at a rate exceeding that of productivity growth. Moreover, if, up to now, the labour market in the Baltic States has been able to sustain rising employment, these internal reserves will soon be exhausted due to the decrease of unemployment rates and increased participation in the labour market.

Freely accessible labour markets in the older EU member states (the so-called "open door effect") and the foundation and consolidation of a diaspora (or the "network effect") have been promoting the emigration of the Latvian population. [2] The authors believe that, apart from increased productivity, a well-considered facilitation of immigration could also become an important measure for sustaining social welfare and economic growth.

Economic development of the Baltic States

Macroeconomic indicators show the more rapid development and advantages of Estonia, compared to Lithuania and Latvia. As for manufacturing, export and innovations, Latvia lags behind Estonia and Lithuania. All three Baltic States are experiencing a worsening demographic situation and the most rapid population decline in the EU. This may restrict economic growth rates.

"Heritage Foundation" institute has developed international rating on economic freedom and rated Latvia as 36th in world. In addition, Estonia was 9th, and Lithuania was occupying 13th place. [12] "Heritage Foundation" rating has evaluated economic freedom in 157 countries. Particular index is made on the grounds of trade policies, taxation capacity, state involvement in economic processes, monetary policies, capital flows and foreign investment, banking and financial segment, property law and corruption level. In 2008, the average rating of all reviewed states was equal to 60.6%, in Estonia it was equal to 77.2%, in Lithuania – 75.2% and in Latvia – 70.4%. [12]

According to analytical research group "Economist Intelligence Unit" (EIU) published reports on investment climate in journal "The Economist" Latvia was occupying 39th place. Withal, Latvia is in a bit more favour situation is comparison to Lithuania which is on 42nd place. However, Estonia among all Baltic States was rated as the best with 23rd place. Last research and report indicators has shown, that, only after several decades Baltic States will reach average EU welfare level. As analytical research group EIU of "The Economist" long-term prognosis claims, Latvia will need approximately 40 years to reach EU welfare level, Lithuania will reach EU average in 37 years, and Estonia will reach it in 31 year. [11]

Labour migration in the Baltic States

Comparatively low average wages in Latvia (EUR 818.00) [9], failure to find work, as well as a heavy burden of debt are the driving factors for the workforce's emigration to other EU states. The preliminary data of the 2011 census confirms earlier expert assessments about the vast scale of emigration: in 11 years, the population in Latvia has decreased by 309,000, with migration contributing more than half (190,000). According to the current data, during recent years there has been no significant fall in emigration. 25,500 people emigrated from Latvia in 2013, which is only about 20% less than in 2012. [9]

Due to comparison of Latvian and Estonian migration data, it was concluded that, the number of Estonian migrants is lower: during 2012, 10 873 citizens left Estonia, however in 2013 this number was equal to 6 740. [8]

Furthermore, if we compare Latvian and Estonian numbers of labour migrants, it is clear that Lithuanian situation is worse, consequently 41 000 citizens left their country in 2012 and 38 818 citizens left in 2013. [10] Statistical review on migration issues in Lithuania since 2001 to 2015 claims that "Lithuania is de facto a country of emigration. Lithuania's emigration rate is among the highest in the European Union. Since independence in 1990 around 825 thousand people or almost one third of the population has left the country. Although emigration in itself is not a negative phenomenon, Lithuania faces great challenges due to the high rates of emigration: the age composition of the society changes (the population is ageing), labour and skills shortages emerge, as well as the brain drain (emigrants work in low-skilled occupations while abroad)". [10] According to migration in numbers by European Migration Network (EMN), 525,540 persons have emigrated from Lithuania during the time from 2004. [10] According to Latvian Central Statistical Bureau summaries, in time period from 2000 to 2013, approximately 259 000 Latvian citizens permanently left their country [9], however in Estonia from 2004 to 2013 were 51 081 migrants. [8]

According to Eurostat data in 2013 major part of Baltic migrants were citizens from 15 to 61 years old (74,2% in Latvia, 85,46% in Lithuania and 76,38% in Estonia), however if compare in accordance to age groups, it is clear that, in all three countries most active migrants were in age group from 20 to 44 years old [1] (see Fig.1).

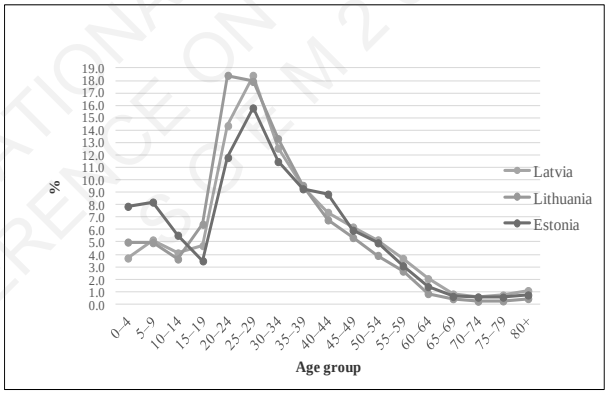


Figure 1. Migration by Age group from Baltic States in 2013[8;9;10]

As it is shown on Figure 1, the highest value of migrant activity is in working age group from 25 to 29 years old: in Latvia it is 18,4% young migrants, in Lithuania – 17,9%, in Estonia – 15,8%. Most émigrés – 18,700 or 82.8% are of working age population (15 to 61 years old), while, in 2012, this ratio was 81.3%. Nearly 23% of the working age population or 4,300 were young people aged 15-24, and this figure does not decrease (in 2012, 4,200 young people aged 15-24 left the country). According to the CSB, between 2000 and 2013 about 259,000 left Latvia and did not return. [9]

Most of the destination countries are in Europe: The U.K., Ireland, as well as the Scandinavian countries. The opening of labour markets in 2011 by Germany, Austria and Switzerland put some pressure on employers. Yet, the debt crisis in Europe, rising

unemployment rates and changes in the benefits system made the nationals of the Baltic States return home.

As for the selection of the country of residence, one can draw parallels with goods, because, in either case, it is both emotional and pragmatic factors that determine the choice. All goods have three basic properties that determine whether you buy them or not – price, quality and brand. Similarly, each country also has three properties determining whether it will be chosen as the domicile – wage level, quality of life and sense of belonging or perception whether you can realise your capabilities in this country. Each of these three factors determine the motivation to leave or to stay – of course, everyone has their own individual situation and own hierarchy of values. If the focus is on the material aspect, then factors determining the flow of migration are varied perceptions as to the expected wage level, unemployment and income level in different countries. If the differences are big enough to induce people to change their place of residence, it leads to migration. It should be noted that, if during the first emigration wave, the determining factor was the difference in wage levels between the Baltic States and Western Europe, now it is growing unemployment and the pessimistic expectations for the future.

Often, it is believed that, in the current situation, the possibilities to emigrate slow down the growth of unemployment and, consequently, alleviate social tensions. However, one should keep in mind that many young and well-educated people are emigrating, and there could be potential employers among émigrés who could use their business ideas and give jobs not only to themselves but to other people as well. Likewise, the effect of migration on the social budget has two sides. On the one hand, during an economic downturn, emigration reduces the numbers of jobless and recipients of social benefits, while, on the other hand, social insurance contributions go down as well. According to research results, emigration has a negative impact on the social budget in the medium-term.

Analysis of the effects of international migration of the workforce from the Baltic States

Latvia and Lithuania are among the three "worst demographic cases" in the eastern part of the EU both in terms of birth rates after joining the EU and the rate of natural increase [2]. The loss of young people and families as a result of emigration has an even stronger effect on the negative natural increase, thereby accelerating the ageing of the population and increasing the demographic burden. During the crisis and post-crisis period between 2009 and 2012, emigration rocketed to a level that jeopardised the regeneration of society, sustainability of the social insurance system, economic growth and competitiveness. Despite the fact that emigration from the Baltic States helped to alleviate the economic and social consequences of the crisis by absorbing the increase of unemployment, preventing an even steeper plummeting of wages and bringing in money transfers from émigrés in material amounts, it, nevertheless, caused a decrease of GDP and a shrinking of internal markets, thus making Latvia less attractive to investors [2]. The research carried out up to now suggests that, over the longer term, emigration is a threat to further economic development prospects and sustainability of the demographic and social system for Latvia. These adverse aspects can be partly compensated by involving the diaspora in the economic development of Latvia, namely,

by facilitating the return of expatriates and using their knowledge in Latvia for start-up businesses and in the spheres of economy, culture, education, science and others.

Equally, in the case of labour emigration and immigration, a variety of positive and negative effects on the national economy can be observed in respect of both low qualified and highly qualified labour (Table 1). For example, in the long-term, emigration deteriorates the potential of the national economy, especially if the émigrés happen to be highly qualified professionals. Still, when these expatriates return to their native country, they could make use of valuable work experience and newly acquired knowledge, thereby contributing to the national economic potential – this is particularly true for those well-educated specialists who have been in traineeships abroad in relevant professions.

The research conducted abroad shows that long-term international labour migration allows many emigrants to improve their living standards and alleviates social tensions in the migrant's native country; at the same time, there are many émigrés who fail to attain their economic objectives through emigration and lose their links with their native community. [14]

Table 1. The effect of international workforce migration on the national economy

Type of workforce migration	**Positive effects of international migration**	**Negative effects of international migration**
Low-qualified labour	- indirectly affects the businesses in terms of profit and taxes on the increasing household demand; - alleviation of social tensions in the society; - workforce builds international experience.	- loss of public funds invested in education of people; - increase of demographic burden.
Qualified labour (for work corresponding to the qualifications)		
Qualified labour (for unskilled work)		- partial irreversible loss of investment in education; - increase of demographic burden. - loss of work skills acquired in own country.

According to the data compiled by the Statistical Department of Estonia, Latvia is the Baltic state facing the problem of intensive emigration most: 16% of Latvians and 18% of other ethnicities associate their own future and the future of their children with living abroad, the data in Estonia being 4% and 15% respectively. [8]

In order to address the workforce problems and to invite those who have left the country in search of income back home, the governments of the Baltic States have drawn up plans in support of re-emigration measures. (Table 2) These plans include several activities towards re-emigration to which the governments have committed themselves, for example, a number of benefits, streamlined registration of children with educational institutions, language courses for children etc. The objective is to encourage at least 100,000 people to return to Latvia, 80,000 to Lithuania and 45,000 to Estonia in the years to come. [3;6;7]

Table 2. Re-emigration measures in the Baltic countries [3;6;7]

	Target country	Policies
Estonia	Finland Sweden Germany	The task of the Ministry for Population and Integration Affairs is to promote the re-emigration of Estonians. The government grants financial support. The benefit is up to EUR 300 per person. In addition, up to EUR 600 is granted for each minor. The government may grant additional funds for the purchase of an apartment or a house, however, the total amount of benefits should not exceed EUR 3,000.[7]
Latvia	U.K. Ireland Germany	The Secretariat of the Special Assignments Minister for Social Integration Affairs has developed proposals addressed to the government: dual citizenship for the children of Latvian citizens living abroad, continuous monitoring of emigration and re-emigration, prevention of mass emigration, promotion of re-emigration, facilitation of re-emigration and re-integration, providing of an information link for those living abroad, e.g., broadly accessible information about work opportunities in Latvia, promotion of political engagement, education of the society.[3]
Lithuania	U.K. Ireland Spain Germany	Information campaigns on re-emigration, setting up of consultancy and information centres in Dublin and London with the purpose of promoting repatriation, informing people about the opportunities in the labour market, and especially to provide support when people encounter legal and administrative obstacles. The government envisages providing support to expatriate communities, as well as incentives to study in the universities of Lithuania. From EU structural funds, the government is planning to finance about 100-200 innovative research projects that could be implemented in Lithuania. A condition to receive support for a project could be engaging a person who has lived abroad for more than one year in the project. In respect of this, it is also planned to attract and implement "brain gain" programmes.[6]

According to statistics, the economy in Estonia is growing rapidly and new jobs are created on a continuous basis; still, the country may run out of labour resources in the near future. Analysts give a forecast: if the employment rate in the age group between 15 and 64 reaches 70%, labour resources in Estonia will be exhausted by 2017. To sustain current economic growth rates, now Estonia would need about 40,000 to 50,000 foreign workers per year. [7]

Latvia has no labour market and migration policy in place, nor are there any appointed authorities in charge of the availability of workers for the sectors of the national economy. In January 2007, a special task force of the government developed a "Concept about migration policy in the context of employment". [3] The concept envisages reducing one-off costs related to the import of labour by 60% and to streamline bureaucratic procedures, thereby showing gradual policy liberalisation.

Presently, the migration policies in Latvia are, nevertheless, targeted towards very tight protection of the domestic labour market. At the same time, the Secretariat of the Special Assignments Minister for Social Integration Affairs up to now has failed to develop a new future-oriented social integration programme that would also determine the approach of the state towards immigrants; according to the estimates done by government bodies, their number could be about 3,000 people per year, whereas, according to industry professionals, the number could reach several tens of thousands. Yet, if the overall trends suggest liberalisation of the immigration policies, this should go hand in hand with integration measures.

Lithuania, which experiences the highest emigration of its workforce, has more effective policies for attracting migrant workers to the economy. The economic growth rates in the Baltic States may slow down considerably due to non-existent strategies for attracting labour and migration policies; also, politicians and officials lack activity in mitigating the negative impacts of emigration. (Table 3)

Table 3. Policies of attraction for labour migrants in the Baltic States

	Number of migrant workers in 2014. (+ number of immigrants in 2015)	Countries	Policies
Estonia		Ukraine Russia	The number of migrant workers is restricted to 0.05% per annum from the number of permanent residents of Estonia. There is one single authority in Estonia handling the issuance of residence permits and work permits, and it is the Department of Citizenship and Migration Affairs. The state fee for a residence permit and work permit is approximately EUR 120.00.[7] Estonia has signed a bilateral agreement with Ukraine concerning the admittance of workers in specified quantities and having specified qualifications, which also has a provision for them returning back.
Latvia	2117 (+1598) [8]	Russia Ukraine Moldova Belarus	An entrepreneur in Latvia, in order to employ a migrant worker, should first apply to the State Employment Agency (NVA), register the vacancy, then, one month later, confirm the work invitation with the NVA, then register and confirm the invitation with the OCMA and wait for the temporary residence permit. The state fee for a residence permit and work permit is approximately EUR 200.00. [13]

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS 2016

Lithuania		Russia Belarus Ukraine	Work permits are issued by the Employment Service of Lithuania, delivering services free of charge. The state fee for a work permit for one year is approximately EUR 120.00.[4] Lithuania has signed a bilateral agreement with Belarus concerning the admittance of workers in specified quantities and having specified qualifications.

CONCLUSION

Up to now, the internal resources of the Baltic States have been sufficient for sustaining their economic growth rates. In terms of macroeconomic indicators, Estonia, having the most stringent migration policies, has notable advantages compared to Lithuania and Latvia. Owing to these advantages (openness of economy, investment environment, export, manufacturing, GDP, development of research and innovation), Estonia can afford to not change its migration policies for the time being.

As for Latvia and, in particular, Lithuania, the situation is still affected by mass emigration. All three Baltic States have a shrinking population, and their demographic outlook is the worst in the EU.

An open labour market is a most critical prerequisite for the development of innovative projects and technologies. Long-term development in Europe is associated with the need for immigrants. Apart from the demand in a market economy, this is also dictated by the demographic situation and the ageing of society. Smoothly functioning and open labour markets attract migrants with better qualifications, whereas unskilled labour and people who are ready to work illegally would prefer economies with strict employment protectionism.

REFERENCES

[1] Emigration by five year age group, sex and citizenship. Available: http://ec.europa.eu
[2] Hazans, M., Migration experience of the Baltic countries in the context of Economic Crisis. In: M. Kahanec, K. F. Zimmermann (eds.). *Labor Migration, EU Enlargement, and the Great Recession.* Berlin–Heidelberg: Springer, pp. 297-344, 2016.
[3] Koncepcijas par migrācijas politiku nodarbinātības kontekstā (Concept about migration policy in the context of employment), 2007. Available: www.pmlp.lv
[4] Lithuanian Labour Exchange. Available: www.ldb.lt/en
[5] Migration and migrant population statistics. Available: http://ec.europa.eu/eurostat/
[6] Ministry of the Interior of the Republic of Lithuania. Available: www.vrm.lt/en
[7] Police and Border Guard Board. Available: https://www.politsei.ee/en
[8] Statistics Estonia. Available: www.stat.ee/en
[9] Statistics Latvia. Available: www.csb.lv/en
[10] Statistics Lithuania. Available: www. http://123.emn.lt/en/general-trends/
[11] The Economist Group. Available: http://www.eiu.com/
[12] The Index of Economic Freedom. Available: http://www.heritage.org/index
[13]The Office of Citizenship and Migration Affairs. Available: www.pmlp.lv
[14] Van der Geest K., Local Perceptions of Migration from Northwest Ghana. Scientific Journal "Africa", 80(4), pp. 595-619, 2010.

MODELING PRUDENTIAL IMPACTED BANKING IT-SYSTEMS USING QUEUEING THEORY MODELS

PhD. Prof. Ion LUNGU
PhD. Candidate Florin-Catalin ENACHE
PhD. Candidate Adriana-Nicoleta TALPEANU
The Bucharest University of Economic Studies, Bucharest, **Romania**

ABSTRACT

This paper surveys the contributions and applications of queueing theory in the field of banking data networks.

The specificity of the Little's Law and Erlang B and C mathematical definitions of the formulas will be described, used and confirmed by computer simulations of real queues usually found in the banking computing systems. A few models will be then developed based on specific arrival rate and average service time statistical distributions.

Using the presented methods, sufficient information will be presented to performance analysts, especially the ones interested in modeling a network of real-life banking computer systems.

Keywords Little's Law, queueing theory, banking system, computer network, economical informatics, banking regulation, computer simulation, Basel

1.INTRODUCTION

During the last years, the types and complexity of people's needs increased fast. In order to face all changes, the technology had to develop new ways to fulfill the new demands. Therefore, I take a deeper look into the basic terms needed for understanding the stochastic analysis and the queueing theory approaches for computers performance models. The most important distribution for analyzing computer performance models is the exponential distribution, while the most representative distribution for statistical analysis is the Gaussian (or normal) distribution. For the purpose of this article, an overview of the exponential distribution will be discussed.

2.THE ERLANG B FORMULA – PROBABILITY OF BLOCKING

For analyzing this model, we are going to assume:

- *s* servers
- requests that arrive at a certain arrival rate λ
- an average service time τ

This queue will be intuitively analyzed by using the classical *rate-up=rate-down* argument used in engineering, then the model will be limited and confirmed by using computer simulations.

The Fig. 1 below describes the system states for a queue with 3 services. Understanding the mechanism from Fig. 3 will help define a mathematical model and later develop the computer model simulation used to confirm the specific cases where this is available.

For this specific system we could be in state 0, 1, 2 or 3, which represents the number of customers present in the system - *N(t)*. We start at state 0, where no request is present in the system. Once the first customer arrives, the system jumps to state 1, it will stay there a while, until either that request completes or another request arrives. If another call arrives before the first one completes, then the system jumps to state 2, and stays there a while. Consequently, jumps down to 1, then it jumps up to state 2, and then maybe to state 3, and so one. If a customer arrives in state 3, then because all servers are busy, that would be a lost request. Practically every jump up corresponds to an arrival and all the jumps down correspond to a departure. *Rate up=rate down* means in this case that on the long term the number of the customers that arrive will equal to the number of customers that leave the system.

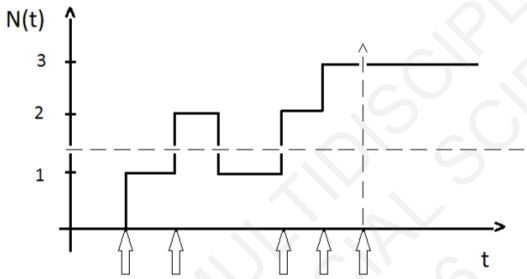


Fig.1. Random arrivals and random service times in a multi-server queue

The model will be analyzed by equating for each state the rate at which the system jumps up from that state to the rate the system jumps down from the state above it. If we look at the Fig.3., the dotted line shows that the number of jumps up and the number of jumps down will differ by at most 1, which in limit does not matter. That means that by dividing the number of jumps up by the total amount of time we get the rate up, and by dividing the number of jumps down by the total amount of time results the rate down. The rate up from $P_0 = \lambda P_0 = \frac{1}{\tau} P_1$ =rate down from P_1. By the same argument, λP_1 would be the rate up from state 1, and $\frac{2}{\tau} P_2$ is the rate down from state 2, since from state 2 there are 2 chances for a completed request. Going further with this argument, the following set of equations is developed:

$$\begin{aligned} \lambda P_0 &= \frac{1}{\tau} P_1 \\ \lambda P_1 &= \frac{2}{\tau} P_2 \\ \lambda P_2 &= \frac{3}{\tau} P_3 \\ &\vdots \\ \lambda P_{s-1} &= \frac{s}{\tau} P_s \end{aligned} \qquad \textbf{(1)}$$

The problem is reduced to solving this set of equations and finding P_s - the probability that all servers are busy. By normalizing and using the notation $\lambda\tau = a$, it is hints that the solution would depend on the number of servers and on the product $\lambda\tau = a$, called offered load, and not by the individual values of either λ or τ .

$$\begin{aligned} P_1 &= \lambda\tau P_0 = aP_0 \\ P_2 &= \lambda\tau P_1 = \frac{a^2}{2}P_0 \\ P_3 &= \lambda\tau P_2 = \frac{a^3}{3!}P_0 \\ &\vdots \\ P_s &= \lambda\tau P_{s-1} = \frac{a^s}{s!}P_0 \end{aligned} \quad \Rightarrow \quad P_j = \frac{a^j}{j!}P_0,\ j = 1,2,...,s \quad \textbf{(2)}$$

The set of equations is completed by the fact that:

$P_0 + P_1 + ... + P_s = 1 \Rightarrow P_0 + \frac{a^1}{1!}P_0 + \frac{a^2}{2!}P_0 + ... + \frac{a^s}{s!}P_0 = 1$, therefore, $P_0 = \frac{1}{1 + \frac{a^1}{1!} + \frac{a^2}{2!} + ... + \frac{a^s}{s!}}$, resulting that $P_s = \frac{\frac{a^s}{s!}}{1 + \frac{a^1}{1!} + \frac{a^2}{2!} + ... + \frac{a^s}{s!}} = E_{1,s}(a) = B(s,a)$ **(3)**, also named the Erlang B formula, giving the probability of blocking, which is the probability that all servers are busy.

At this moment, it is quite easy to calculate how many servers would be needed in order to have, let's say less than 1% dropped requests. This is important on both financial and quality aspects. If too many servers are provided, then the service will be good, but the entire system will be more expensive than necessary. Looking at Fig. 2, we would draw the line corresponding to 0.01, estimate the offered load, and then search for the first curve that would lie below point of intersection. This points out the practical application of the Erlang B formula that helps engineers to calculate the number of servers needed for given values of the offered load and percent of lost requests.

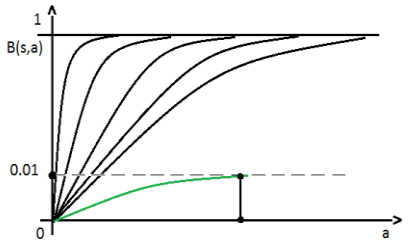


Fig.2. Erlang B graph

3. THE ERLANG C FORMULA – BLOCKED CUSTOMERS DELAYED

By extending the heuristic conservation-of-flow to include the case in which all customers who find all servers busy wait until they are served, and by following the same intuitive approach, rate up=rate down, we get the following set of formulas:

$$\begin{aligned}
&\lambda P_0 = \frac{1}{\tau} P_1 \\
&\lambda P_1 = \frac{2}{\tau} P_2 \qquad \Rightarrow P_j = \frac{a^j}{j!} P_0,\ j = 0,1,\ldots, s-1 \quad \textbf{(4)} \\
&\lambda P_2 = \frac{3}{\tau} P_3 \\
&\vdots \\
&\lambda P_{s-1} = \frac{s}{\tau} P_s
\end{aligned}$$

Further, when looking at the first set of formulas it was concluded that the rate down from state 2 is $\frac{2}{\tau}$, but at the point where all servers are busy, the aggregate service completion rate would be constant and equal to $\frac{s}{\tau}$ because all servers are busy, and only *s* customers are served. This leads to the following set of equations:

$$\begin{aligned}
&\lambda P_s = \frac{s}{\tau} P_{s+1} \\
&\lambda P_{s+1} = \frac{s}{\tau} P_{s+2} \quad \textbf{(5)} \quad \Rightarrow \quad P_{s+1} = \frac{a}{s} P_s = \frac{a^{s+1}}{s! s^1} \\
&\lambda P_{s+2} = \frac{s}{\tau} P_{s+3} \qquad\qquad P_{s+2} = \frac{a^{s+2}}{s! s^2} \\
&\vdots
\end{aligned}$$

By combining equations (4) and (5), the following formula is deducted for this model:

$$P_j = \begin{cases} \frac{a^j}{j!} P_0, (j = 1, 2, \ldots, s-1) \\ \frac{a^j}{s! s^{j-s}}, (j = s, s+1, \ldots) \end{cases} \quad \textbf{(6)}$$

By normalization (requirement that all probabilities add up to 1) we get:

$$P_0 + P_1 + \ldots + P_s + P_{s+1} + \ldots = 1 \Rightarrow P_0 (1 + \frac{a^1}{1!} + \frac{a^2}{2!} + \ldots + \underbrace{\frac{a^{s-1}}{(s-1)!} + \frac{a^s}{s!} + \frac{a^{s+1}}{s! s^1} + \frac{a^{s+2}}{s! s^2} + \ldots}_{\frac{a^s}{s!}(1 + \left(\frac{a}{s}\right)^1 + \left(\frac{a}{s}\right)^2 + \ldots)}) = 1 \quad \textbf{(7)}$$

It is obvious that the right part of the above equation is an infinite geometric series and the formula only makes sense if the series converges. By mathematical reasoning, the

SCIENTIFIC 3rd INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS S G E M 2 0 1 6

series converges to $\frac{1}{1-\left(\frac{a}{s}\right)}$; therefore, the formula makes sense if and only if $a<s$. We conclude that $P_0 = \frac{1}{\sum_{k=0}^{s-1}\frac{a^k}{k!}+\frac{a^s}{s!\left(1-\frac{a}{s}\right)}}$ **(8)**, if $\frac{a}{s}<1$.

4. Little's Theorem

The little's Theorem was first published in 1961 and can be stated as $L = \lambda' W$, where L stands for length or queue length, λ' stands for the arrival rate and W stands for the waiting time. Actually this is translated to the fact that the expected queue length is equal to the arrival rate multiplied by the expected waiting time. This is very neat because it connects an average of a discrete random variable (L) and an average of a continuous random variable(W). From a practical point of view, it turns out that it is often relatively easy to calculate the average queue length and from that, by dividing by λ the average waiting times can be easily calculated. We can definitely go back and forth between the 2 averages, but it is obvious that L is usually easier to calculate because it is a discrete variable, while W is a continuous variable.

The basic idea is that for the system represented in Fig.1, we have some entities/customers who arrive and enter the system at rate λ' - entry rate (noted lambda prime in order to distinguish between the arrival rate and the entry rate). The arrival rate is the rate at which the customers seek to enter the system, but in general they do not necessarily enter. When a customer enters the system, it stays there for an average length of time called W (stands for waiting time) and while it is there waiting for its lifetime to expire, on average there is L of them present. The target is to find the relationship between the average amount of time that a customer spends in the system and the number of customers in the systems having their lives spent.

Little's original proof was quite difficult and made some assumptions that turned out to be not necessary, and over the years this has been refined and generalized over and over again and in fact there are many paper now that have to do with Little's theorem and its consequences. Although originally assumptions were made that were essentially probabilistic or stochastic about the stochastic processes involved, it turned out that the it is really a deterministic rule and that the stochastic part had nothing to do with it. This underlines the robustness of the formula, because it is going to hold regardless of whether these arrivals occur according to a Poisson process, and regardless of the service times distribution. Practically the only essential requirement is that the L, W and λ must exist. But as long as they exist, then the formula is going to hold. An intuitive argument that quickly explains the formula. Imagining that the system is observed over a long period of time T and that as the customers enter, they bring with them their

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY

lifetime, and that these lifetimes build-up, it is obvious that these must equal to the lifetimes that are used-up.

Over a certain period of time t, the expected number of arrivals that enter the system would be $\lambda' t$ and each of those customers follows a blueprint of entering the system, staying there for its lifetime (in average W), therefore the total amount of lifetime brought into the system over a certain period of time t is equal to $\lambda' tW$.

On the other hand, the amount of used-up lifetime during the interval of time of length t must be evaluated. On average, there are L people in that system and their lifetimes are expiring in parallel, at the rate of one unit of life per unit of time, so therefore, in time t, if we had 1 person present, the amount of lifetime that would expire would be t, consequently, for L people would be Lt.

On the long run, the boundaries of the initial condition regarding t will be irrelevant, and t can be cancelled out since it is a non-negative value. Mathematically, this can be written as: $\lambda' tW = Lt$ which is equivalent to $\lambda' W = L$.

The beauty of this is that the definition of system is very flexible and the particular type of the stochastic processes involved are irrelevant, making the Little's theorem very powerful and general

5. Comparing the mathematical solution of the queueing problem with the computer simulation

To illustrate the applicability of the software simulation, 4 different arrival times distributions are analysed:

- Exponential service time, with mean service time E(X)=0.5
- Constant service time, X=0.5
- Uniformly identical distributed service times between 0 and 1, X~U(0,1)
- Service times of 1/3 have a probability of 90%, and service times of 2 have a probability of 10%.

The following BASIC code snippet was used to simulate the Erlang B case, by inputing an exponential distribution (generated by the inverse transform function) and calculating the averages that were later compared with the mathematical solution.

```
100 FOR I=1 to 10000
110 IA= 'inter-arrival times to be generated
120 T=T+IA 'time of the next arrival
130 W=W+X-IA 'recursive calculation of waiting times
140 IF W<0 THEN W=0
150 IF W>0 THEN C=C+1 'count all requests that wait
160 SW=SW+W 'sum of waiting times for calculating E(W)
170 X= 'service times to be generated
180 SX=SX+X 'sum of service times for calculating Utilization
190 NEXT I
200 PRINT SX / T, C / 10000, SW / 10000 ' print Utilization, P(W) and
E(W)
```

Table 1. Comparison between the mathematical and simulated results

		ρ		P(W>0)		P(W>0.5)		E(W)	
X	Formula of X	Theory	Simulation	Theory	Simulation	Theory	Simulation	Theory	Simulation
1	-0.5*LOG(1-RND)	0.8	0.799436	0.8	0.799817	0.65498	0.654924	2	1.991853
2	0.5	0.8	0.799724	0.8	0.799895	NA	0.55622	1	0.997296
3	RND	0.8	0.800048	0.8	0.800103	NA	0.622625	1,(3)	1.332808
4	q = RND: IF q <= 0.9 THEN X = 1 / 3 ELSE X = 2	0.8	0.804667	0.8	0.799336	NA	0.616419	2	1.999094

All 4 simulations have been chosen in such way that E(X)=0.5, and the distinction is done by choosing the service times with different distributions. Since the utilization is directly dependent on the arrival rate and mean arrival times, it is equal with 80% in all 4 cases. According to (7), the probability of waiting is also equal to 80% in all 4 cases.
In this simulation, the mean waiting time, as deduced from the Pollaczek-Khintchin(8) formula, confirms the accuracy of the simulation model, and gives insights also for the other cases, offering a clear approximation of the behavior of the designed system. It is interesting to observe that mean waiting time when having exponential service times is double in comparison with the mean waiting time when having constant service times, although the mean service time, the utilization and the probability of waiting are equal in both cases.

CONCLUSION

Based on all information presented in this paper, we can conclude that computer simulation is an important tool for the analysis of queues whose service times have any arbitrary specified distribution. I addition, the theoretical results for the special case of exponential service times (8) are extremely important because they can be used to check the logic and accuracy of the simulation, before extending it to more complex situations.

Moreover, such a simulation gives insight on how such a queue would behave as a result of different service times. Further, I consider that it offers a methodology for looking into more complicated cases, when a mathematical approach cannot help.

REFERENCES

[1] R. B. Cooper, *Introduction to Queueing Theory, Second Edition*. New York: North Holland, 1981, pp. 208-232.
[2] S. Ghahramani, *Fundamentals of Probability with Stochastic Processes, Third Edition*. Upper Saddle River, Pearson Prentice Hall 2005, pp.284-292.
[3] L. Lakatos , "A note on the Pollaczek-Khinchin Formula", Annales Univ. Sci. Budapest., Sect. Comp. 29 pp. 83-91, 2008.
[4] K. Sigman, "Inverse Transform Method". Available : http://www.columbia.edu/~ks20/4404-Sigman/4404-Notes-ITM.pdf [January 15, 2015].
[5] K. Sigman, "Exact Simulation of the stationary distribution of the FIFO M/G/c Queue", J. Appl. Spec. Vol. 48A, pp. 209-213, 2011, Available : http://www.columbia.edu/~ks20/papers/QUESTA-KS-Exact.pdf [January 20, 2015].

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

MODELLING A COST STRUCTURE FOR A POLISH MANUFACTURER: A CASE STUDY OF THE IMPLEMENTATION

Ph.D. Eng. Elżbieta Milewska[1]

[1] Silesian University of Technology, **Poland**

ABSTRACT

Showing the functionality of a select IT system, the author presents a way of adapting production cost calculating algorithms to the requirements and expectations of the company. He describes ways of presenting the profit and loss account of an operation in a financial report of subjects, allowed under Polish law. He presents the influence of the register of economic events connected with the use of company resources on the way costs are grouped together and the unit production costs are calculated. Applying methods of cost allocation which utilise distribution keys and cost drivers has been discussed based on an example implementation. The method of creating valuation algorithms has been shown using IT tools. For the selected example, the author built a multi-level cost structure, defined the calculation set parameters, created calculation variants and conducted an ex ante and ex post analysis of calculation deviations. He also indicated the requirements necessary for conscientious and reliable calculation, and functional restrictions of the IT tools used.

Keywords: technical production cost, cost calculation, implementation

INTRODUCTION

One of the criteria for assessing the profitability of production companies is an analysis of the production costs. The calculation of a unit production cost is not only the basis for verification of the decisions taken by the management personnel and senior management team in respect of price policy, but also an element of the registry of tangible components of current assets kept in accordance with the Accountancy Act [9]. It is obvious that organising an efficiently functioning decision making process in terms of strategic and operational production planning [6] is conditioned by the data on the calculation components being available and up to date. Currently, the foundation of managing the business process of a company and the condition for integrating economic activities is the use of IT systems enhancing the company's information flow, data processing and cause-and-effect relation analysis. Due to the above, the paper will present an example use of a tool facilitating the calculation of a unit production cost.

COMPANY'S OPERATING COSTS

Costs are created as a result of purposefully utilising the resources available in an organisation, allowing the company to gain profits in form of goods or services. They represent a value expressed in currency. The basic definition of costs can be found in the legislature [8, 9], which describes them as a probable creation of economic profits in a reporting period, with a reliably determined value, in form of decreasing the value of active assets or increasing the value of obligations and reserves which lead to a decrease in equity capital in a way other than a withdrawal of funds by shareholders or owners. Costs are an element of the profit and loss account of a financial report of business

entities. It should be noted that the components of a financial report, i.e.: balance, profit and loss account, statement of changes in equity, cash flow statement or additional information, represent consolidated and uniform data created as a result of grouping and aggregating of a large number of transactions or other events which entail financial effects. The account, operating with stream values, groups revenues and corresponding costs and losses.

Two alternative ways of presenting a profit and loss account are allowed in financial reports of Polish businesses in respect of operational activity [8]. Grouping of positions can be done in a *by nature of expenditure* format, otherwise known as *by type of expenditure* format, or in a *by function of expenditure* format (Fig. 1).

By nature (by type) format
Amortisation
Consumption of materials and energy
External services
Salaries
Social insurance and other benefits
Taxes and fees
Other prime costs

By function format				
Direct costs	Consumption of materials used directly for production	Technical production cost	Total production cost	Cost of goods sold
	Salaries of direct production employees			
Indirect costs	Departmental costs			
	Management costs			
	Sales and promotion activity costs			

Fig. 1. Components of cost formats

The nature of expenditure format imposes grouping costs according to the form in which expenditures are incurred. Components of the costs of economic activity include: consumption of materials and energy, external services, amortisation, costs of employee salaries, social insurance and other benefits, taxes and fees, other prime costs (Fig. 1). The nature of expenditure format is used for record keeping purposes. It presents the costs adjusted for the change in the level of stocks and liabilities and receivables connected with operational activity in the analysed reporting period against the cost of goods sold. Determining the financial result using the nature of expenditure method additionally requires taking into account internal turnover generated by using the products for the business entity's own purposes, but does not directly impact the financial result of the company and does not cause the initial cost values to change in the nature of expenditure format.

Costs in the function of expenditure format are assigned to the units of a company's organisational structure. In the objective approach they are accounted for by indicating their place of origin or phase of materials management, and it is done arbitrarily by dividing costs into direct and indirect ones (Fig. 1). Direct costs are defined by the material composition of the parts and the cost of the work time of direct production employees taking part in the production process. Indirect costs show a collective approach encompassing: departmental, management and sales and promotion activity costs (Fig. 1). Departmental costs are connected with maintaining the workstations in a state of productive readiness and ensuring uninterrupted production. Management costs constitute the fundamental group of overhead costs with a wide array of components, while sales and promotional activity costs include mostly expenditures connected with maintaining trade networks and product distribution.

Taking into account the above, the factor which heavily influences the choice of format is the structure of a company's chart of accounts. It is responsible for organising the register of economic events in accordance with the law, conditions of the industry and the Management's needs. It is also a tool for analyses, making it possible for the reports to reflect: the frequency and degree of influence on gaining profits or incurring losses, and the predictability of economic operations. For most business entities it is possible to show information in both formats, where the values of income and costs overall must be identical. Each of the formats caters to different needs. The nature of expenditure format is useful for making prognoses of cash flows, while the function of expenditure one generates information pertaining to the profitability and cost creation of individual organisational units and segments of the business entity.

UNIT PRODUCTION COST

The financial result of a production company presented in a function of expenditure format requires a production cost calculation to be conducted beforehand. In the decision making process, the result of the calculation constitutes a supplementary element in respect of:

- agreeing upon the production volume,
- choice of manufacturing technology,
- choice of assortment composition,
- choice of material procurement sources,
- diversification of production,
- agreeing upon a price policy for the products,
- the choice of a company's investment strategy including automation and robotization of the manufacturing processes.

Due to the necessity to verify the validity of the decisions taken, the calculation of production cost is conducted in two time-related approaches:

- ex ante, i.e. before starting production, where the calculation result is a cost prognosis;
- and ex post, after the production is finished, where the result constitutes an assessment of the work.

Ex ante calculation is based on norms and technical and economic indicators, and is indicative in nature. It is conducted in order to submit a tender to the buyer or compare alternative variants of production processes using the company's various resources. It is important not only due to unexpected changes in demand, but also due to shortages of direct production materials used in the manufacturing process.

Ex post calculation, on the other hand, reflects the actual costs incurred connected with the consumption of assets and human labour, estimated on the basis of accounting documents. The documentation of a company's resource consumption consists of: a tangible assets amortisation plan, salary sheets and material consumption register. The indirect costs in the calculation are determined as a result of actions including:

- gathering information pertaining to the amount of all the costs incurred,
- identifying the cause and effect correlations between materials consumed and cost elements,
- defining the basis for cost division,
- determining the unit production cost.

SCIENTIFIC CONFERENCE INTERNATIONAL MULTIDISCIPLINARY SGEM2016 SOCIAL SCIENCES AND ARTS

The way costs are grouped together and the structure of the calculation algorithm depend on the branch and organisation of the production process as they do influence the way economic event registers connected with resources consumption are kept. More detailed recording improves the accuracy of analyses and increases the reliability of the calculation result. At the same time, however, it increases the costs associated with data collection and prolongs the wait time for the final result. That being said, less detailed recording can lead to a lack of unequivocal identification of the cost creating factor and result in a subjective appraisal of measures taken in regard to the objects analysed. Forming the methods of common cost allocation is a compromise between the accuracy of the model and calculation time.

C. Drury proposes allocating costs using distribution keys based on the relation of transferring indirect costs relative to the previously accounted for direct costs [3]. A similar view is presented by r. Cooper who considers a distribution key to be the allocation basis, simultaneously defining it as the unit amount of resource consumption [2]. In Polish literature, the notions of distribution key and cost object are commonly used [5, 7]. A distribution key [4] is defined as a value, expressed quantitatively or qualitatively, used for accounting indirect costs of the subject of the calculation (ready products, production orders or assortment). A cost object [1], on the other hand, is a factor which, having influence on changing the total cost of an object (measure), entails change in the total costs. This term is also used when referring to factors which shape the relations of mutual resource consumption by individual calculation subjects (products, investment objects, distribution channels), expressed in a particular unit of measurement. The term *cost object* means transferring and distributing the resources consumed onto the calculation subjects. A situation is permissible wherein the calculation subject becomes a cost object as part of further calculations. This happens when the original calculation result is the cost of an intermediate product which is part of the complete product subject to cost calculation in the next stage.

The choice of cost object holds key importance to the correctness of cost calculation. Higher accuracy and reliability are characteristic of calculations based on itemised records and direct reference to cost objects. The higher the share of costs determined using distribution keys, the lower the accuracy and reliability of the model and the higher the distortion of the unit production cost calculated. Apart from cost structure, a factor which determines the quality of the model is the number of cost objects used in the calculation. It is possible to separate multiple levels of uniform groups of indirect costs which, caused by various reasons, can be subject to a separate allocation using different cost objects. Therefore, it is understood that each of the methods of indirect cost allocation is subjective [3].

A greatly simplified form of cost calculation is often used in businesses which manufacture products with uniform structure, and whose processes are simple. Using division calculation, the unit production cost is derived by dividing the costs incurred by the amount of goods produced in the analysed period, treated as a percentage of production resulting from the degree of processing completed compared to a complete product. In case of the production of goods with varying properties, quality or performance characteristics, the division of costs is achieved through a coefficient describing the mutual relationship of the production costs of similar products, determined on the basis of weight, size or working time put into manufacturing the product. It is also possible to apply

a procedure based on valuating the wastes and by-products. In that case, the difference derived by subtracting the value of wastes and by-products from the production costs, is divided by the number of main products.

An especially complicated issue, however, is calculation performed for business entities characterised by production with large diversity of the final products, variability of work and complexity of the technological processes. Companies with this specificity use, among others, additional calculation [5, 10]. Calculating indirect costs of the calculation subject is performed with this method, using the notions of cost object and distribution key. Examples of calculations have been described in [4, 5, 10].

USE OF CALCULATION FACILITATING IT TOOLS

An important role in the area of data collection and processing is played by IT systems. They facilitate both the process of creating and verifying the costs account model. Accurate identification of the cost drivers confirmed by an analysis of deviations of ex ante and ex post calculations is a factor which determines the reliability of the model.

IMPLEMENTATION EXAMPLES

The subject of research conducted by the author is a Polish company that produces highly specialised machinery and technical equipment distributed along with servicing. Moreover, the company has implemented an ERP class system, integrated with an MES class system. The functionality of the IT systems implemented in the company and the way the production planning and control process is organised makes it possible to perform calculations in both ex ante and ex post systems (Fig. 2).

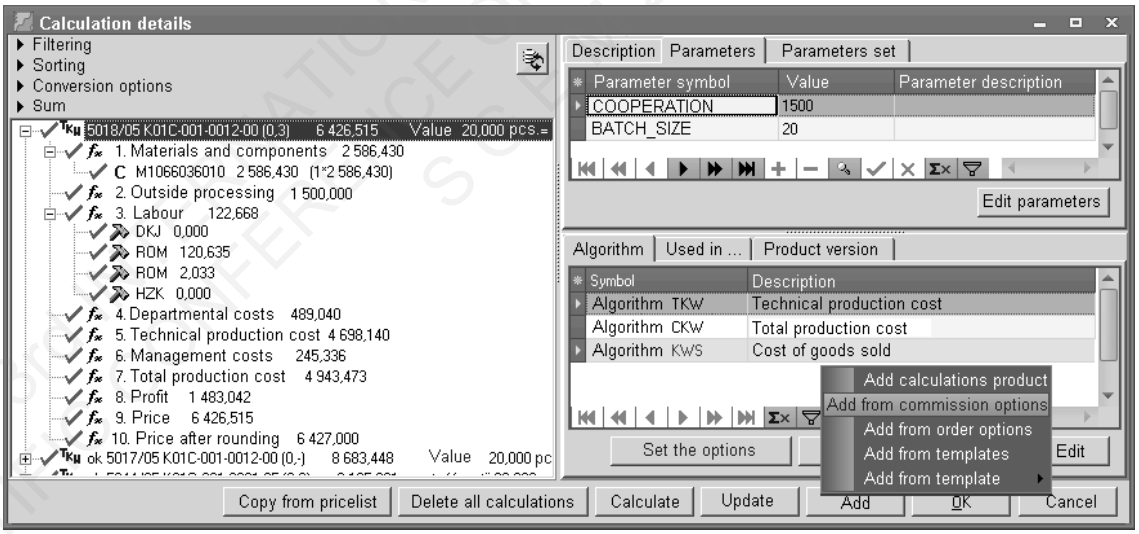


Fig. 2. An example set of price calculations in the ex post system

In the selected company production planning has been based on product technological templates. The records of work time of employees directly involved in the production process are kept using personal identifiers, which activate the machine. Process control also utilises systematic records of material consumption. The solution implemented provides a significant amount of data describing the production process. The record obtained not only precisely determines the time of occurrence of events, but also makes it possible to conduct detailed post-production analyses. The company's calculation format

has been constructed on the basis of two components of direct costs, namely: product component structure and routing, which is an ordered set of technological operations.

The standard functionality of the IT system implemented in the company provides several alternative ways to evaluate the work time of employees directly involved in the production process (Fig. 3) and a few alternative ways of valuating materials used directly in production (Fig. 4).

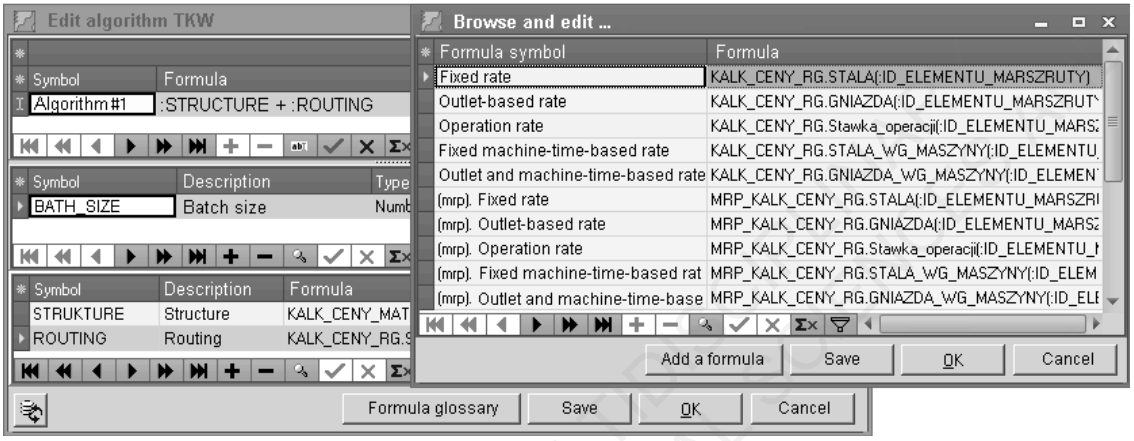


Fig. 3. Valuation of work time of employees directly involved in the production process

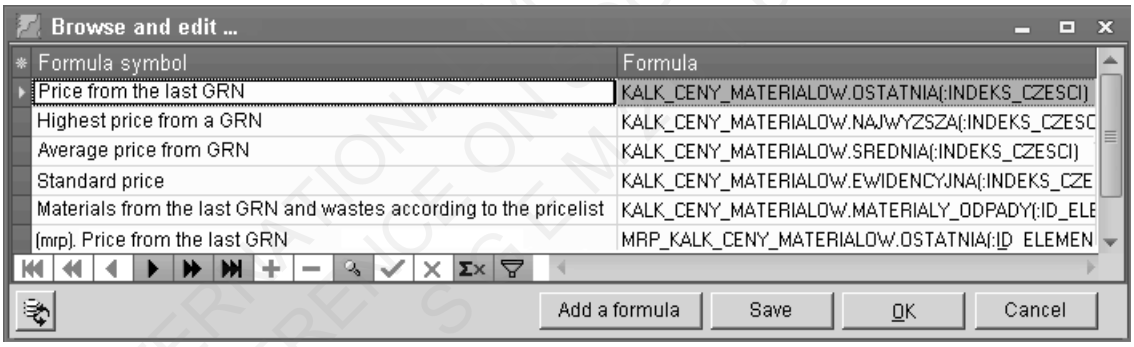


Fig. 4. Valuation of materials directly involved in the production process

Unfortunately, standard valuation methods are not always a satisfying answer to the expectations of companies which use the system. Construction of atypical functions requires programming knowledge. Fig. 5 presents an example source code of a formula used for estimating the number of man-hours, dedicated for the production company discussed in the article.

The IT system implemented in the company allows for creating a multi-level cost structure for a selected calculation subject, wherein the value of individual components can be determined using separate algorithms, defined independently by the system's user. Individual cost groups can be subject to allocation using different distribution keys called parameters in the system. The media for calculating indirect costs in a systemic approach are set parameters. Calculation algorithms, set parameters and calculation formats which have been saved in the registry can be reused multiple times. Creating calculation variants simplifies the relatively easy copying of calculation formats, filtering and sorting of components. It is also possible to interchange groups, update the quantity or value of each of the calculation format components (Fig. 6).

```
function Stawka_operacji( xid number, wielkosc_partii number default null )
return number is
ret number;          TpzR number;       TjR number;        iloR number;
TpzM number;         TjM number;        StR number;        StM number;        WP number;
begin
select     t.tpz_robotnika, t.tj_robotnika, Nvl( t.ilosc_osob, 1 ), t.TPZ_MASZYNY, t.TJ_MASZYNY, ot.stawka,
           ot.stawka_maszyny, i.std_wielkosc_partii
into       TpzR, TjR, iloR, TpzM, TjM, StR, StM, WP
from       kw_tkw_marszruta_skl t, indeksy i, OPERACJE_TECHNOLOGICZNE ot
where      xid = t.id_elementu_marszruty and t.ind_indeks_czesci = i.indeks_czesci and ot.kod_operacji = t. kod_operacji;
return     (((TjR + (TpzR / (Nvl( wielkosc_partii, nvl(WP, 1)))))/ 3600 )* StR + (( TjM + (TpzM/ (Nvl( wielkosc_partii, nvl(WP, 1)))))/ 3600 )* StM );
exception
when others then return null;
end;
```

Fig. 5. Source code of a man hour cost estimating function

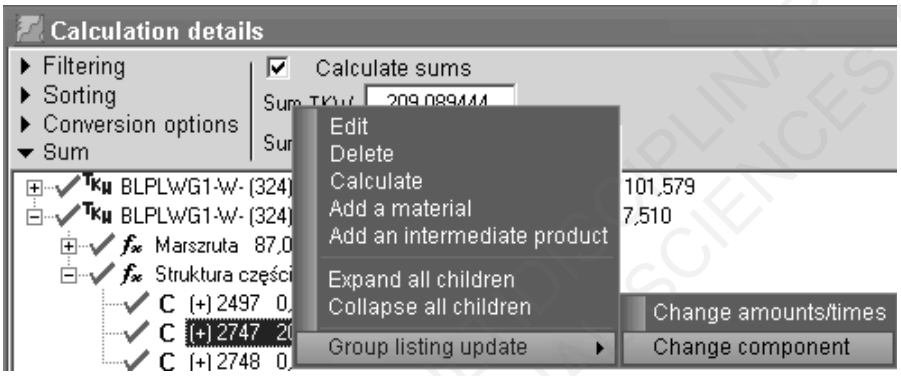


Fig. 6. Context menu available from the level of a component of the calculation format

However, the most important element that explains the effectiveness of the solution implemented is the availability of up-to-date source data describing the individual components of the cost calculation format. This is because the integration of an MES class system, which on an ongoing basis supplies information about the work time of employees directly involved in the production process and the amount of material consumption, and an ERP class system, whose functionality makes it possible to perform calculations, is a solution which brings the company the desired results. Increasing the reliability of the account of costs model in the selected form, on the other hand, is achieved through:

- updating the selling prices of products by assigning a value obtained through calculations to the correct listing of the pricelist,
- conducting calculation deviation analysis in the ex ante and ex post formats for the selected calculation subject,
- periodically determining the trend of changes in material consumption and labour intensity of technological operations.

Unfortunately, a large part of the aforementioned measures is performed using dedicated solutions whose scope exceeds the standard functionality of the IT system.

One of the most important reasons which makes it possible to perform calculations correctly and occurs in the creation of new calculation schemes is the lack of a declared value for the system-wide parameters used. These can be assigned only by the system administrator. The parameters mentioned include PURCHASE_AVERAGE_GRN, whose value indicates the amount of time in days, ending with the current date, in which the approved warehouse goods received documents are taken into consideration when determining the average purchase price of the given product.

CONCLUSION

The resource which gives competitive advantage to today's companies is information. Its correctness, reliability and availability influence the quality of decisions. One of the basic pieces of information used in the decision making process are costs. An important role in the account of costs is played by recording activities. Accurate registering of event which makes it possible to perform calculations that take into consideration up-to-date source data improves the company's competitiveness on the market, increases the efficiency of economic processes and guarantees a quicker return on the invested capital for the owners. As not all costs incurred by the company can be unequivocally assigned to a calculation subject, one of the solutions aimed at determining the unit production cost is the allocation of common costs performed using distribution keys and cost objects. The use of IT systems in this area contributes to the reduction of costs of conducting analyses and the increase of reliability of the models proposed. Use of supporting tools does not, however, exclude the necessity of conducting periodical verification of the assumptions made. Unfortunately, the diversity of methods of determining the unit production cost makes it so that implementing calculation-supporting IT systems requires an individual approach. The lack of a universal calculation format and algorithm forces businesses to take measures connected with a search for dedicated solutions, which are an extension of the standard functionality of the systems implemented, which should absolutely take into account the specific conditions of the subject's economic activity.

ACKNOWLEDGEMENTS

This article was created as part of statutory work 13/030/ BK_16/0024 conducted at the Institute of Production Engineering at the Faculty of Organisation and Management of the Silesian University of Technology.

REFERENCES

[1] Chmielewski A., Jak dobierać nośniki kosztów, aby wyniki kalkulacji były wiarygodne, Controlling, no. 9, 2009.
[2] Cooper R., The Two Stage Procedure in Cost Accounting: Part One. Journal of Cost Management, Summer 1987.
[3] Drury C., Management and Cost Accounting. Chapman & Hall, 1992.
[4] Jaruga A., Nowak W., Szychta A., Rachunkowość zarządcza. Społeczna Wyższa Szkoła Przedsiębiorczości i Zarządzania, Łódź 1999.
[5] Matuszek J., Metody określania kosztów własnych produkcji. Automatyzacja Produkcji, no. 12, 2003.
[6] Milewska E., Zintegrowane systemy informatyczne wspomagające zarządzanie zdolnościami produkcyjnymi. SWwZŚ. Studia i Materiały Polskiego Stowarzyszenia Zarządzania Wiedzą, nr 40, 2011, pp 263-271.
[7] Nowak E., Piechota R., Wierzbiński M., Rachunek kosztów w zarządzaniu przedsiębiorstwem. PWE, Warszawa 2004.
[8] Rozporządzenie Komisji (UE) nr 634/2014 z dnia 13 czerwca 2014 r. zgodnie z (WE) nr 1606/2002 Parlamentu Europejskiego i Rady.
[9] Ustawa z dnia 29 września 1994r. o rachunkowości. (Dz.U. 2013, poz. 330 ze zm.).

MODELLING THE SPATIAL DEVELOPMENT OF THE RUSSIAN BARENTS-ARCTIC REGION

Prof. Nikolay Didenko[1]

Prof. Djamilia Skripnuk[1]

Assoc. Prof. Olga Krasulina[2]

[1] Peter the Great St. Petersburg Polytechnic University, **Russia**
[2] Nizhny Novgorod Institute of Management, **Russia**

ABSTRACT

The paper presents a model of spatial development of the Russian Barents region based on institutional and functional approach. While constructing models of territorial development we describe the socio-economic area development from the point of view of institutional environment. Institutional environment in the model is characterized by the situation in social, economic, industrial and environmental spheres of human activity in the region. The model describes the quality of the institutional environment, including (1) the process of interaction between organizations and actors; (2) the process of interaction between organizations and environment; (3) the effectiveness of actors. Actors in the institutional and functional model of spatial development are companies-entities, reflecting the features of sectoral and industrial structure of the regional economy, as well as people living and working in the region. Organizations in the model are such legal entities that (1) regulate the actions of the participators of various socio-economic, industrial and environmental processes taking place in the socio-economic area of the territories; (2) regulate the actions of various parties involved and are immediately involved in these processes themselves. Institutional and functional development model is designed for territories of the Russian part of the Barents region.

Keywords: spatial development, Arctic, Barents-Euro region, modelling

INTRODUCTION

Analyzing the works on the issue we can find some works related both to general problems of modeling and works, that use the principles of institutional analysis. Review of the territorial development modeling showed that the problems of development modeling of the Arctic territories from the environmental position were researched by Johannesen et al. [1], Antonovskaya [2], Rudenko and Skripnuk [3].

Forecasting of socio-economic processes in the Arctic regions was researched by Zimmerbauer [4], Bishop [5] and Didenko [6]. With researching of the impact of changing factors on development of territories of the Barents Euro-Arctic region there were engaged papers by Grigoriev and Korotaev [7], Ivanova and Sakulina [8], Feoktistov, [9] (studying of the geophysical aspects), Rudenko [10] (studying of the socio-economic aspects).

SCIENTIFIC 3RD INTERNATIONAL MULTIDISCIPLINARY CONFERENCE SOCIAL SCIENCES AND ARTS

The research is built on the principles of the latest institutional analysis, developing the ideas that we find in traditional institutionalism. Traditional institutionalism as the doctrine originated in the late 19th century and was formed during a 20-30-ies of XX century. The authors applied the institutional and functional approach, which consists in the consideration of the object of study from a position of institutional environment. Modeling of territorial development of the Russian part of the Barents Euro-Arctic region is intended for analysis, forecasting and analyzing of the impact of changing factors on the specified indicators. We propose a model of institutional environment of the Russian part of the Barents Euro-Arctic region that characterizes the state of social, economic, industrial and environmental spheres of regional human activity, which increase the human development potential.

The Barents Euro-Arctic region includes the following administrative areas (Figure 1).



Fig. 1. Map of the administrative areas of the Barents Euro-Arctic region

Russia: Murmansk Oblast, Republic of Karelia, Arkhangelsk Oblast, Nenets Autonomous Okrug, Republic of Komi.

Norway: Finnmark, Troms, Nordland.

Sweden: Norrbotten, Västerbotten.

Finland: Lapland, Kajnuu, Oulu.

METHODOLOGY

The methodology of the functional and institutional approach to modeling includes the following aggregated stages.

A. The object of analysis is selected according to its function. The object of analysis is the socio-economic area of the Russian part of the Barents Euro-Arctic region from the standpoint of condition of the institutional environment.

B. The institutional environment is determined. The institutional environment is characterized by the condition of social, economic, industrial and environmental spheres of human activity in the region, that increase the potential for human development.

C. The indicators evaluating the institutional environment are substantiated. The elements of the institutional environment are the passive ones – laws, regulations, traditions and the active ones – organizations, actors.

D. The object of the analysis is presented in terms of levels of the institutional environment.

E. The levels of the institutional environment are presented as a model.

The considered spheres of human activity are: social, economic, industrial and ecological. The social sphere of human activity is a set of industries, businesses, social processes and social relations, functionally connected to each other. It represents the social reproduction infrastructure. The social sphere is characterized by the purchasing power of the population, the share of the population with income below the subsistence level, unemployment, the level of average per capita income.

The economic sphere of human activity is characterized by a modern state of investment and innovative development in the region and its prospects, creation of innovation, the ability of the employed people to create innovations.

The industrial sphere is characterized by of industry and business development in the region. It includes the set of production branches creating wealth. It also includes services and a large part of the scientific activities directly associated with the production of these goods.

The ecological sphere acts as an essential condition of human life in the system of various relationships – public, social, economic, productive. It is valued by the influence of production on environment. Maintenance of the ecological balance and ecological safety stipulates sustainable socio-economic development.

Institutionalism enables selecting of the institutional environment of the territories of the Russian part of the Barents Euro-Arctic region. The institutional environment is a combination of active and passive elements interacting in social, economic, industrial and ecological spheres of human activity in the region. The active elements in the institutional environment are organizations, actors. The passive elements in the institutional environment are laws, norms and traditions.

The institutional constraints lead to formation of certain organizations, that provide a framework for the interactions in the society (regulatory entities, usually governmental, international (and social) organizations controlling and regulating the operations of the formal institutions (the informal institutions are controlled less). In turn the organizations also have an impact on the process of changing of the institutional constraints. The organizations are created for attaining of the specified purposes because of the existing set of institutional constraints creates the opportunities for the relevant activities.

MODEL

The model of development of the Russian part of the Barents Euro-Arctic region on the basis of institutional and functional approach characterizes the condition of social, economic, industrial and environmental spheres of human activity in the region and describes the condition of the institutional environment. The model of territorial development of the Russian part of the Barents Euro-Arctic region includes four levels, each level has a system of 6 up to 8 equations. The model will be used (1) for the analysis and forecasting of the processes of human activity, (2) in the program-targeted management as an object of control.

In order to substantiate the variables and the axiomatics of the model the factors and conditions formation of the socio-economic space from the point of view of the condition of the institutional environment are analyzed. The institutional environment in

this model is a combination of active and passive elements interacting in social, economic, industrial and environmental spheres of human activity in the region, that increase the potential for human development.

As the factors one should consider innovative modernization of the economy, economic growth, national security in the water and on land of the region, the security and safety of the population, strengthening of the role of the Arctic in the economy of the Russian Federation.

The institutional environment of the region acts as the prerequisite for forming of an effective socio-economic space. The institutional environment provides for increasing of the potential for human development.

In order to create the axiomatics of the institutional and functional model of development of the territories of the Russian part of the Barents region the main conclusions and key findings of the analysis of the development of the Arctic regions represented in the works [6], [11], [12] are used, as well as the analysis of the implementation of the priority cooperation projects within the territories of the Barents Euro-Arctic region conducted in this article [13] and [14].

The model of the first level of the institutional environment – the industries and territories of the municipalities. It describes the process of interaction between the organizations and the actors.

(1) The result of interaction between organizations and actors is described an indicator of aggregate production volume Y_t^1 by the leading industrial sectors of the region: the volume of production of mining industry – y_t^{11} , of pulp and paper and wood processing industry - y_t^{12} , of fisheries and aquaculture companies - y_t^{13} , of shipbuilding industry - y_t^{14} :

$$Y_t^1 = \begin{Bmatrix} y_t^{11} = f\left(x_t^{111}, x_t^{112}, x_t^{113}, f\left(x_t^{114}\right), x_t^{115}, x_t^{116}\right) \\ y_t^{12} = f\left(x_t^{121}, x_t^{122}, x_t^{123}, f\left(x_t^{124}\right), x_t^{125}, x_t^{126}\right) \\ y_t^{13} = f\left(x_t^{131}, x_t^{132}, x_t^{133}, f\left(x_t^{134}\right), x_t^{135}, x_t^{136}\right) \\ y_t^{14} = f\left(x_t^{141}, x_t^{142}, x_t^{143}, f\left(x_t^{144}\right), x_t^{145}, x_t^{146}\right) \end{Bmatrix} \quad (1)$$

, where x^{111}, $x^{121}, x^{131}, x^{141}$ - the number of companies in the corresponding industry, x^{112}- the share of population employed in the industry, x^{113} - the investments to the corresponding industry, $f\left(x^{114}\right)$ - the level of consumption, x^{115} - material intensity in the relevant industry, x^{116}- capital intensity in the relevant industry.

The model of the second level of the institutional environment – the areas of institutional environment (social, economic, industrial and ecological) and regions. It describes the process of interaction between the organizations and the environment.

(2) The result of interaction between the organizations and the environment is determined by the indicator of per capita GRP Y_t^2 , that characterizes the condition of all the areas of human activity: the economic sphere - y_t^{21} , the condition of the

production sphere - y_t^{22} , the social sphere - y_t^{23} , the condition of the environmental sphere - y_t^{24} :

$$Y^2_{per\,capita\,GRP} = \begin{Bmatrix} y^{21} = f\left(x^{21}, x^{22}, x^{23}, x^{24}\right) \\ y^{22} = f\left(x^{22}, x^{25}, x^{26}, x^{27}\right) \\ y^{23} = f\left(x^{28}, x^{29}, f\left(x^{210}\right), f\left(x^{211}\right)\right) \\ y^{24} = f\left(x^{212}, f\left(x^{213}\right), x^{214}, x^{215}\right) \end{Bmatrix} \quad (2)$$

, where x^{21}– per capita income in the region, x^{22} – level of investments in the region, x^{23} – growth rate of labor productivity in the region, x^{24} – payments for the imported technologies, x^{25} – share of industrial production in the GRP, x^{26} – share of innovative products in the GRP, x^{27} – total volume of production shipped in the region, x^{28} – residential population of the region, x^{29} - HDI index, $f\left(x^{210}\right)$ – level of social security in the region, $f\left(x^{211}\right)$ – level of development of the infrastructural industries in the region, x^{212} – emissions of pollutants into the atmosphere from stationary sources, $f\left(x^{213}\right)$ – general ecological situation in the region, x^{214} – total sum of fines for polluting the environment, x^{215} – quantity of wastes of production and consumption.

The model of the third level of institutional environment - the development of the territory of the Russian regions of the Barents Euro-Arctic region. It describes the result of the interaction of the institutional environment and the actors, describing the effectiveness of the actors.

(3) The effectiveness of the actors is the result of interaction of the actors with the institutional environment and it can be described with an indicator Y_t^3 – development of the Russian territories of the Barents Euro-Arctic region: Y_t^{31}- air emissions from stationary sources, Y_t^{32} – HDI index, Y_t^{33} – reduction of forested territories in the region:

$$Y_t^3 = \begin{Bmatrix} y_t^{31} = f\left(x_t^{31}, x_t^{33}\right) \\ y_t^{32} = f\left(x_t^{32}, x_t^{34}, x_t^{35}\right) \\ y_t^{33} = f\left(x_t^{31}, x_t^{33}\right) \end{Bmatrix} \quad (3)$$

, where x_t^{31} – is per capita total volume of production shipped in the region, x_t^{32} – total per capita GRP, x_t^{33} - total per capita export volume, x_t^{34} - total per capita export of high-tech products, x_t^{35} – number of doctors per 10000 inhabitants.

The model of the fourth level of institutional environment – the connection of the territory of the Russian regions of the Barents Euro-Arctic region with the national economy. It describes the condition of the institutional environment of the Russian part of the Barents region.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY

(4) The condition of the institutional environment of the Russian part of the Barents region can be described with an indicator Y_t^4 – the connection of the territory with the national economy: Y_t^{41} – share of the regional GRP in the Russian GDP, Y_t^{42} – share of the region's exports in the total Russian exports, Y_t^{43} – share of high-tech products of the region in the total high-tech Russian output, Y_t^{44} – share of regional household consumption out of the total consumption of households in Russia:

$$Y_t^4 = \begin{Bmatrix} y_t^{41} = f\left(x_t^{41}, x_t^{42}, x_t^{43}, x_t^{44}, x_t^{411}, x_t^{412}, x_t^{414}\right) \\ y_t^{42} = f\left(x_t^{42}, x_t^{43}, x_t^{44}, x_t^{46}, x_t^{414}\right) \\ y_t^{43} = f\left(x_t^{44}, x_t^{45}, x_t^{47}, x_t^{48}, x_t^{49}, x_t^{410}\right) \\ y_t^{44} = f\left(x_t^{411}, x_t^{412}, x_t^{413}, x_t^{414}\right) \end{Bmatrix} \quad (4)$$

, where x_t^{41} – is the share of manufacturing in the GRP of the region, x_t^{42} – share of extractive industries the GRP of the region, x_t^{43} – share of fisheries in the GRP of the region, x_t^{44} - investments into the region, x_t^{45} – expenses on technological innovation, x_t^{46} - export quota of the region, x_t^{47} - payments for the imported technologies and services of a technical nature, x_t^{48} - share of the expenditure on innovations in % of the GRP, x_t^{49} - total personnel employed in research and development, x_t^{410} – share of organizations engaged in environmental innovation out of the total number of organizations that had innovations ready for implementation, x_t^{411} - share of transport and communications in the GRP of the region, x_t^{412} – share of the education in the regional GRP, x_t^{413} - per capita income of the population in the region, x_t^{414} - atmospheric emissions from stationary sources.

CONCLUSION

In the paper we present the principles of modeling of development of the territories of the Russian part of the Barents Euro-Arctic region on the basis of institutional and functional approach. The model describes the condition of the social, economic, industrial and environmental spheres of human activity in the region, describes the state of the institutional environment. The model of development of the Russian part of the Barents Euro-Arctic region includes four levels, each level is presented by a system of 6 up to 8 equations. The model will be used for the analysis and forecasting of the processes of human activity, as well in the program-targeted management as object of control.

The model considers the problems of development of Russian regions of the Barents Euro-Arctic region. Such issues include: (1) the heterogeneity of territorial development (Arkhangelsk, Kotlas, Plesetsk, Murmansk, Vorkuta, Usinsk, Sosnogorsk, Pechora, Ukhta, Inta, Syktyvkar, Vuktyl); (2) a disproportionate structure of the population (social migrants, indigenous small peoples of the North); (3) a high level of man-caused influence; (4) the vulnerability of the ecosystems at high latitudes (fish processing

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

industry); (5) reduction of the intact forest landscapes (large areas of forest of at least 50 thousand hectares, which are not prone to significant man-caused impacts).

The creation of a model of sustainable development of the territories with a purpose of preserving the ecological and biological balance in the region is proposed as a strategic priority of cooperation of the territories of the Barents Euro-Arctic region. Sustainable development of the regional institutional environment (social, economic, industrial and environmental) is conceptually based on the principles of the program-targeted management of development with conservation of forest territories, which are not prone to significant man-caused impacts.

ACKNOWLEDGEMENTS

The paper is based on research carried out with the financial support of the grant of the Russian Science Foundation (Project No. 14-38-00009, The program-targeted management of the Russian Arctic zone development). Peter the Great St. Petersburg Polytechnic University.

REFERENCES

[1] Johannesen E., Hoines A.S., Dolgov A.V., Fossheim M. Demersal Fish Assemblages and Spatial Diversity Patterns in the Arctic-Atlantic Transition Zone in the Barents Sea, PLOS ONE, vol. 7/issue 4, e34924, 2012.

[2] Antonovskaya G., Konechnaya Y., Kremenetskaya E., Asming V., Kværna T., Schweitzer J., Ringdal C. Enhanced Earthquake Monitoring in the European Arctic. Polar Science, vol. 9/issue 1, pp. 158-167, 2015.

[3] Rudenko D., Skripnuk D., Environmental Kuznets curve: the case of Arctic Russian regions, International Multidisciplinary Scientific GeoConference-SGEM. 16th International Multidisciplinary Scientific Geoconference (SGEM), Jun 30 – July 6, Albena, Bulgaria, vol. 3/issue 5, pp. 209-216, 2016.

[4] Zimmerbauer K. Constructing peripheral cross-border regions in planning: territory-network interplay in the Barents region, Environment and Planning A, vol. 46/issue 11, pp. 2718-2734, 2014.

[5] Bishop M. New State Spaces and Contested Territories: A Critical Analysis of Joint Regional Planning Panels, Urban Policy and Research, vol. 32/issue 2, pp. 185-201, 2014.

[6] Didenko N.I., Skripnuk D.F. The modeling of sustainable economic development of the Russian Arctic regions with the system of econometric equations, The strategic priorities of the development of the Russian Arctic: collection of scientific papers, edited by V.V.Ivanter, academician of the RAS. – Moscow: Nauka, pp. 63-78, 2014.

[7] Grigoriev V.F., Korotaev S.M., Kruglyakov M.S. The results of marine electromagnetic sounding with a high-power remote source in the Kola Bay in the Barents Sea, Izvestiya – Physics of the Solid Earth, vol. 49/issue 3, pp. 373-383, 2013.

[8] Ivanova N.M., Sakulina T.S., Belyaev I.V. Depth model of the Barents and Kara seas according to geophysical surveys results, 33rd International Geological Congress (IGC), Aug. 06-14, Oslo, Norway, 2008.

SCIENTIFIC CONFERENCE SGEM 2016 INTERNATIONAL MULTIDISCIPLINARY SCIENCES AND ARTS

[9] Feoktistov V.M., Kharin V.N., Spector E.N. Studying Precipitation Chemistry by Multivariate Analysis Based on Data of Rural Stations in Russian Barents Region. Water resources, vol. 41/issue 4, pp. 421-430, 2014.

[10] Rudenko D.Y. A comprehensive approach to the study of poverty in the region, Regional Research of Russia, vol. 4/issue 3, pp. 143-151, 2014.

[11] Romashkina G.F. Modernization processes in the regions of Urals federal district, Sotsiologicheskie Issledovaniya, issue 1, pp. 19-+, 2015.

[12] Rudenko D. The population dynamics in the Russian Arctic, M.I.R. (Modernization. Innovation. Research), vol. 6/issue 7, pp. 51-57, 2015. DOI: 10.18184/2079-4665.2015.6.4.51.57

[13] Komkov N.I. Technological prognostication and development of the economy, Herald of the Russian Academy of sciences, vol. 74/issue 6, pp. 570-578, 2004.

[14] Rudenko D.Yu. A hierarchical structure of socio-economic development goal in a region, Modern problems of science and education, issue 6, doi: 10.17513/spno.2013.5, 2013, http://www.science-education.ru/ru/article/view?id=10281

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

NON-TECHNOLOGICAL INNOVATIONS AND THEIR IMPACT ON THE SOCIO-ECONOMIC DEVELOPMENT OF RUSSIA

Prof. Dr. Yulia Vertakova[1]

Assoc. Prof. PhD Olga Grechenyuk[2]

Assoc. Prof. PhD Anton Grechenyuk[3]

[1] South-West State University, Kursk, **Russian Federation**
[2] South-West State University, Kursk, **Russian Federation**
[3] Kursk Academy of State and Municipal Service, Kursk, **Russian Federation**

ABSTRACT

The peculiarity of modern scientific research of innovative activity in Russia is focusing on the development of technological innovation. However, in recent years there has been a steady trend of increasing the role of non-technological innovation in the successful functioning of economic entities of the economy, which include marketing and organizational innovation.

Objectives of the study: analysis of the innovative activity of total, technological and non-technological innovations in Russia, carrying out international comparisons in the field of research, evaluation of the impact of the level of development of non-technological innovation on the socio-economic development of the state and the dynamics of GDP.

Methods. In this paper we used a variety of theoretical and empirical research methods, including a literature review, economic and mathematical, economic and statistical analysis methods.

Conclusions. A result of research we evaluated the level of non-technological innovative development of modern Russia, we have identified the most innovative development spheres of non-technological innovation, and have assessed their impact on the dynamics of GDP. The study will determine the future strategic orientation of innovative development of the state in the field of non-technological innovation.

Keywords: innovation, innovative activity, non-technological innovation.

INTRODUCTION

The growth of technological innovation activity is one of the key indicators of innovation development of Russia [1], [3]. But obviously success often depends on the accompanying them non-technological innovation [5]. Therefore, one of the key goals for the innovative development of Russia should be the development of non-technological innovation. At the present stage of economic development we observe the close relationship between technological and non-technological innovation [6]. The process of the commercialization of technological product innovation often requires the use of innovative technologies in the field of marketing [2], [7]. Also application of each new advanced production technology must be accompanied by appropriate organizational changes in the innovation sphere [4]. Issues of innovation development

of economies are widely covered in the works of such well-known foreign scientists as Drucker (1985), Vodachek (1989), Bruce (2010) [13], Wahren (2004) [15] et al. Among domestic scientists involved in the study issues of evaluation of innovative development, we can highlight the work of Zavlin (1998), Vasilenko (2003), Yakovets, (2003), Prigojin (1989), Molchanov (1994), Lapin (2008), Baburin (2010) [12], Kiselev (2010) [14], Vertakova, Plotnikov (2015), Grechenyuk, Grechenyuk (2014), Poletaev V.E. (2016), Rychkova N.V. (2016) [7], Fonotov A.G. (2014) [8] et al.

MATERIALS AND METHODS

The main materials that we used in the study were the official data of Federal State Statistics Service (Rosstat) and official data of Eurostat in the field of innovation activities of the countries. In our study, we have used various theoretical and empirical research methods, different economic and statistical methods, the horizontal and vertical methods of analysis of technological and non-technological innovation activities of the economy of the Russian economy, the method of comparative analysis of innovation activity countries of Europe with Russia, etc [10] [11].

RESULTS

Analysis of innovative activity in Russia shows that the majority of innovative companies that carry out technological innovation (process and product) are also actively implementing and non-technological innovation (marketing and organizational) [9]. Table 1 shows the dynamics of the level of innovation activity of Russian companies in the field of technological and non-technological (organizational and marketing) innovations.

Table 1 - Innovation activity of Russian companies in the field of technological and non-technological innovation, %

Indicators	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total innovation activity	9,9	10,0	9,4	9,3	9,5	10,4	10,3	10,1	9,9
Technological innovation activity	6,4	9,4	9,6	9,4	7,9	8,9	9,1	8,9	8,8
Organizational innovation activity	3,2	3,5	3,5	3,4	3,2	3,3	3,0	2,9	2,8
Marketing innovation activity	2,3	2,5	2,6	2,4	2,2	2,3	1,9	1,9	1,7

Source: compiled by the authors using the official data of Rosstat - http://gsk.ru/

Table 1 shows that in general the innovative activity of Russian companies is not high, and it varies from 9.3% to 10.4% for the period. The share of organizations implementing various kinds of technological innovation in 2006 was only 6.4%. In 2007-2009, we noted its growth to 9.6%. Then the figure decreased to 7.8% in 2010. In 2011, we marked its growth to 8.9%, and during 2011-2014 the total figure of innovation activity varied around 9%. The level of innovation activity in the field of organizational innovation was about 3% in 2006-2014 years. In 2006-2008, we observed its growth from 3.2% to 3.5% .After this figure declined steadily and was 2.8% in 2014. The innovative activity of Russian companies in the field of marketing innovations has been even lower. Its value is not reached even 3% during the period. The trend observed here is the same as in the field of organizational innovation. In

2006-2008, the figure increased from 2.3% to 2.6%, and in 2009-2014 it has decreased steadily, and amounted in 2014 1.7%.

Table 2 - International comparison of total, technological and non-technological innovation activity in 2013, %

Country	Total innovation activity	Technological innovation activity	Organizational innovation activity	Marketing innovation activity
Russia	10,1	8,9	2,9	1,9
Germany	66,9	55,0	32,2	34,4
Luxembourg	66,1	48,5	46,8	32,4
Ireland	58,7	42,3	21,8	35,7
Italy	56,1	41,5	33,5	31,0
Sweden	55,9	45,2	25,3	30,4
Belgium	55,6	46,5	29,3	21,9
Portugal	54,6	41,3	32,8	32,8
Austria	54,4	39,3	36,4	29,5
France	53,4	36,7	34,2	25,4
Finland	52,6	44,6	29,7	26,5
Greece	52,3	34,3	30,2	36,8
Netherlands	51,4	44,5	27,3	23,2
Denmark	51,1	38,1	32,2	29,4
Malta	51,1	35,9	34,7	32,6
United Kingdom	50,3	34,0	34,2	16,8
Turkey	48,5	27,0	31,7	34,7
Estonia	47,6	38,4	21,7	21,9
Serbia	47,5	31,2	32,6	32,2
Slovenia	46,5	32,7	26,3	28,5
Norway	44,7	31,2	21,7	23,2
Czech Republic	43,9	35,6	20,5	22,4
Cyprus	42,1	29,9	26,2	29,5
Croatia	37,9	25,0	22,9	23,5
Slovakia	34,0	19,7	18,6	19,3
Spain	33,6	23,2	19,4	13,2
Lithuania	32,9	18,9	17,5	19,3
Hungary	32,5	16,4	16,5	19,7
Latvia	30,4	19,5	16,9	16,5
Bulgaria	27,4	16,9	12,4	14,2
Poland	23	16,1	10,4	10,6
Romania	20,7	6,3	14,1	13,8

Source: compiled by the authors using the official data of Eurostat - http://ec.europa.eu/eurostat

Figure 2 shows that the majority of European countries in 2013 have a higher level of innovation activity than in Russia (10%). The leader by this indicator is Germany, where 70% of companies carry out various types of innovation (technological and non-technological). Luxembourg takes the second place (66%). Ireland takes the third position (59%). The share of innovation active enterprises in Italy, Sweden, Belgium, Portugal, Austria, France, Finland, Greece, the Netherlands, Denmark, Malta and the UK was from 50 to 56% in 2013. In Turkey, Estonia, Serbia, Slovenia, Norway, the Czech Republic and Cyprus, the overall innovation activity was from 40 to 50%. The total level of innovative activity in Croatia, Slovakia, Spain, Lithuania, Hungary and Latvia was from 30 to 40% in 2013. In Bulgaria, Poland and Romania it was from 21 to 27%. In terms of technological innovation activity among the countries studied,

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016 INTERNATIONAL MULTIDISCIPLINARY

Germany is also a leader, where 55% of companies carry out technological innovation. Luxembourg is also on the second place (48.5%). The third position is occupied by Belgium (46.5%). In Sweden, Finland, the Netherlands, Ireland, Italy and Portugal, the share of organizations implementing technological innovation has been from 41 to 45%. In Austria, Estonia, Denmark, France, Malta, the Czech Republic, Greece, Great Britain, Slovenia, Norway, Serbia the figure was from 31 to 39%. In Cyprus, Turkey, Croatia, Spain, it was from 23 to 30%. In Slovakia, Latvia, Lithuania, Bulgaria, Hungary, Poland, it was from 16 to 20%. In Russia it was 8.9%, in Romania it was 6%.

Highest innovative activity in the organizational sphere was in Luxembourg (47%), in second place was Austria (36%) and in third place was Malta (34.7%). In France and the UK this indicator was slightly less (34%). In Italy, Portugal, Serbia, Denmark, Germany, Turkey and Greece it was 30-33%. In Belgium, the Netherlands, Slovenia, Cyprus, Sweden, Croatia, Ireland, Estonia, Norway, the Czech Republic, the level of innovative activity in the field of organizational innovation was from 20 to 29%. In other countries: Spain, Slovakia, Lithuania, Latvia, Hungary, Romania, Bulgaria, Poland, it was from 10 to 20%. In Russia it was only 3%. In terms of innovation activity in the field of marketing Greece was the leader (37%), followed by Ireland (36%), in third place was Turkey (35%). In the group with values above the average there was also Germany, Portugal, Malta, Luxembourg, Serbia, Italy and Sweden (30-34%). In Cyprus, Austria, Denmark, Slovenia, Finland, France, Croatia, the Netherlands, Norway, the Czech Republic, Belgium, Estonia, this figure was between 22% and 30%. In the remaining countries the level of innovative activity in the field of marketing was below average: in Hungary, Lithuania, Slovakia, Great Britain, Latvia, Bulgaria, Romania, Spain, Poland it was from 10% to 20%. In Russia it was only 2%.

At the beginning of this article we have assumed that the innovative development of the country as a whole and its separate areas has an impact on the socio-economic situation. We'll check it by applying the correlation analysis between indicators of innovative activity of researched countries and the amount of GDP and GDP per capita, as this is the most important macroeconomic indicators of the state of the economy (Table 3).

Table 3 - The correlation coefficients between indicators of innovative activity, GDP and GDP per capita in researched countries

Indicators of innovation activity in researched countries	GDP	GDP per capita
Total innovation activity	0,66076	0,584744
Technological innovation activity	0,676541	0,598709
Organizational innovation activity	0,583712	0,516559
Marketing innovation activity	0,372642	0,329772

Source: Author's calculations

Table 3 shows that the innovative activity of organizations has an impact on the average gross domestic product and gross domestic product per capita. And the technological innovation activity has a biggest impact (0.68 and 0.60, respectively). The impact of the overall technological activity is 0.66 and 0.58. The organizational technological activity has less impact (0.58 and 0.52). The level of marketing innovations has a weak impact on GDP and GDP per capita (only 0.37 and 0.33).

Next, we will consider the dynamics of innovation activity (technological and non-technological) among Russian organizations in two main sectors: industry (mining, manufacturing, production and distribution of electricity, gas and water) and communication (activities related to the use of computer and information technologies) (table 4).

Table 4 – The innovation activity (technological and non-technological) among Russian organizations by main types of economic activity

Indicators	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mining, manufacturing, production and distribution of electricity, gas and water									
Technological innovation activity	9,4	9,4	9,6	10,3	9,3	9,6	9,9	9,7	9,7
Organizational innovation activity	3,2	3,5	3,5	3,7	3,4	3,5	3,2	3,1	3,0
Marketing innovation activity	2,3	2,5	2,6	2,4	2,5	2,5	2,2	2,1	2,0
Communication, activities related to the use of computer and information technologies									
Technological innovation activity	15,8	13,7	12,9	12,0	11,9	7,8	8,0	7,7	7,6
Organizational innovation activity	5,9	5,9	5,7	5,7	2,8	3,0	2,6	2,5	2,7
Marketing innovation activity	5,6	5,7	6,2	6,4	1,6	1,9	1,6	1,5	1,3

Source: compiled by the authors using the official data of Rosstat - http://gsk.ru/

Table 4 shows that both technological and non-technological innovation activities of organizations in the field of communications and activities related to the use of computers and information technology is much higher in 2006-2010 than in industry. However, we have identified a steady trend of decline. Technological innovation activity in the field of communications was 15.8% in 2006, and during the study period (2006-2014) it has decreased to 7.6%. Technological innovation activity in the industry in the study period has ranged from 9.4 to 10.3%. And it was 9.7% in 2014. Organizational innovation activity in the field of communication in 2006-2009 was also higher than the industry and accounted for almost 6%. However, it decreased in the period more than doubled and amounted to 2.7% in 2014. Organizational innovation activity in industry in 2006-2009 increased slightly (from 3.2% to 3.7%), and decreased to 3% in the remaining years. Marketing innovation activity in the field of communication has increased from 5.6% to 6.4% in 2006-2009, but then it declined sharply to 1.3% in 2014. Marketing innovative activity in the industry ranged from 2.3% to 2.6% in 2006-2010, and then it decreased to 2%.

To assess the impact of innovation activity (total, technological and non-technological) on the socio-economic development of Russia, we have applied correlation analysis method. The period of study was 9 years (2006 to 2014). As the main socio-economic indicators we have selected: Gross domestic product - the total; Gross domestic product per capita; Volume of shipped goods, works and services; Consolidated budget revenues; Balanced financial result (profit minus loss) in the economy. The results of correlation analysis we have presented in Table 5. As a result of the correlation analysis, we found that the total innovation activity of Russian companies has an impact on all of the selected indicators of socio-economic development of Russia.

Table 5 - Correlation coefficients between indicators of innovative activity of Russian organizations and major socio-economic indicators

Indicators	GDP	GDP per capita	Volume of shipped goods, works and services	Consolidated budget revenues	Balanced financial result
Total innovation activity	0,447939	0,447938	0,479929	0,504844	0,770807
Technological innovation activity	0,324157	0,3302613	-0,81374	0,337238	-0,153173
Organizational innovation activity	-0,79435	-0,787235	-0,81374	-0,786425	-0,28587
Marketing innovation activity	-0,839083	-0,83228	-0,85393	-0,829829	-0,318301

Source: Author's calculations

The correlation coefficient between the total innovation activity and GDP was 0.45; it is characterized by a low level of impact total innovation activity on GDP. The correlation coefficient between the total innovation activity and GDP per capita also shows a low degree of impact (0.45). A bit more there is a dependency between total innovation activity and the volume of shipped goods, works and services (0.47) and revenues of the consolidated budget (0.50). The high degree of impact was found between the total innovation activity and the Balanced financial result (profit minus loss) in the economy in the economy (0.77). Technological innovation activity has a low impact on the dynamics of GDP (0.32), a bit higher it has an impact on the per capita GDP (0.33). The negative coefficient of correlation was obtained between the technological innovation activity and the volume of shipped goods, works, services rendered (-0.81). This is due to opposite trends in the dynamics of these indicators. The level of technological innovation activity in dynamics for 2006-2014 years decreased (by more than 2 times), and the volume of shipped goods, works, services constantly increased (2.6 times). The coefficient of correlation between technological innovation activity and the consolidated budget revenues is 0.34 (low impact). The coefficient of correlation between technological innovation activity and the balanced financial result in the economy is negative (-0.15), which is also due to the opposite trends. The correlation coefficients between organizational innovation activity and indicators of socio-economic development have negative values, which is also caused by the opposite trends. The level of organizational innovation activity over the study period declined by more than 2 times, and the socio-economic development indicators increased by about 2-2,5 times. The correlation coefficients between innovative marketing activity and indicators of socio-economic development also have negative values, resulting in a significant reduction of marketing activities (more than 4 times for 9 years), while there was the steady growth of social and economic indicators.

CONCLUSION

As a result of the study, we concluded that the innovation activity among Russian companies was low over the study period. We also found unfavorable decreasing trend of innovative activity. Moreover, we have identified a greater reduction in the sphere of non-technological (organizational and marketing) innovations. In general, innovation activity among Russian companies is not high (9-10%). The level of technological innovation activity varied in the years 2006-2014 from 6.4% to 9.6%. The level of

organizational innovation was much smaller and did not exceed 3.5% over the study period. The level of marketing innovations was even lower for the period. Its value has not reached 3% during the period, and it reached only 1.7% in 2014.

International comparisons of general, technological and non-technological innovation activities in 2013 showed that the majority of European countries in 2013 have a higher level of innovation activity than in Russia (10%). The leader by this indicator is Germany, where 70% of companies carry out various types of innovation (technological and non-technological). In second place there is Luxembourg (66%). In third place is Ireland (58.7%). 40% of studied countries show the level of total innovation activities from 50 to 60%. Another 22% of countries have shown the level of the indicator from 40 to 50%. By the level of technological innovation activity among studied countries Germany is also the leader (55%). In second place also there is Luxembourg (48.5%). The third position is occupied by Belgium (46.5%). 75% of studied countries show the level of technological innovation activities from 31 to 45%. In Russia it was 8.9%. Luxembourg is the most innovative activity in the sphere of organizational (47%), in second place there is Austria (36%), in third place there is Malta (34.7%). 60% of studied countries show the level of organizational innovation activities from 20 to 34%. In Russia, it was only 3%. By the level of innovative activity in the field of marketing Greece Is leader (37%), Ireland has the second place (36%), Turkey is on the third place (35%). Over 60% of studied countries show the level of marketing innovation activities from 22 to 34%. 30% of countries have a level of innovative activity in the field of marketing below average (10-20%). In Russia, it was only 2%.

Correlation analysis between indicators of innovation activities the studied countries, with the value of their GDP and per capita GDP showed an average exposure. And the technological innovation activity has a biggest impact of them (0.68 and 0.60, respectively). The impact of the technological activity is 0.66 and 0.58. The organizational technological activity has even less impact (0.58 and 0.52). The level of marketing innovations has a weak impact on GDP and GDP per capita (only 0.37 and 0.33). Technological and non-technological innovation activity of companies in the communications sector in 2006-2010 is significantly higher than in industry. However, we have found a steady trend of decline from 15.8% to 7.6%. Technological innovation activity in the industry for the study period has ranged from 9.4 to 10.3%. And it was 9.7% in 2014. Organizational innovation activity in the field of communication in 2006-2009 was also higher than the industry and accounted for almost 6%. However, it decreased during the period more than doubled and amounted to 2.7% in 2014. Organizational innovation activity in industry in 2006-2009 increased slightly (from 3.2% to 3.7%), and decreased to 3% in the remaining years. Marketing innovation activity in the field of communication has increased from 5.6% to 6.4% in 2006-2009, but then it declined sharply to 1.3% in 2014. Marketing innovative activity in the industry ranged from 2.3% to 2.6% in 2006-2010, and then decreased to 2%.

As a result of the correlation analysis, we found that the overall innovation activity of Russian companies has an impact on all of the selected indicators of socio-economic development of Russia. High impact was found between total innovation activity and the balanced financial result in the economy (0.77). Technological innovation activity has a low impact on the dynamics of GDP and GDP per capita. The negative coefficient of correlation was obtained between the technological innovation activity and the volume of shipped goods, works and services. This is due to opposite trends in the

dynamics of these indicators. The coefficient of correlation between technological innovation activity and revenues of the consolidated budget shows a low level of impact. The correlation coefficients between organizational innovation activity and indicators of socio-economic development, as well as between the marketing of innovative activity and indicators of socio-economic development have negative values, which is also caused by opposing trends.

ACKNOWLEDGEMENTS

The study was performed under the grant of the President of the Russian Federation for state support of leading scientific schools number Scientific School-9726.2016.6 "The implementation of state economic policy through the development of tools for strategic and indicative planning".

REFERENCES

[1] Plotnikov V. & Vertakova Yu. Sustainable Development of Spatially Distributed Socio-Economic System: the Experience of Russia, 26th International Business Information Management Association Conference, Spain, 2015, pp. 3224-3230.
[2] Vertakova Yu. & Trusova N. Marketing functions to ensure better investment attractiveness of a territory, International Scientific Conference on Marketing Identity: Explosion of Innovations, Slovakia, 2014, pp. 267-277.
[3] Grechenyuk O.N. & Grechenyuk A.V. Assessment of the level and dynamics of innovative development of the Russian Federation on indicators of characterizing the performance of individual blocks of the innovative process, Bulletin of the Southwestern State University. Series: Economy. Sociology. Management. Vol. 2, pp.9-13, 2014.
[4] Mixed modes of innovation, in OECD Science, Technology and Industry Scoreboard 2011, OECD Publishing, 2011.
[5] Non-technological innovation, in OECD Science, Technology and Industry Scoreboard 2009, OECD Publishing, 2009.
[6] Poletaev V.E. State and Business in Russia: innovations and prospects, INFRA-M, Moscow, 2016.
[7] Rychkova N.V. Marketing innovation, KnoRus, Moscow, 2016.
[8] Fonotov A.G. Russia: Innovation and Development Monograph, Binom. Knowledge Laboratory M., 2014.
[9] Gorodnikova N. & Gokhberg L. & Ditkovskiy K. Indicators of Innovation in the Russian Federation: 2015: Data Book, National Research University Higher School of Economics, Moscow: HSE, 2015.
[10] Russian Statistical Yearbook. 2015: Stat.sb., Rosstat. Moscow, 2015.
[11] Russia and countries of the world: 2014: Stat.sb., Rosstat. Moscow, 2015. - 382 c.
[12] Baburin V.L. The innovation cycle in the Russian economy, Moscow, URSS, Lenand, pp. 216, 2010.
[13] Bruce E. & Burchell D. Innovation, Moscow, Business and Service, pp.284, 2010.
[14] Kiselev V.N. Comparative analysis of innovative activity of the Russian Federation. Innovative Economy, Vol. 4, 2010.
[15] Wahren H-K. Ergfolksfactor innovation. Ideen systematish generieren bewerten und ymsetyen, Springer / H-K. Wahren - VerlagBerlin Heidelberg, pp. 283, 2004.

ORGANIZATION OF INNOVATIVE SYSTEMS IN GLOBAL ECONOMY

Prof. Dr. Elena L. Andreeva[1,2]

Victoriia V. Zakharova[1,3]

Cand. Yuliya G. Myslyakova[1,4]

Cand. Pavel L. Glukhikh[1,5]

Cand. Artem V. Ratner[1]

[1] Institute of economics of the Ural branch of the Russian academy of sciences, **Russia**
[2] Urals state university of economics, **Russia**
[3] Ural territorial administration of Federal agency of scientific organizations of Russia, **Russia**
[4] Ural federal university named after the first President of Russia B.N. Yeltsin, **Russia**
[5] Ural state pedagogical university, **Russia**

ABSTRACT

It is widely accepted that knowledge has always played an important role in the history of humanity, but the value has risen dramatically in the modern world. Consequently, authorities in different countries are facing the issue of improving the competitiveness of the country for integration into the system of world economic relations as a competitive partner and increasing the innovation component in its economic development. The aim of this study was to prove the existence of different levels of national innovation systems: from global to regional. The integral index has been developed that analyses the place of the country in the global innovation system. The results of our future work could be used in decision making process at the governmental level.

Keywords: innovations, innovation system, global innovation system, macro-regional innovation system.

INTRODUCTION

Knowledge has always played an important role in the life of humankind. Technological development influences socio-economic development and as a result – all spheres of national development including demographical [3, p. 39] and socio-labour sphere [2, p. 91]. But the importance of knowledge has grown extremely in the modern world. First of all this happens due to the world's movement into a new development phase based on the knowledge-based economy [8]. More and more countries are making efforts to elaborate a long-term policy in the areas of scientific, technological and engineering development. Improving the competitiveness of modern Russia for integration into the system of world economic relations in a competitive partner status is impossible without increasing the innovation component in its economic development [10]. And, conversely, stable links among countries' groups are important, because they create multiplicative effect of common policy in innovation and scientific-technological activity, by strengthening the effect of the measures undertaking on national and

regional levels [9]. This is evidently not a new topic – even a brief overview of the existing term «innovation» has shown a variety of terminology and approaches being used by Russian and foreign scientists since the second half of the XX century. One of the first people to define innovation was Joseph Alois Schumpeter, who wrote in his work «The theory of economic development» that innovation is a change for the purpose of implementation and use of new types of consumer products, new productive tools, transports, markets and forms of organization in the industry. The significance of this issue is evidenced by a great variety of approaches: in the field of Russian and foreign economy, different definitions of «innovation» can be found. In the development of various aspects of the innovation theory were involved B. Twiss, G. Mensch, V.G. Medynskiy, L.S. Blyakhman, N.D. Kondratiev, A.I. Prigogine, S.Y. Glazyev, Y. Yakovets, K. Freeman, E.G. Yakovenko, B. Santo, F. Valenta, E. Rogers, E.A. Utkin, R.A. Fatkhutdinov and other scientists. According to the Norwegian economist K. Holt, at the early 80s there were more than 100 definitions of «innovation» and this concept has different meanings while considering «innovation» as a change, process or result.

In the present paper, «innovation» will be defined in terms of modern Russian legislation as a new or significantly improved product (goods and services) or process, a new sales method, or a new organizational method in business practices, workplace organization or external relations [1].

Another serious issue is that innovative development of economy depends on how effectively all the participants interact with each other within a single system from the stage of the creation of innovations and new knowledge to their usage. The state support of innovation activity – a set of measures taken by the authorities of the Russian Federation, public authorities and public authorities of Russian Federation subjects in accordance with Russian legislation and the legislation of the Russian Federation subjects in order to create the necessary legal, economic and organizational conditions as well as incentives for businesses and individuals persons engaged in innovative activities.

The interaction of participants may be comprised of collaborative research, exchange of information and employees, joint patenting, collective purchasing of equipment and other activities, including the establishment of common multidisciplinary laboratories. The variety of types and methods of interaction of participants in the innovation process determines the character of national innovation system (NIS) [6].

The concept of NIS forming appeared in the 80s of XX century (B. Lundvall, K. Freeman, R. Nelson) and now is widespread and developed in the EU, the USA, Japan, etc. According to the definition provided by K. Freeman, NIS is a network of private and public institutions and organizations, which activities and interactions lead to the appearance, import, modification and dissemination new of technologies [4]. NIS can be considered as a set of interrelated scientific, technical, industrial, infrastructural subsystems necessary and sufficient for the innovative development of the country and ensuring its economic security.

It is necessary here to clarify exactly that the concept of innovation systems is applicable not only to the national level of the economy.

The hierarchy of territorially determined innovation systems is defined by K. Freeman as following: continental, national (intrastate) and subnational (regional, as the region can act cities, urban areas, groups of countries and parts of countries).

Cooperation makes it possible to distribute costs and risks of innovation and to produce new knowledge and information. Rates of trade growth in high technology products, smart «know-how», the emergence of new «players» in the innovation arena, strengthening trend towards a global research strategy for the development of technological capacity, opening research centers progressively form a global innovation system [5]. The concepts of «global innovation system», «supranational innovation system» and «macro-regional innovation system» appear according to the processes of internationalization and globalization.

Global Innovation System (GIS) as the main actors brings together a large number of major multinational companies, which are the most important structural units of the new economy: the well-known global brands, ranging from computer science, electronics and information and communication industry (Microsoft, Intel, Oracle, HP, and others), the aviation industry (Aerobus, Boing), the automotive industry and ending with drug companies, food products, perfumes, etc. Global innovation system is currently at the stage of forming. The growing internationalization of research and innovation activities in the world speeds up this process. The main subjects of the emerging global innovative system combines the national innovation systems and the largest TNCs that are major structural units of the new economy based on knowledge [5]. We suppose, the elements of the global innovation infrastructure are the macro-regional and national innovation system, international foundations and associations, international organizations, leading universities and technopark structures, multinational companies.

In the macro-regional context stable relations between groups of countries in a historical and geographical region are extremely important (set of countries that are characterized by common environmental conditions, physical and economic-geographical location, economic activity, history and culture of peoples, as well as the proximity of the level of socio-economic development).

Summing, we suggest the following hierarchical typology of innovation systems:

- global innovation system;
- macro-regional innovation system;
- national innovation system;
- regional innovation system.

The processes of globalization based on the acceleration of innovation processes have increased the proportion of innovation in the global gross domestic product; have increased their importance in the global technological development. The Russian Federation carries out the task to develop a program of innovative development to take place in the emerging global innovation system and the global economy. Formation not only national, but also macro-regional innovation system within the EAEU, created for the purpose of comprehensive modernization, co-operation and competitiveness of national economies and conditions for sustainable development in order to improve the

living standards of the Member States, can play the role of a multiplier, largely increasing the efficiency of actions at national and regional levels.

For the best analysis of the current situation foreign and domestic scientists and experts developed several indicators that reflect the state of scientific and technical and innovation development of the country. The most common are the so-called composite indexes representing a weighted aggregate indicators based on a range of parameters, selected depending on the purposes and objectives of the study. Among the most commonly used by scientists, government officials and the business community are the fallowing integral indices (integrated indicators), characterizing the level of development of an economy based on knowledge: Global Innovation Index (GII), Networked Readiness Index (NRI), Knowledge Economy Index (KEI), The Global Competitiveness Index (GCI).

METHODOLOGY

In this section our author's innovative development index (IDI), calculated based on GII, is described, formed on the basis of GII for the purposes of investigation to analyze the level of innovation development of EAEU member states.

The Global Innovation Index (GII) 2015 covers 141 economies around the world and uses 79 indicators across a range of themes and three types of data: composite indicators (19 indicators), survey questions from the World Economic Forum's Executive Opinion Survey (5 indicators) and the remaining 55 indicators are all hard data series [7].

The number of indicators analyzed in the calculation of the GII, for the purposes of our study is large, moreover in our opinion a part of parameters are only indirectly related to the level of innovation development of the country and can distort the results of the ranking. These indicators include, for example, the number of edits to Wikipedia articles on the site or the number of videos uploaded on Youtube. The variables, estimated using the survey results include: intensity of local competition, university/industry research collaboration, state of cluster development, ICTs & business model creation, ICTs & organizational model creation.

Index IDI calculated on the basis of a GII as the sum of the values of parameters P1-P11 for each country, transferred to a ten-point scale. Indicators P1-P11 selected from 79 selected parameters of GII so that each indicator corresponds to the target indicator for Innovation Strategy of the Russian Federation for the period up to 2020 (approved by the RF Government Decree of December 8, 2011 № 2227-p). Corresponding indicators are presented in the table 1.

Table 1. List of Indicators

Indicator	Global innovation index	Target indicator for Innovation Strategy of the Russian Federation for the period up to 2020
P1	Expenditure on education, % GDP	Domestic spending on education as a percentage of gross domestic product
P2	Tertiary enrolment, % gross	The proportion of students in higher institutions in the general population
P3	Gross expenditure on R&D, GDP	Gross domestic expenditure on R&D as a percentage of gross domestic product

P4	QS university ranking, average score top 3	The number of universities that are among the top 200 universities, according to the world ranking of universities (Quacquarelli Symonds World University Rankings)
P5	ICT access	Position of the Russian Federation in the international ranking on the index of development of information technologies
P6	Patient families 3+ offices/bn PPP$ GDP	The number of triad patent families (patents registered annually by Russian individuals and legal entities in the patent offices of the EPO, the USPTO and the JPO)
P7	High-tech imports less re-imports, % total trade	The balance of export and import of technology
P8	Domestic resident patent app/bn PPP$ GDP	Inventive activity Coefficient (the number of domestic patent applications for inventions filed in Russia, based on the 10000 people in population)
P9	Scientific & technical articles/ bn PPP$ GDP	Russia's share in the global amount of publications in scientific journals indexed in the database «Web of Science»
P10	Citable documents H index	The number of citations per publication of Russian researchers in scientific journals indexed in the database «Web of Science»
P11	High-tech exports less re-exports, % total trade	The share of export of Russian high-tech products in the total world exports of high technology products

RESULTS AND DISCUSSION

IDI was calculated for the 46 countries (Russia, Belarus, Kazakhstan, the countries members of the EU, NAFTA, ASEAN and China, Japan and India). The results are shown in Table 2, where countries are arranged in descending order of GII and IDI.

Table 2. Rating Positions of the Countries

Rating position	GII	IDI	Rating position	GII	ИИР
1	Switzerland	Japan	24	Italy	Malta
2	United Kingdom	USA	25	Malaysia	Greece
3	Sweden	Sweden	26	Republic of Cyprus	Poland
4	Netherlands	Denmark	27	Hungary	Thailand
5	USA	Finland	28	Slovakia	Russia
6	Finland	Germany	29	Lithuania	Mexico
7	Singapore	Netherlands	30	Latvia	Vietnam
8	Ireland	United Kingdom	31	Bulgaria	Slovakia
9	Luxembourg	China	32	Croatia	Lithuania

10	Denmark	France		33	Greece	Croatia
11	Germany	Belgium		34	Poland	Byelorussia
12	Canada	Singapore		35	Russia	Rep. Cyprus
13	Austria	Austria		36	Vietnam	Latvia
14	Japan	Canada		37	Byelorussia	Luxembourg
15	France	Czech Republic		38	Romania	Romania
16	Estonia	Malaysia		39	Thailand	Bulgaria
17	Czech Republic	Ireland		40	Mexico	India
18	Belgium	Slovenia		41	India	Kazakhstan
19	Malta	Estonia		42	Kazakhstan	Indonesia
20	Spain	Spain		43	Philippines	Brunei
21	Slovenia	Italy		44	Cambodia	Philippines
22	China	Hungary		45	Indonesia	Cambodia
23	Portugal	Portugal		46	Myanmar	Myanmar

According to the GII, Russia, Belarus and Kazakhstan move into the 35th and 37th and 42 h place respectively. According to IDI, 28th, 34th and 41th. The most developed innovatively countries, according to the GII, are Switzerland, United Kingdom, Sweden. According to IDI, the world's leaders of innovative development are Japan, the US and Sweden. China ranked 22th in the GII and 9th place in the IDI.

CONCLUSION

The aim of our paper was to prove the existence of different levels of national innovation systems: from global to regional. We used our integral index to analyses the place of the country in the global innovation system. At the same time we realize, that this issue needs further understanding. The results of our future work could be used in decision-making process at the governmental level. So, we leave it to our future research to develop a recommendations for the government and EAEU, because the ratio of the global innovation index values and its components among the member countries of the EAEU indicates the possibility of scientific and technological cooperation within the association.

However, such cooperation in the space of the EAEU was described in the contract about it and is already developing. In particular, the joint technology platforms are established. In addition, it is planned to create a supranational structure, as the Foundation for Economic and Scientific-Technical Cooperation, as part of the EAEU to finance advanced high technology economic and scientific-technical programs. It seems that the development of technological cooperation between economic entities of the EAEU countries will contribute to the development of mutual goods turnover and development within their import substitution in respect of goods from third countries.

REFERENCES

[1] About science and state science and technology policy: Federal law of the 23.08.1996 no. 127-FZ (ed. of the 03.12.2012). Russia / 2014.

[2] Andreyeva E.L., Polkova T.V. The estimation of labor life quality in regions of Russia / Economy of region, Russia, issue 3 (35) / pp. 91-100, 2013.

[3] Chereshnev V.A., Kuklin A.A., Cherepanova A.V. Theoretical and Methodological Approach to Forecasting of Sociodemographic Development of a Region / Economy of Region, issue 2 (22) / pp. 38-46, 2010.

[4] Freeman C. Technology Policy and Economic Performance – Lessons from Japan, London, Frances. Pinter Publishers, Britain 1987.

[5] Galkin M., Rodionova I.A. National innovation system in terms of the internationalization of research activity: monograph, Russia / Ed. prof. I.A. Rodionova. – Moscow: Ekon-Inform / 164 p., 2013.

[6] Orda O.V. Technopolises as an infrastructure element of the national innovation system / Economic journal, Russia, vol. 21 (issue 1) / pp. 25-32, 2011.

[7] The global innovation index 2015: Effective innovation policies for development / S. Dutta, B. Lanvin, S. Wunsch-Vincent / Johnson Cornell university, INSEAD, World international property organization, Switzerland / 419 p., 2015.

[8] Vlasov M.V., Panikarova S.V., Tyulyush C.O. Management of scientific productivity of the university / Scientific Review, Russia, issue 4 / pp. 531-538, 2012.

[9] Zakharova N.V. Formation of innovation economy and innovative systems of the European union countries : Diss. (Dr. of Economics), Russia, Moscow / 380 p., 2010.

[10] Zelenskaya T.V., Sokolova E.L. THE infrastructure in the innovation system: functions, levels and forms / Bulletin of Siberian state aerospace university named after academician M.F. Reshetnev, Russia, issue 2 (42) / pp. 162-165, 2012.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

POSITIVE AND NEGATIVE TRENDS OF THE ROMANIAN TOURISM

Assoc. Prof. Dr. Gabriela Popescu[1],
Lecturer Dr. Tabita Adamov [1],
Assist.Prof. Dr. Ana Mariana Dincu[1],
Assoc. Prof. Dr. Iasmina Iosmim[1]

[1] Banat`s University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara, **Romania**

ABSTRACT

Romanian tourism is distinguished in particular by the two basic components: the natural and anthropic component. Romania stands out in particular through its potential natural tourism, through its geographic position that offers a status of the Carpathian-Danubian-Pontic country, through its natural elements defining the structure and landscape of the territory: the Carpathian Mountains, the Danube River and Black Sea. There is one negative aspect that refers to these elements as not being exploited at its maximum level.

An original component of the anthropic resource in Romanian tourism is rural tourism with its typical symbols: music and costumes, crafts, gourmet products, dances, folk instruments, handicraft articles.

As a trend, Romanian village will undergo to both favorable and unfavorable social and economic effects. The favorable ones, derive from economic activities developed, and unfavorable ones are especially environmental. The favorable effects lead to local and regional development which includes the village.

Romanian tourism has many shortcomings: too many tourists and abandoned equipment and materials that can undermine small settlements. Another major issue concerns culture and education of the tourists. Demand in terms of places and products, should not cause distortion and destabilization of local culture. Tourism development without respecting a particular code is damaging both for countryside and natural ecosystem.

The countryside is exposed to degradation through the following actions: depopulation, the rapid spread of urban areas, soil, water, air, land and forest pollution, increasing and generalized degradation of the landscapes and cultural qualities.

Keywords: trend, Romanian tourism, negative, positive, aspects

INTRODUCTION

For Romanian economy, tourism represents the economic sector that has a valuable development potential, yet unexploited enough and can become a source of attraction both of investors and foreign tourists. The great advantage of Romania for tourism's development is represented by the natural and cultural resources of a great diversity and harmoniously distributed in the territory, witch gives the possibility of practicing the full range of forms of tourism.

Positive aspects refers to the fact that Romania has many tourist resources for exploitation and capitalization 18 national and natural parks, protected areas, Danube Delta Biosphere Reservation, the richness and the diversity of cultural heritage (monasteries, fortresses, churches, monuments), human communities that preserves the values of rural cultural civilization in every days life, the opportunities of practicing adventure tourism, offered by national rivers, of caving-tourism, equestrian tourism, cruise tourism on the Danube River, rural tourism, favored by the fact that Romania is the fifth country in terms of viticulture, the opportunities to practice cycle tourism, a mountain bike, but also of out-of-road competitions. From these, on the f UNESCO list, Romania is present with seven groups of sites: The Danube Delta, the fortified churches from Transylvania (Calnic, Valea Viilor, Biertan, Saschiz, Darjiu, Viscri, Prejmer), Hurezi Monastery, the painted churches from Moldavia (Probota, Voronet, Humor, Moldovita, Arbore, Patrauti, Suceava), the Dacian fortresses from Orastie Mountains (Banita, Luncani-Piatra Rosie, Costesti Blidaru, Costesti Cetatuie, Sarmizegetusa Regia, Capalna), the historic center of Sighisoara and wooden churches from Maramures (Rogoz, Ieud-Deal, Poienile Izei, Plopis, Surdesti, Desesti, Budesti, Barsana).

From geographically point of view, the country is divided into four areas: Transylvania, Moldavia, Romanian Country and Dobrogea.

Romanian Black Sea coast, nicknamed also the Romanian Riviera, stretching over of a length of 245 km and includes the largest Romanian port, Constanta.

Romania is the only place in the world where there are many more orthodox monasteries with a remarkable exterior and with interior frescoes that have been preserved and passed down from medieval times: Voronet, Moldovita, Sucevita, Humor, Probota, Putna. Also, the wooden churches from Maramures represent unique examples that combine Gothic style with traditional wood construction, many of these buildings being built during the eighteenth century and nineteenth century.

On the geographic and tourist map of Romania an important place returns:

• beautiful and wooded Carpathian Mountains, with many resorts for summer or winter, for skiing, located in beautiful valleys and mountain slopes: Sinaia, Busteni, Predeal, Poiana Brasov, Vatra Dornei;

• Black Sea coast with resorts such as Mamaia, Eforie Nord, Eforie Sud, Costinesti, Olimp, Neptun, Jupiter, Cap Aurora, Venus, Saturn, Mangalia 2 Mai, Vama Veche. The most important resort is Mamaia, situated at the north of Constanta town being a popular summer destination for Romanian and foreign tourists, as a result of major investment programs.

• Danube Delta, which is the largest European delta very well preserved.

All this gives to Romania potential for developing complex tourist products and increasing the total number of tourists. Also, the opportunities for attracting foreign tourists in particular are increasingly diverse: the offer of spa tourist resorts, various forms of business tourism generated by congresses, symposiums and exhibitions, actions with diplomatic character generated by Romania's accession to NATO, Romania's entry in EU, cultural and scientific life, opening of the multinational businesses etc.

RESULTS AND DISCUSSION

A problem of national and local importance of Romania is represented by the different capitalization degree of tourist potential, given the role that must be granted to the compliance of support capacity, but also to eliminating the regional and economic disparities. In this regard, while areas such as the Prahova Valley, Brasov and surroundings, Constanta and Black Sea coast have a mass tourism at the superior and over of the support capacity in peak season, in the rest of the tourist areas tourist's traffic is at the half of support capacity and even smaller.

The main cause of this situation is represented by the complex of unsuitable capitalization conditions, or difficult access, tourist services and general utilities of poor quality, inadequate recreational programs, networks of tourism accommodation facilities, not covering food and entertainment, workforce in the tourist occupational structure inadequate for market demand and quantitatively insufficient.

In relation to tourist potential, but also compared with neighboring countries, the share of Romanian tourism in GDP is very low, not succeeding to exceed 2%, compared to Greece with over 17%, or Czech Republic with over 10%. World Tourism Council (WTTC) anticipates an average growth rate of 3.8% per year until 2024. Moreover, the profit obtained by entrepreneurs in tourism is low. This is mainly due to the lack of complex tourism products, to the existence of tourism capacities old and not modernized, privatized in the 2001-2002 years, and to the lack of facilities for realizing complex tourist capacities, modernly equipped. To this is added the lack of accommodation capacities in tourist areas that offer great opportunities for practicing niche tourism and ecotourism. [8]

Also, it is missing totally or are insufficient the tourist capacities near the natural, national parks or other protected areas that are legislated. Without having an optimal quantitative and qualitative development of accommodation tourist structures, of catering and leisure, natural tourist resources can not be capitalized complex. In terms of tourism promotion, as a key factor for strengthening the place on the market and achieving of the success, Romania must comply to the international trend of growing, increasingly more, of the role of national institutions for the promotion of tourism in the intensive activity of promotion.

Tourism development represents, for many countries, an important goal of economic policy, given the beneficial effects on production, consumption, employment, international relations etc., its role of stimulating factor of progress, of growth. But the dynamics of tourism is conditioned, in large extent, by the achievements from other industries and sectors of the economy.

The naturally result of these relationships is the enrollment of the process of developing the strategy for tourism development between the fundamental attributions of national administration in the field, the only one capable to provide the correspondence with other components of the economy, to define objectively, its place between the priorities of economic and social increasing.

It counts the problem of identifying the causes of this negative impact of tourism on the Romanian economy. A first explanation would be the actual stage of capitalizing of the Romanian tourism potential.

Several papers published in the last two decades in Romania, have highlighted a series of negative aspects in this regard [1], [3], [4], [7]:

• between the special value of mountain natural tourism potential and degree of technical equipment with recreation means (ropeways, chairlifts, ski slopes), meaning the number of accommodation units, grouped into several resorts and tourist complexes, there is a big difference compared to other countries with tradition;

• although the in the country there is about 160 tourist resorts, a small number of resorts - Poiana Brasov, Sinaia, Predeal and Busteni, meaning tourist complexes - Durau, Semenic and Borsa-Maramures, have endowments at international level;

• accommodation capacities are not correlated with the length and capacity of ski slopes;

• mountain tourism is concentrated in tourist localities from the Prahova Valley, due to the proximity of major cities, of the existence of a general infrastructure developed at an appropriate level and of the existing tradition;

• broad material base of resorts from the Romanian coast of the Black Sea is grouped in those 12 existing resorts, but it was modernized only partial although offers all kinds of tourist services;

• reducing of tourist traffic in the Danube Delta, due to inadequate technical equipment and of the smaller number of accommodation places;

• Bucharest is the starting point for international tourist programs for visiting Romania, and they use the main existing road of communication;

• degradation of natural tourism potential in localities overstretched in terms of tourist activity.

A more accelerated development in Romanian tourism field has rural tourism and ecotourism, economic activities supported by European policy for rural development and nature conservation, being considered on the one hand possibilities for diversification of the rural economy, and on the other hand sources of income for the administration of protected areas.

In Rumania's case, the importance resources, although very rich and diversified, for tourism development in general and rural tourism and ecotourism in particular is relatively low, as long as they are not integrated into competitive tourist products, along with basic and complementary tourist service, adapted to the specifics of local resources and individualized through local characteristics.

Rural tourism can be called the "pearl" of Romanian tourism and certainly is the easiest way to get in touch with the varied and picturesque landscape, folk art, ethnography, folklore, traditions and not least with the particular hospitality of Romanians. [2]

The low degree of tourist capacity utilization (below 15%), low duration of leisure stay (two days) and reduced proportion of foreign tourists are the most important challenges for rural tourism and ecotourism development in Romania.[10]

General infrastructure and level of development have a major effect on tourism. In ecotourism development strategies must be taken into account by the adaptation to local conditions, by realization of the zoning works, ensuring accessibility using less

polluting means of transport, expanding of the certification of ecotourism products or various components of its. The trends of tourist traffic allow the establishment of agrotourist and ecotourism guesthouses either through new construction or by converting the existing ones using the financial resources made available through the National Program for Rural Development. [3]

European programs to promote quality and sustainable tourism destinations allow the participation to thematic competitions of Romanian rural tourism and ecotourism products.

Another form of tourism with potential is represented by spa tourism from Romania with a great attraction for tourists, but the most important thing is the therapeutic value of natural resources used in spa treatment, which constitute a remedy for human health. Unfortunately, in Romania, the population is not prepared and does not have a culture of spa treatment, this being designated, mainly, to people of the third age. Romania has about 70 such resorts with unique features in the world and about one third from the total of mineral and thermal springs of Europe. [5]

The efforts to promote health tourism were made, after 1990, more at non-governmental level, especially after 1994, the date of the establishment of O.P.T.B.R. - Spa Tourism Employers Organization from Romania. Spa tourism is practiced throughout the year and has the longest average stay of all forms of tourism, and its development will mean a significant share from Romanian tourism. This thing could be a chance for the development of health tourism and also of tourism industry increasing in Romanian GDP.

Another form of tourism that is slowly growing is social tourism that can be an excellent way for off-season periods. In this regard, was initiated the Exchange Program in health tourism Healtour- Calypso, which is a initiative of European Commission, having as purpose the access of disadvantaged people to visit the tourist regions of Europe and implicitly of Romania, helping in the same time local economies to exceed easier the difficulties from extra-season.

With all these defects of Romanian tourism, things move slowly in a positive sense. Thus, according to the National Institute of Statistics (NIS), in December 2015 compared with the corresponding month of the previous year both the arrivals and overnight stays in tourist accommodation units with tourist accommodation functions, recorded increases of 19.6% and 16,3%. Compared to December 2014, in December 2015 at border points were recorded increases both in arrivals of foreign tourists with 17.5% and also to the departures of Romanian visitors abroad with 30.1%.[9]

Arrivals in the establishments of tourists' reception in 2015 are in increasing with 17.2% compared to 2014. From the total number of arrivals, Romanian tourist arrivals in the tourist reception establishments with accommodation functions represented in 2015 77,4%, while the foreign tourists represented 22.6%, similar shares with the ones from 2014.

In terms of foreign tourist arrivals in the establishments of tourists' reception, the biggest share was held by those from Europe (74.5% from total foreign tourists), and from these 85.6% were from countries belonging to the European Union.

Overnight stays registered in tourist reception units in 2015 are up with 15.9% compared those from 2014. From the total of overnight stays, Romanian tourists

'overnight stays in tourists' reception establishments with accommodation functions have represented in 2015 81,0%, while foreign tourists overnights stays represented 19.0%. Regarding overnight stays of foreign tourists in the establishments of tourists' reception, the biggest share was held by those from Europe (72.6% from total foreign tourists), and from these 83.7% were from countries belonging to the European Union.

The most tourist arrivals of the foreign tourists accommodated in structures with reception came from Germany (266,9 thousands), Israel (219,3 thousands), Italy (211,2 thousands), France (134,5 thousands), USA (130,2 thousands).

Arrivals of foreign visitors in Romania, registered at border points, were in 2015 up with 10.5% compared to 2014. Most foreign visitors came from countries situated in Europe (93.0%).

From the total arrivals of foreign visitors in Romania, 57.3% came from EU countries. From European Union countries most arrivals were registered from Hungary (31.1%), Bulgaria (28.5%), Germany (8.2%), Poland (6.6%), Italy (6.1%) and Austria (3.4%).

Departures of Romanian visitors abroad, registered at border points, were in 2015 were up with 6.7% compared to 2014. Road transport means were mostly used for abroad departures, representing 78.1% from total departures. [9]

Whether we are talking about the riches of nature, like Carpathians, Danube Delta Biosphere Reserve, Black Sea, natural springs, or cultural heritage, UNESCO monuments, medieval towns or Dacian cities we believe there are two major problems, the need for a better promotion and the lack of accessibility. As in the market economy, a good product and a corresponding price are not sufficient to ensure its sale. It takes another factor to influence the behavior of potential comparators, namely promoting of tourism. For this reason, private companies and state institutions should reserve a prominent place to promote both internally and externally and to harmonize promotional efforts with other variables of the marketing.

Attracting the airlines, especially the low-cost ones, will generate a huge influx of foreign tourists that will contribute to the growth of this sector of the economy, to the harmonious development of regions and will positive influence the image of our country. The existence of some modern airport will lead to the development of business tourism, which currently is the strongest branch of the tourism industry from Romania. This type of tourism, which includes team-building sites, business travels, participation to the training programs represents an important source of incomes for Romanian operators. Actions in this regard relate the airport modernization from Suceava, from northern Romania, as well as attracting new low-cost airline operators on the existing airports (Rynair on the airport from Timisoara).

Besides the riches of nature and cultural heritage should be exploited the towns with everything they represent, from architecture to the nightlife, as in many other European cities, that live only from this tourism form, because the concept of "city break" is promoted rather weak in Romania.

In order to create a positive image of Romanian tourism are necessary some measures:

• Promotion of priority products Romania’s offer (Danube Delta, agrotourism and ecotourism, spa tourism, cultural and religious tourism, etc.);

• Development of some marketing programs based on market studies realized by specialized institutions using data from specialized tourism offices abroad;

• Using in a greater measure of the information technology and systems created on its base (computer reservation systems, computerized marketing destination etc.);

• Development at national level of some centers/points of information and tourism promotion centers and tourist resorts, tourist villages, protected areas, on tourist routes, airports, railway stations and ports, fairs, congress centers and business meetings;

• Promoting of special areas for ecotourism by developing special promotion materials (Danube Delta, natural parks, agrotourism);

• Improving the financing system of marketing and promotional activities;

• Organizing some large-scale events on the main foreign markets to promote specific tourist offer of Romania;

• Including Romanian tourism products in catalogs of major tour operator companies from Germany, France, Italy, Scandinavia, Canada, USA, China, etc.;

• Creating through television networks from abroad of some advertising campaigns with tourist representative products for Romania;

• Romanian tourism integration in European and global trends by initiating some cross-border tourism programs with neighboring countries Hungary, Serbia, Bulgaria, Moldavia and Ukraine, by creating cross-border tourism areas and common tourism programs, with all countries from Black Sea basin and developing and promoting sustainable tourism in border areas and in the country, complementing economic relations, social and political relations between countries, harmonizing Romanian legislation with the EU legislation and insurance of the protection, security and safety of tourists. [4], [6]

CONCLUSIONS

Given the negative aspects that prevent the development of Romanian tourism, we feel that it is imperative necessary to act in the following directions: improving the existing infrastructure, finding new ways to motivate staff employed in tourism, the correlation of prices/tariffs from tourism with the quality of services provided, developing some creative strategies of marketing in order to highlight the giant tourism potential that has Romania, state involvement through financial policies to support the development of tourism, as well as reconsidering the role of tourism and assigning of a priority in the Romanian economy. A problem of national and local importance of Romania is represented by the different capitalization degree of tourist potential.

Concrete actions in this regard relates to new programs and revision of existing investment programs and appropriate support from decision factors at government and municipal level from all ability areas: finance, public works, territory planning.

REFERENCES

[1] Bran Florina, Marin D., Simion Tamara, Istrate I., Touristic Romania, Editura Economica, Bucuresti, 1999.

[2] Ciolac Ramona**,** Agrotourism-representative issues and pro arguments, Lucrări Ştiinţifice Zootehnie şi Biotehnologii (Scientific Papers: Animal Science and Biotechnologies), ISSN 1221-5287, Editura Agroprint Timişoara, vol.48, pp 260-264, 2015.

[3] Caluseru A. L., Cojocariu L., Horablaga N. M.,. Bordean D. M, Horablaga A., Cojocariu A., Borozan A. B., Iancu T**.,** Romanian national strategy for the conservation of biodiversity 2013 – 2020 - integration of european environmental policies, SGEM - Conference Proceedings, Vol. 2, pp.723-728, 2013.

[4] Iancu T., Economie agroturistică, Editura Eurostampa, Timişoara, 2014.

[5] Iosim Iasmina, Popescu Gabriela, Some aspects of communication strategies used in tourism , RJAS, Al 11-lea Simpozion Internațional "Young people and agriculture research", , Vol. 47 Issue 4, pp. 95-98, 2015.

[6] Martin Simona Cristina**,** Lile, Ramona, Ciolac, Ramona, Sabin S. Chis**,** Analysis of the quality of tourism services within the tourist accommodation framework in Romania, SGEM International Multidisciplinary Scientific Conferences on Social Sciences & Arts, SGEM Conference on Political Sciences, Law, Finance, Economics & Tourisms, section Economics & Tourism, Conference Proceedings Volume III, pp.49-56, 2014.

[7] Neacsu N., Turismul si dezvoltarea durabila, Ed. Expert, Bucuresti, 2000.

[8] *** www.incdt.ro

[9] *** www.insse.ro

[10] *** www.mercury.ro

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

PROBLEMS OF DEVELOPMENT OF RELIGIOUS TOURISM IN TATARSTAN

Assoc. Prof. Dr. Niyaz M. Biktimirov [1]

Assoc. Prof. Dr. Almaz M. Galimov [2]

Assoc. Prof. Dr. Shamil Sh. Galimov [3]

[1] Kazan (Volga region) Federal University, **Russia**
[2] Volga region Academy of physical culture, sport and tourism, **Russia**
[3] Kazan (Volga region) Federal University, **Russia**

ABSTRACT

Of the many types of tourism religious pilgrimage tourism is one of the oldest species. This type of tourism is developing at a steady pace in recent years both in Russia and in the world. By number of tourists which can be attributed to a group of religious pilgrimage is one of the leading positions. World Tourism Organization estimates that the percentage of tourists in recent years reaches nearly 10% of the total number of tourists. If the year 2014 the number of tourists in the world exceeded 1 billion. man, the number of tourists traveling for religious purposes will be more than 100 million. man. Most travel for religious purposes in Europe. In this region there are Christian shrines, both regional and global importance. Most religious-cultic objects is concentrated in Italy, Spain, France and several other countries. World Center of religious tourism cult Christians is the Vatican City in Rome, which annually attends about 10 million. man. The second largest center of cult and religious tourism are holy for Muslims, the Saudi Arabian city of Mecca and Medina. Only during the Hajj in the month of Ramadan these cities visited by more than 2.5 million. believers. From religious pilgrimage tourism has features which distinguish it from other types of tourism, it is above all the specific contingent, conditions and principles of organization of tourist trips, etc. The article deals with the problems of development of religious pilgrimage tourism Muslims in the Republic of Tatarstan. Issues of Hajj travel and other activities.

Key words: religious tourism, pilgrimage, Hajj, Ramadan, Mecca, Islam, Kazan

INTRODUCTION

Visits to holy places have long constituted one of the most important and revered traditions are inextricably linked with the very essence of religious dogma.

Religious tourism is part of the tourism industry. religious worship is a mosque, cathedrals, museums, places of worship, spiritual centers, exhibitions, the holy sources, and other items specifically designed for worship This touristic objects, religious tourism resources which are available in many tour routes, enjoy increasing popularity.

A tourist travelling for religious purposes, is an outside their place of permanent residence for a period of not more than six months to visit holy places and centres of religions [2].

Under the religious tourism should be understood as activities associated with the provision of services and the needs of tourists travelling to the Holy places and religious centres outside the usual Wednesday for them [3].

Religious tourism is divided in two main varieties:-Pilgrim tourism and religious tourism excursion-cognitive orientation [3]. Religious tourism excursion-cognitive orientation for the contingent of the participants can be divided into two groups: the first group, you can enable participants to scientific expeditions, whose aim is the study of religious artifacts, ceremonial objects with scientific purposes. In another group, which is much more abundant in number of exhibitors include mass tourists different e.g.avlenij attending religious-cultic objects composed of tour groups for purely informative purposes. Consider the first group more closely, which we believe is composed of research and promotional pieces. Scientific-Research Department in the Republic of Tatarstan is represented, above all, the Humanities Department of the Academy of Sciences of the Republic of Tatarstan (TAS) and the Institute of international relations, history and Oriental Studies (IMOiV) Kazan Federal University (CFU). In the branch of Humanities of TAS study of religious-cultic objects, excavations, archival materials are involved in several institutions, among which the Institute of Tatar encyclopedia and regional studies, Institute for the history of them. Sh. mardzhani, Institute of archaeology and islamovedčeskih Research Center. On the main directions of research published a multi-volume encyclopedia of Tatar in Russian and Tatar languages, Tatar Encyclopaedic Dictionary, "Tatarstan: an illustrated dictionary, 12-minute a languid Redd Tatar folklore, trehtomnaâ academic grammar of the Tatar language, historical-ethnographic and dialectological Atlas, 7 volumes of the Anthology Tatar theologicalthoughts. " Historians and archeologists published a number of valuable works on ancient, medieval and modern history of Tatarstan and Tatar people. Among them, mention should be made of Atlas Tartarica "" history of the Tatars and peoples of Eurasia. The Republic of Tatarstan: yesterday and today "," Bulgarica. Time and space the Bulgarian civilization: Atlas "," the great Bulgarians cultural and spiritual revival "; 7 volumes of the history of Tatars from ancient times to our days, the definition of the age of 1000 Kazan and yelabuga. Praised in the scientific world received works of Ethnography, art history and the history of social thought.

The Humanities Department is actively involved in the Organization of congresses, conferences, symposiums, schools and other institutional arrangements. In particular, the Office participated actively in the Organization and preparation of activities dedicated to the 200-anniversary of Kazan State University, 60 anniversary of the victory in the great patriotic war and the 1000-anniversary of Kazan.

The Office and the members of the Department conduct intensive cooperation with foreign counterparts in the field of research studies, maintain scientific links with academic and scientific divisions trial Kazan, Moscow, St.-Petersburg, Udmurtia, Mordovia, Mari El Republic, Bashkortostan, the CIS countries, with University and research centers of the United States, Great Britain, turcii, Finland, Hungary, Uzbekistan, Kazakhstan, Kyrgyzstan, etc. They often appear in print, on radio and television, and participate annually in 100-110 international, national, Republican and regional scientific conferences. [4] the main archaeological surveys and excavations were carried out with the direct guidance and participation of the Institute of archaeology of Academy of science of the Republic of Tajikistan. It should be noted the main objects: this works on the territory of the Kazan Kremlin, the island-city summer

Sviyazhsk, Ancient Bulgare, Elabuga, Bilâre and many others. In some part of the result of their activities the Kazan Kremlin and Ancient Bulgars have entered into UNESCO object list, and the island-Castle Sviyazhsk is candidates for inclusion in the list. Most of the participants in the above activities, who come from other countries and regions in Russia can be defined as a community of business tourism.

Another major center of research direction is the Institute of international relations, history and Oriental Studies of the FSC. Major contributions to the development of religious tourism in Tatarstan made Chair of Museology, cultural and tourism "," archeology and Ethnology "," Tatarovedeniâ "and" Turkish and Oriental Studies and Islamic studies. These chairs in addition to the extensive research work is carried out and training of bachelors and masters of these directions of education. In parallel, existing in the Institute of management, economics and finance at the Department of service and tourism ", which is already 10 years preparing personnel for the tourism and hospitality industry, on the basis of the Department of museology, cultural and tourism began to prepare specialists on international tourism. On the basis of this Chair opened network Magistracy on international tourism. Students of these directions of education pass industrial practices on the basis of the leading travel companies of the city of Kazan and the Republic, taking part in the formulation and implementation of tourism projects and new tourist routes for visitors of the Republic. A great contribution to the development of knowledge on the history of Islam in Tatarstan and Russian activities makes the Islamic Institute in Kazan.

Promotional part of cognitive excursion destinations for tourism development is based primarily on the activities of tourist companies of Kazan and Tatarstan, together with public authorities and institutions. In the year 2014 in Tatarstan was created the State Committee for tourism, which has become the main coordinating body in the Republic of all institutions associated with tourism activities and hospitality industry. In the activities of the State Committee, it should be noted several directions: the popularization of Tatarstan as tourism destinations, support the development of major tourist centres of the RT, development of business, sports and religious-Pilgrim tourism. Pilgrimage tourism State Committee paid particular attention, since, Tatarstan has a unique situation, where two great religions, orthodoxy and Islam. These two denominations exist peacefully for more than five centuries. There are a number of famous religious worship worldwide, two of which are included in the UNESCO World Heritage list. In addition there are objects of pilgrimage Interfaith values as "sacred spring" in bilyarsk.

Pilgrimage tourism is a collection of travel of representatives of different denominations with the pilgrimage ends. Pilgrimage is the desire of believers to worship the Holy places [1].

Pilgrimage tourism is a collection of travel of representatives of the various religions with pilgrimage purposes [2].

A pilgrimage is a journey deep believers to the shrines of their worship. The aim of the pilgrimage to the Holy places is worship, prayer, repentance, less response to the vow during a grave illness or danger, and Thanksgiving to the Lord for deliverance from them. Quite often the purpose of pilgrimages happens healing from serious ailments of miracle-working icons, relics, sources [2].

One important aspect of pilgrimages is their spiritual and educational component. When visiting holy places people will learn about the history and spiritual traditions of monasteries and temples, worship, Saints and devotees of piety, whose life and work was associated with sacred objects included in the pilgrimage route. The pilgrims have the opportunity to talk with other denizens of the monasteries, some of them find themselves priests [1].

CONCLUSION

Religious tourism, like his other forms, has a positive impact on the economic development of Kazan and Tatarstan. The arrival of the pilgrims and tourists who are interested in religious tourism, contributes to the development of hotels, retail businesses, including souvenirs, services for travelers, etc. In Tatarstan, and increasingly in Kazan, the flow of tourists is growing every year, as a result of competently built city and Republic management to use existing tourist resources and increase their number. Development of tourism infrastructure, including the development of transport, improving the organizations providing services of public catering and hotel services, work with travel companies, training guides and guides, work on the restoration of cultural monuments, historical and religious sites, the return of ceremonial objects and religious believers-all these factors are positive for the development of religious tourism in Tatarstan and Kazan.

LITERATURE

1. Christ t. t. religious tourism: Stud. allowance for Stud. lebedevka. training facility. 2-nd ed., Corr. Pm: Academy, 2005. with 288.

2. Babkin A.v. special kinds of tourism: Stud. .. Rostov n/w:

3. Suprunenko Y.p. Kazan. Between East and West. M.: veche, 2013. 320 p.: ill.

4. https://www.yandex.ru/yandsearch? = clid 9582 & text = Academy of% 20nauk%% 20oficial′nyj% 20sajt modern us Navy Sikorsky sh & l10n = en & lr = 43 & redircnt = 1466461027.1

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

RECURRENCE QUANTIFICATION ANALYSIS OF CZECH MACROECONOMIC TIME SERIES

Radko Kříž[1]

Petra Lešáková[1]

[1] University of Pardubice, **Czech Republic**

ABSTRACT

The goal of this paper is to analyze a set of Czech macroeconomic time series with the use of Recurrence Quantification Analysis (*RQA*). We chose *RQA* because it is suitable for economic time series that are characterized by noise and short data sets. Through *RQA* we can obtain useful information on the quality and complexity of the hidden structure of the dynamics in an economy. Recurrence is a fundamental property of dynamical systems. At first we estimated the time delay and the embedding dimension, which is needed for the Lyapunov exponent estimation, the phase space reconstruction and for *RQA*. Finally we used *RQA* itself. We used recurrence plots (*RP*) as a powerful tool for visualization and analysis. Generally *RP* is an advanced technique of nonlinear data analysis. *RP* is a graphical method designed to locate hidden recurring patterns, nonstationarity and structural changes. We apply *RQA* in order to provide a classification based on topological aspects of their dynamics. Our considerations on the basis of these analyzes confirm that it could be chaotic behavior in certain macroeconomic time series.

Keywords: Recurrence Quantification Analysis, Chaos theory, Macroeconomic, Recurrence Plots, Time Series Analysis

INTRODUCTION

Deterministic chaos, usually referred to simply as chaos, indicates presence of structure and often very complex order on a global scale but absence of these characteristics on a local scale. In general, chaotic processes can be characterized by irregular and long-term unpredictable behavior, but this behavior is purely deterministic [1]. The methods used to analyze time series for detecting chaos can be classified according to Gilmore [2] into metric, dynamical, and topological tools. Metric methods depend on the computation of distances in the system's attractor, and include the Grassberger-Procaccia correlation dimension [3]. Dynamical methods deal with computing diverging orbits by estimating Lyapunov exponents. Topological methods are characterized by the study of the organization of the strange attractor, and they include close return plots and recurrence plots [4].

Classical metric and dynamical methods are sometimes hardly applicable to economic time series. The main problem in analyzing the macroeconomics time series is the lack of data and noisy data set. We don't have universal algorithms that work with small data sets and are robust against noise. Recurrence is a fundamental characteristic of many dynamical systems and was introduced by Poincaré [5]. *RQA* is a relatively new technique for the qualitative analysis of time series. Thanks to this technique we can

graphically detect hidden patterns and structural changes in time series. Recurrence is a fundamental property of dynamical systems, which can be exploited to characterize the system's behavior in phase space. Faggini [6] claims that topological tools, like *RQA*, can solve this problem. *RQA*, based on topological approach, was used to show recurring patterns and non-stationarity in time series [7]. It was applied to study chaotic systems because recurrence is one of the most important features of chaotic systems. Thanks to *RQA* it was possible to reveal a correlation in the data that was impossible to detect in the original time series. *RQA* is also particularly suitable for economic time series that are characterized by noise and short data sets [8].

METHODOLOGY

According to Takens embedding theorems [9] phase space dynamics can be faithfully reconstructed. Let there be given a time series $x_1, x_2, \ldots, x_N$ which is embedded into the *m*-dimensional phase space by the time delay vectors. A point in the phase space is given as:

$$Y_n = x_n, x_{n-\tau}, \ldots, x_{n-(m-1)\tau} \quad n = 1,2,\ldots, N-(m-1)\tau$$

where τ is the time delay and *m* is the embedding dimension. The reconstruction of the phase space dynamics is attained through the determination of the time delay τ and the embedding dimension *m*. Different choices of τ and *m* yield different reconstructed trajectories. The embedding technique simply generates a set of vectors which are lagged non-homogeneous sub-samples of the original series. For more information see [1, 10, 11].

We can display nonlinear dynamics as phase portraits. However, they can be realized maximum in three dimensional representations and can sometimes provide mixed or unclear information. Different and sometimes more effective way to visualize phase space dynamics are recurrence plots (*RP*). *RQA* aims at revealing the details of the system's higher dimensional phase space dynamics from a single observable output [12]. Generally *RP* is an advanced technique of nonlinear data analysis. *RP* is a graphical method designed to locate hidden recurring patterns, nonstationarity and structural changes, introduced by Eckmann [13]. It is a visualization of a square matrix, in which the matrix elements correspond to those times at which a state of a dynamical system recurs (columns and rows correspond then to a certain pair of times).

We have a trajectory of a system in its phase space [13]. The trajectory is vector and its components are points in phase space. The development of the systems is then described by a series of these vectors, representing a trajectory in an abstract mathematical space. Then, the corresponding *RP* is based on the following recurrence matrix:

$$\mathbf{R}_{i,j} = \begin{cases} 1 : \mathbf{y}_i \approx \mathbf{y}_j \\ 0 : \mathbf{y}_i \neq \mathbf{y}_j \end{cases} \quad i, j = 1,\ldots, N$$

where *N* is the number of considered states and $\boldsymbol{y}_i \approx \boldsymbol{y}_j$ means equality up to an error (or distance) *r*. Note that this *r* is essential as systems often do not recur exactly to a formerly visited state but just approximately. Roughly speaking, the matrix compares

the states of a system at times *i* and *j*. If the states are similar, this is indicated by a one in the matrix, i.e. $\boldsymbol{R}_{i,j} = 1$. If on the other hand the states are rather different, the corresponding entry in the matrix is $\boldsymbol{R}_{i,j} = 0$.

As our focus is on recurrences of states of a dynamical system, we define now the tool which measures recurrences of a trajectory in phase space: the recurrence plot [13]. The *RP* efficiently visualizes recurrences and can be formally expressed by the matrix

$$\mathbf{R}_{i,j}(r) = \Theta(r - \|\mathbf{y}_i - \mathbf{y}_j\|) \quad i, j = 1,\ldots,N$$

where N is the number of measured points $\boldsymbol{y}_i$, r is a threshold distance, Θ is the Heaviside step function. For r-recurrent states, i.e. for states which are in an r-neighborhood, we introduce the following notion:

$$\mathbf{y}_i \approx \mathbf{y}_i \Leftrightarrow \mathbf{R}_{i,j} \equiv 1$$

The *RP* is obtained by plotting the recurrence matrix, and using different colours for its binary entries, e.g., plotting a black dot at the coordinates (i,j), if $\boldsymbol{R}_{i,j} \equiv 1$, and a white dot, if $\boldsymbol{R}_{i,j} \equiv 0$. Both axes of the *RP* are time axes and show rightwards and upwards (convention). Since $\boldsymbol{R}_{i,i} \equiv 1$ for all $i=1,\ldots,N$ by definition, the *RP* has always a black main diagonal line, the line of identity. Furthermore, the *RP* is symmetric by definition with respect to the main diagonal, i.e. $\boldsymbol{R}_{i,j} \equiv \boldsymbol{R}_{j,I}$ [14]. For more information see Marwan [14]. We have used the following *RQA* metrics:

Recurrence (*RR*) is defined as the percentage of recurrent points in an *RP*:

$$RR = \frac{1}{n^2}\sum_{i,j=1}^{n}\mathbf{R}_{i,j}$$

Determinism (*DET*) is defined as the percentage of recurrence points which form diagonal lines (segments) parallel to the main diagonal:

$$DET = \frac{\sum_{l=l_{\min}}^{n} lP(l)}{\sum_{i,j=1}^{n}\mathbf{R}_{i,j}}$$

where l denotes length of diagonal line and $P(l)$ denotes the frequency (distribution) of l length parallel to the main diagonal segments in the *RP*.

Laminarity (*LAM*) is an analogous definition to that of determinism (*DET*) and is defined as:

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL INTERDISCIPLINARY SGEM 2016

$$LAM = \frac{\sum_{\nu=\nu_{\min}}^{n} \nu P(\nu)}{\sum_{\nu=1}^{n} \nu P(\nu)}$$

where ν denotes the length of the vertical line structure.

Trapping time (*TT*) is defined as average length of all laminar states:

$$TT = \frac{\sum_{\nu=\nu_{\min}}^{n} \nu P(\nu)}{\sum_{\nu=\nu_{\min}}^{n} P(\nu)}$$

Entropy (*ENT*) is defined:

$$ENT = -\sum_{l=l_{\min}}^{n} p(l) \ln p(l)$$

As already mentioned, *RP* visualizes trajectories in phase space. *RP* shows important information in the time evolution of these trajectories, because typical patterns in *RPs* are linked to a specific behavior of the system. *RP* is always symmetrical diagonally and contains at least one of the following structures called textures: single dots, diagonal lines as well as vertical and horizontal lines (the combination of vertical and horizontal lines obviously forms rectangular clusters of recurrence points); in addition, even bowed lines may occur [14].

- Single, isolated recurrence points can occur if states are rare, if they persist only for a very short time, or fluctuate strongly.
- A diagonal line occurs when a segment of the trajectory runs almost in parallel to another segment.
- A vertical (horizontal) line marks a time interval in which a state does not change or changes very slowly.
- Bowed lines are lines with a non-constant slope. The shape of a bowed line depends on the local time relationship between the corresponding close trajectory segments.

Diagonal lines are the most interesting structures in this analysis. These lines indicate the existence of unstable periodic orbits and thus are characteristic of the presence of determinism. If there are only diagonal lines in the recurrent plot, then it is a periodic signal. Periodic and quasi-periodic systems have *RPs* with diagonal oriented, periodic or quasi-periodic recurrent structures (diagonal lines, checkerboard structures). Irrational frequency ratios cause more complex quasi-periodic recurrent structures (the distances between the diagonal lines are different).

EMPIRICAL ANALYSIS

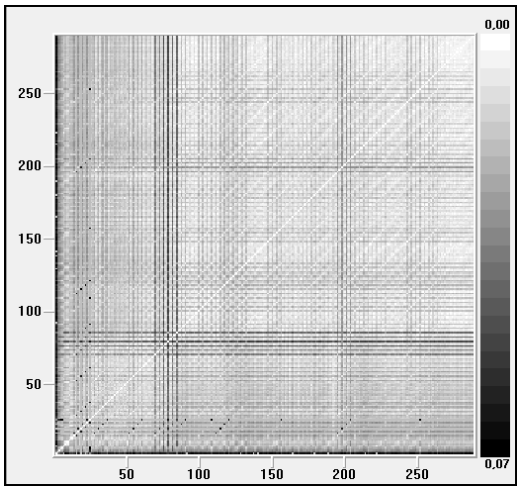
We applied *RQA* on a set of macroeconomic time series from the Czech economy. We used data from the Czech Statistical Office. The macroeconomic data are monthly time series. We analyzed the growth rates of these macroeconomic time series: the Consumer's Price Index (CPI) from January 1991 to December 2015, the Relative Total Import (I) from January 1999 to April 2016, the Czech stock market index (PX) from September 1992 to April 2016, the Relative Total Increase of Vital Statistics of the Czech Republic (TI) from January 1992 to March 2016.

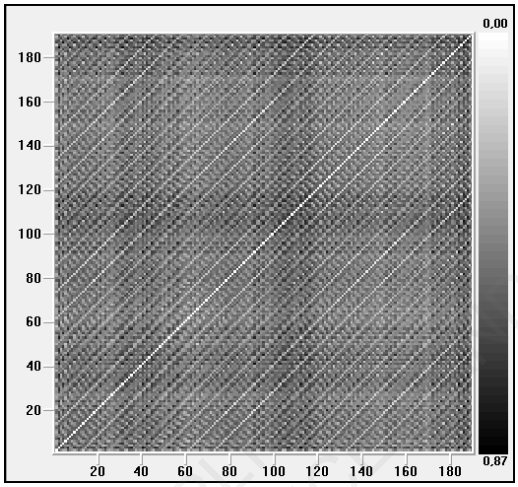
We have used in this research software called VRA (Visual Recurrence Analysis) developed by Eugene Kononov. VRA is a software package written in C++ using Borland C++ Builder 3.0 for topological analysis, qualitative and quantitative assessment, and non-parametric prediction of nonlinear and chaotic time series. The results of the *RQA* on the rates of these sequences are listed in Tab. 1.

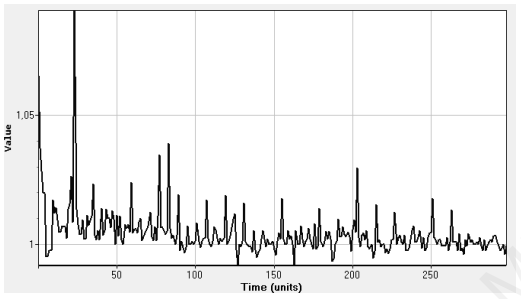
At first we estimated the time delay and the embedding dimension. There are many opinions about necessity to estimate the time delay and the embedding dimension. Some authors claim that parameters are of crucial importance to the generation of an "accurate" recurrence plot. Others authors adopt the strategy of $m = \tau = 1$ in all *RP* and *RQA* of macroeconomic time series. For example Kyrtsou et Vorlow [1] and Zbilut et Webber [1] describe these questions in more detail. We are inclined to think that the proper determination of the time delay and the embedding dimension is crucial for further analysis, unlike Kyrtsou et Vorlow [1].

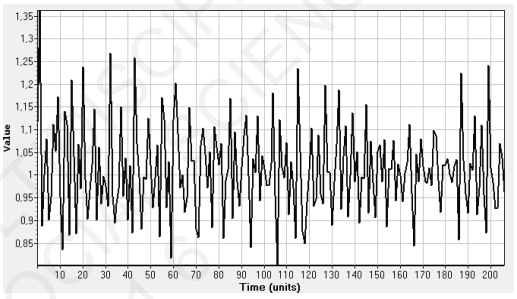
In the recurrence plots of *CPI* and *I* we can sense a certain structure and signs of diagonal lines. These recurrence plots are nothing like recurrent plots of white noise. An immediate observation from the tabulated results is that the recurrence plots of the macroeconomic data suggest a very strong nonstochastic nature for the underlying dynamics. We can thus exclude a purely random process. Kyrtsou et Vorlow [1] show a similar result with the US Consumer's Price Index. As already mentioned, diagonal lines are the most interesting structures in this analysis. We can thus exclude a purely periodic process, because purely periodic processes have only diagonal lines. These considerations confirm that it might be chaotic behavior. *RR*, *DET* and *LAM* for both time series are close to 100 %, which shows that the recurrence plots are replete with parallel line segments to the main diagonal. Kyrtsou et Vorlow [1] emphasize that the macroeconomic sequences they examine are monthly time series, thus even small parallel segments to the main diagonal are of crucial importance for the classification of the observed dynamics. In contrast, the recurrence plot of *PX* does not show any diagonal structures. This result is consistent with the work of Kodera and Quang [11]. This work shows that the most liquid stock returns on the Czech stock market and the *PX* series do not have signs of determinism. There are huge differences between the the Czech stock market index and the Dow Jones stock price index, which was analyzed by Kyrtsou et Vorlow [1]. *TI* results are questionable. In these recurrence plots we can sense signs of diagonal lines (cf. Figure 1, TI), but *RQA* confirmed nothing of the sort. Similar results are given by *RQA* for Czech GDP growth rate [15].

SCIENTIFIC PAPERS OF THE UNIVERSITY OF PARDUBICE SERIES D FACULTY OF ECONOMICS AND ARTS 2016

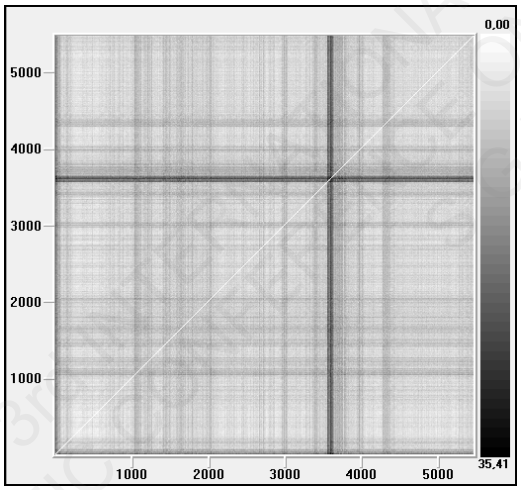

0,00
0,07
50 100 150 200 250

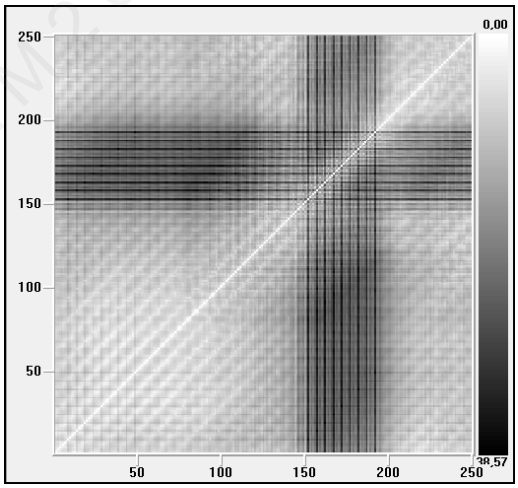

0,00
0,87
20 40 60 80 100 120 140 160 180

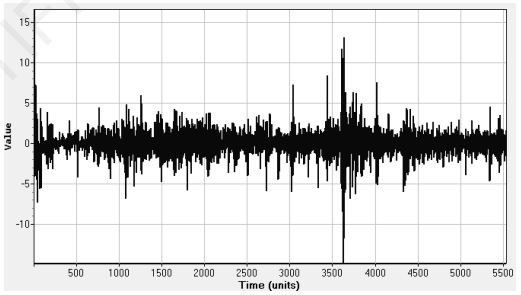

Value
Time (units)

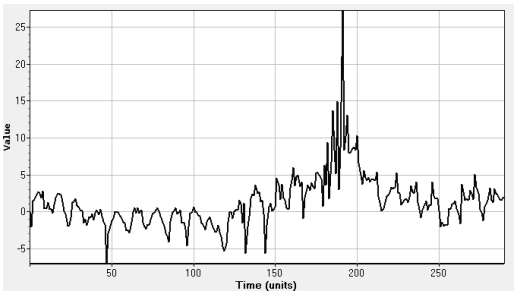

Value
Time (units)

CPI I


0,00
35,41
1000 2000 3000 4000 5000


0,00
38,57
50 100 150 200 250


Value
Time (units)


Value
Time (units)

PX TI

Fig. 1. Recurrence plots. (from left to right, top to bottom): Consumer's Price Index (*CPI*), Import (*I*), the Czech stock market index (*PX*) and Relative Total Increase (*TI*)

Tab. 1. Results of *RQA*

	CPI	**I**	**PX**	**TI**
τ	3	2	4	5
m	4	9	18	9
RR	100	100	0	0,4
DET	99	99	0	0
LAM	99	99	0	0
ENT	8,16	7,54	0	0

CONCLUSION

Nonlinear methods based on the detection of the presence of determinism appear to be useful for the analysis of macroeconomic data. However, these methods require adequate input data, which is not usually available. *RQA* is suitable for economic time series that are characterized by noise and short data sets. *RP* is an advanced technique of nonlinear data analysis. *RP* is a graphical method designed to locate hidden recurring patterns, nonstationarity and structural changes. Note that in these cases classical phase space visualization, such as phase portraits, is impossible because embedding dimensions are between 4 and 18. Recurrence plots are a very effective way to visualize phase space dynamics.

Recurrence plots show is that these sequences are characterized mostly by complex dynamics. Visually, we can exclude a purely random process as well as a purely periodic process. We can assume that this might be chaotic behavior. According Kyrtsou et Vorlow [1] the extent to which this complexity may imply chaos can be assessed by the *RQA* results of Table 1 which suggest the presence of strong nonlinear determinism for *CI* and *I*. Confirmation chaotic behavior is due to inadequate data probably impossible by classical methods based on invariant measures (e.g. Lyapunov exponent). In contrast, the *PX* recurrence plot does not show any diagonal structures therefor there is no determinism. *RQA* also confirms the absence of determinism in the Czech stock market index (*PX*). This is consistent with our expectations and such other works e g. [11].

ACKNOWLEDGEMENTS

Supported by the specific science grant SGS_2016_ of the University of Pardubice.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION MULTIDISCIPLINARY NATURAL SCIENCES AND ARTS

REFFERENCES

[1] Kyrtsou C., Vorlow E. C., Complex dynamics in macroeconomics: A novel approach. New Trends in Macroeconomics. Springer Berlin Heidelberg, Germany, pp 223-238, 2005.

[2] Gilmore C. G., A New Test for Chaos. Journal of Economic Behaviour and Organization, vol. 22, pp 209-237, 1993.

[3] Grassberger P., Procaccia I., Characterization of strange attractors. Physical Review Letters, vol 50, pp. 346-349, 1983.

[4] Belaire-Franch J., Contreras D., Recurrence plots in nonlinear time series analysis: free software. Journal of Statistical Software, vol 7(9), pp 1-18, 2002

[5] Poincaré H., Sur la probleme des trois co*RP*s et les équations de la dynamique, Acta Mathematica, France, vol. 13, pp 1–271, 1890.

[6] Faggini M., Chaos detection in economics. Metric versus topological tools, MPRA Paper, University Library of Munich, Germany, 2010

[7] Zbilut J. P., Giuliani A., Webber Jr. C. L., Recurrence quantification analysis as an empirical test to distinguish relatively short deterministic versus random number series, Physics Letters A, vol. 267, issues 2–3, pp 174–178, 2000.

[8] Trulla L. L., Giuliani A., Zbilut J. P., Webber Jr. C. L., Recurrence quantification analysis of the logistic equation with transients. Physical Review Letters A, vol. 223, issue 4, pp 255-260, 1996.

[9] Takens F., Detecting strange attractors in turbulence. Dynamical systems and turbulence, Warwick 1980. Springer Berlin Heidelberg. pp 366-381, 1981.

[10] Kříž R., Chaotic Analysis of the GDP Time Series. In: Nostradamus 2013: Prediction, Modeling and Analysis of Complex Systems. Springer International Publishing, Switzerland, pp 353-362, 2013.

[11] Kodera J., Quang T., Vizuální nelineární rekurentní analýza a její aplikace na český akciový trh. Politická ekonomie, Czech Republic, pp 305-322, 2009.

[12] Zbilut J. P., Webber C. L., Embeddings and delays as derived from quantification of recurrence plots. Physics letters A, vol. 171, issues 3–4, pp 199-203, 1992.

[13] Eckmann, J. P., Kamphorst S. O., Ruelle D., Recurrence Plots of Dynamical Systems. Europhysics Letters, vol. 4, pp 973–977, 1987.

[14] Marwan N., Romano M. C., Thiel M., Kurths J., Recurrence Plots for the Analysis of Complex Systems. Physics Reports, vol. 438, issues 5-6, pp 237-329, 2007.

[15] Kříž R., Finding chaos in Finnish GDP. International Journal of Automation and Computing, vol. 11, pp 231-240, 2014.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS

REGIONAL DEVELOPMENT IN ROMANIA - REALITIES AND PERSPECTIVES

Assoc. Prof. Dr. Avram Costin Daniel [1]

Prof. Dr. Avram Veronel [2]

Dr. Avram Alexandru [3]

[1] University of Craiova, **Romania**
[2] University of Craiova, **Romania**
[3] West University of Timişoara, **Romania**

ABSTRACT

Territorial economic development leads to gaps of center-periphery type as well as accumulation of tensions which may manifest at social, demographic and cultural level, having an impact on the quality of life. The gaps are obvious even in the most developed economies of the world, so it is important to know which is the admissible level of these gaps and what are the mechanisms by which the policy of cohesion and solidarity can contribute to a harmonious and sustainable development, while preserving the local characteristics and not an uniformity and egalitarianism unacceptable for a democratic state.

Romania is a national, sovereign, independent, unitary and indivisible state and it administratively consists of 41 counties plus Bucharest, corresponding NUTS 3. By grouping several counties, eight development regions (NUTS 2) and four macro-regions (NUTS 1) were formed.

Territorial economic development has led to the existence and intensification of gaps, thus it is very important to reduce and manage them by implementing coherent programs designed for continuous and sustainable growth at regional level.

Keywords: regional development, gaps, GDP per capita, human capital, investments

INTRODUCTION

Modern economies that have entered into a development cycle based on the idea of a national, sovereign and independent state reached different stages of development. Increasing economic interdependence under the impact of globalization and regionalization has led to refining the idea of unity in diversity and a European construction which was carried out in successive phases, as a true example of regional economic and monetary integration[1]. Over time have been accumulated gaps and discrepancies between countries but also between regions of the same state. Whether it's about unitary or federal states, the gaps compel a decentralization of economic decision, the activation of policies and mechanisms for ensuring the cohesion and achievement of a real convergence.

SCIENTIFIC 3rd INTERNATIONAL MULTIDISCIPLINARY CONFERENCE 2016 SOCIAL SCIENCES AND ARTS

LITERATURE REVIEW

The existence of gaps between countries and regions brought a challenge to the academic community but also to policy makers alike, the question "*Whether it is normal for differences to grow or, on the contrary, to diminish over time*?", opens a vast field of research for identifying and measuring the economic convergence.

For neo-liberals things are not so simple, so there is a period of deepening of disparities followed by a moment when the gaps do not increase, and the economy enters into a process of convergence that can determine a significant rapprochement of the development level. The time horizon can be a lengthy while the process can be contradictory, being possible for poorer countries to reach more quickly to upper technological frontier without repeating the unsuccessful experiments from developed countries.

Theoretical issues of territorial development have found the most diverse explanations worldwide, from the *Theory of Uneven Spatial Development*[2], continuing with identifying *Growth Poles* able to attract like a magnet investments and become a regional engine of economic growth[3] up to the *Industrial Location Theory*[4].

At European level there are studies related to the issue of existing gaps between regions of the same country and the identification of solutions for achieving regional convergence. Thus, in Italy, a member country of the European Union, with significant disparities between the industrialized North and the less developed South, has been analyzed the impact of the contribution of technical progress on economic convergence[5], the conclusion being that increased productivity through technical progress can positively contribute to reducing disparities. A study conducted in Turkey[6] did not get conclusive results on the convergence between center and periphery, given that the additional funding has not been accompanied by a faster growth of less developed regions.

In Romania there are a number of studies and analyzes that emphasize the differences in regional development [7], being identified some gaps:

- Low to medium disparities (population number, density of public roads),
- Large disparities (GDP/capita, RCD employees).

In relation to the level of development as measured in terms of GDP / capita[8], the development regions of Romania have been divided into developed areas (above average) and underdeveloped (below average) and, depending on their rhythm of growth, there have been identified regions in boom and regions in decline. This classification may help identify the regional trends, since real convergence is achieved when the general level increases and the gaps are reduced. In a previous article we studied the impact of government research and development spending on economic growth and have identified a strong stable correlation between R & D spending level and GDP, respectively gross fixed capital formation [9].

RESEARCH METHODOLOGY

The objective of this article is to present and analyze the economic gaps and disparities between the development regions in Romania through an analytical-argumentative

approach. The analytical dimension allowed us to choose the right set of economic and social indicators that can provide the fair image of the existing gaps and identify the ways to reduce them. Argumentative dimension edge us closer to understanding the cause-effect relationship and choosing some scenarios that may contribute to the onset of real convergence in Romania's regions. The logical line of reasoning leads to the conclusion of our research.

DISPARITIES, INEQUITIES, DISCREPANCIES

Since they entered into the process of capitalist development at different points in time, with different efforts, resources and results, the national states are currently in different stages of development and a number of gaps, inequities and disparities are visible. On the other hand, one can not talk about standardization because there will always be differences between countries and regions.

The economic indicator that can best express the degree of development of a country is GDP / capita. This indicator reveals significant gaps between the European Union countries, as shown in Figure No.1.

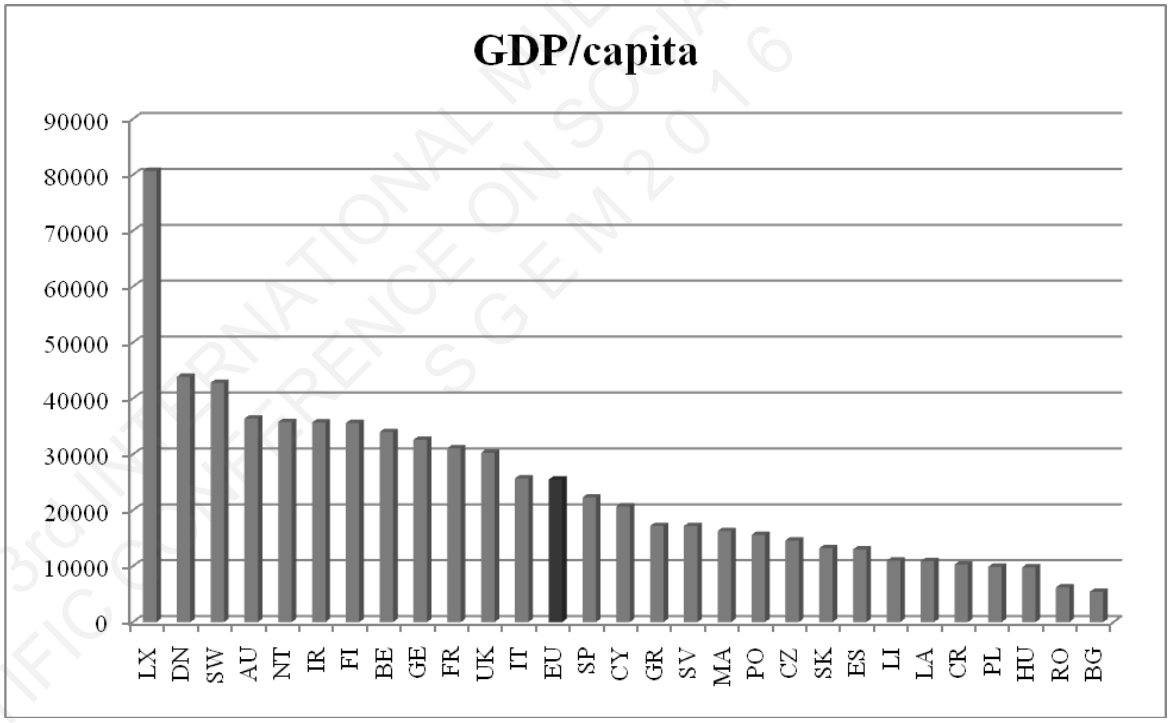


Figure no.1 Gross Domestic Product/capita in the states of European Union
Source: Own processing by Eurostat

At EU level, by comparison with an average GDP / capita of 25,500 euro / inhabitant, we have a country, Luxembourg, which exceeds the average by 216.5%, a group of 11 countries that exceed the average percentages ranging from 0.8% (Italy) to 72.2% (Denmark), and 16 states below the EU average with percentages ranging between -78.8% (Bulgaria) to -12.5% (Spain).

Gaps and disparities in regional development can be identified in Romania, which from territorial and administrative point of view, as a unitary national state, is divided into 41 counties and Bucharest, according NUTS3. The development regions are formed according to NUTS1 in four macro regions and eight regions according to NUTS2.
Analysis of GDP / capita on each macro-region in Romania highlights a number of gaps according to Figures no. 2-5:

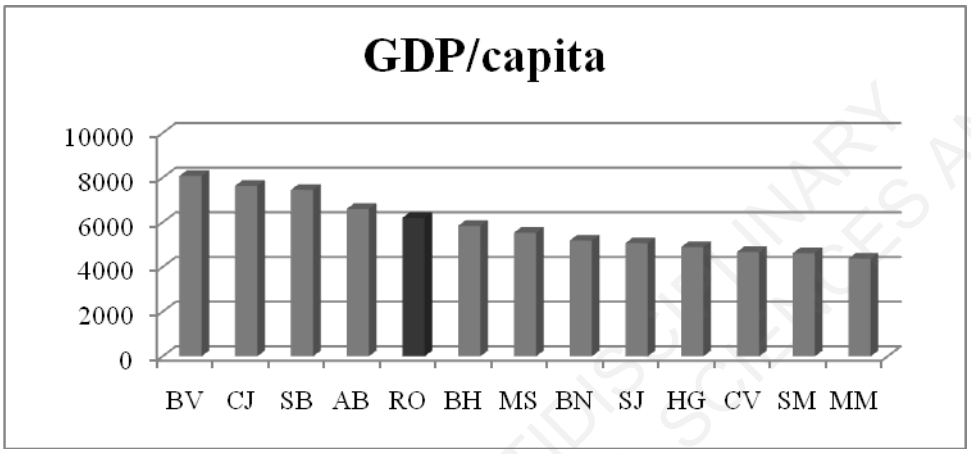


Figure no.2 *GDP/capita in Macro-region 1*

Source: Own processing by INS

In Macro-region 1, there are 4 counties above the national average and 8 counties below the average, but still close to that level, which indicates a high homogeneity. Industrial development policies by attracting investors capable to exploit the natural, material and human resources of the area can easily show their results.

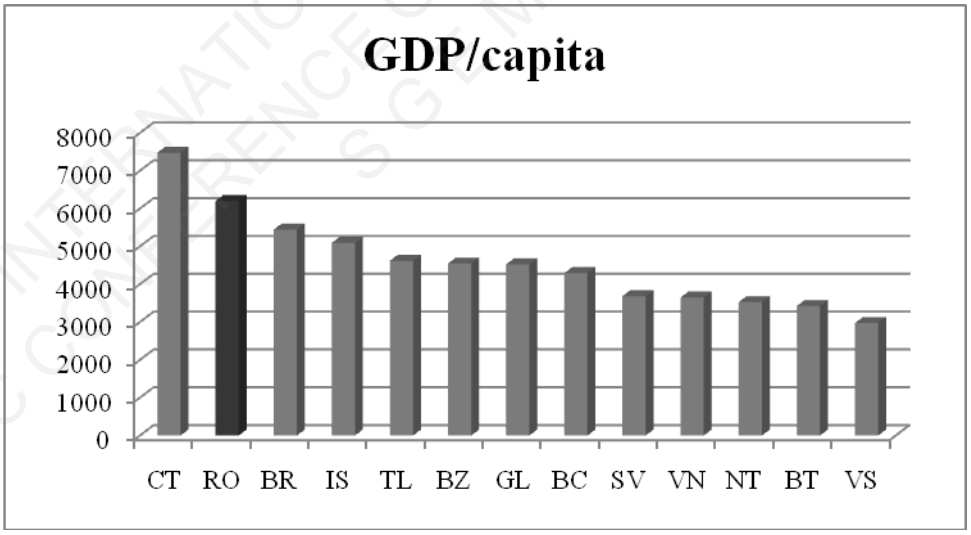


Figure no.3 *GDP/capita in Macro-region 2*

Source: Own processing by INS

In Macro-region 2 only a county exceeds the national average and it is not surprising that a large part of the population chose to leave to work in other EU states. This area requires policies to encourage the return of citizens who work abroad in the country, because, with the added experience acquired, they may contribute to the recovery of the region.

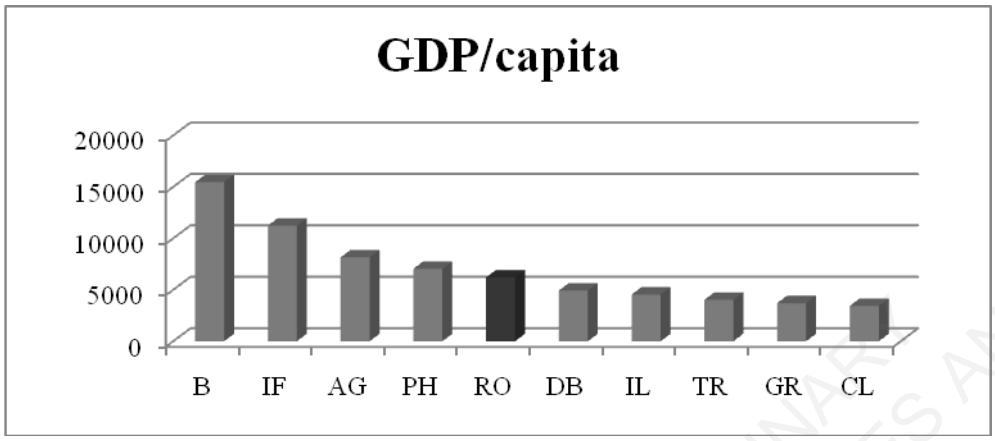


Figure no.4 *GDP/capita in Macro-region 3*

Source: Own processing by INS

In Macro region 3 are registered the largest gaps, with 4 counties among the most developed economically, with traditions in the automobile industry, oil equipment production, petrochemical plants etc., but also 5 counties with a strong agricultural profile for which are necessary special policies to help them catch up.

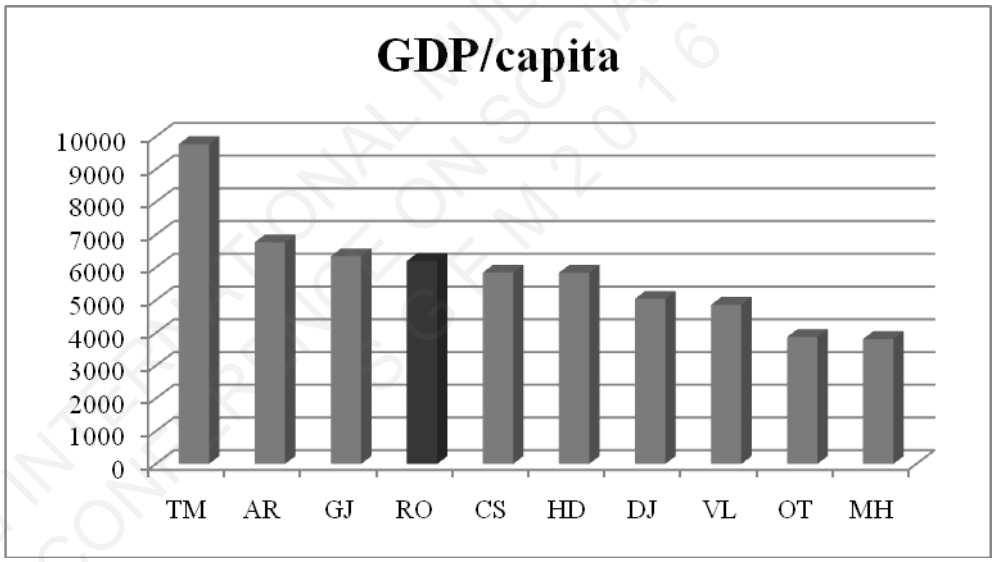


Figure no.5 *GDP/capita in Macro-region 4*

Source: Own processing by INS

Macro-region 4 has three counties with GDP /capita above average and 6 counties below the national average. Particular attention should be paid to counties in the South West Oltenia which are compactly occupying the last four places in the macro-region. It is an area with insufficiently exploited agricultural character and with great expectations in the automotive, chemical industry, electrical engineering industry, shipbuilding and rolling stock industry.

The national average of 6.200 euro GDP / capita is topped by a number of 12 counties with percentages ranging from 173% (Bucharest) to 3% (Gorj). A total of 30 counties are below the national average with percentages ranging from -3% (Caras-Severin) to -47% (Vaslui). We notice a situation of rapprochement between the levels of

development achieved by the Romanian counties, meaning that only three administrative units exceed the average by more than 50%, respectively Bucharest, Ilfov and Timis, while all other counties are between ± 50%.

And in terms of the existence of viable growth poles represented by the existence in the Euroregion of counties situated above the national average, there is the following situation presented in Table no. 1:

Table no.1 The situation of growth poles on regions

Number	Region	Number of poles	Counties
1	Center	3	Alba Brasov Sibiu
2	Bucharest-Ilfov	2	Bucharest Ilfov
3	South	2	Arges Prahova
4	West	2	Arad Timis
5	North-West	1	Cluj
6	South-West	1	Gorj
7	South-East	1	Constanta
8	North-East	-	-

Source: Own processing by INS

In conclusion, the gaps between counties are significant but smaller in amplitude than the disparities between EU member states. All counties in Romania, including the most developed, are below the EU average GDP / capita indicator; this implies the need to recover disparities in relation to the European countries primarily and recover existing regional disparities secondarily.

SUSTAINABLE DEVELOPMENT AND GAPS DIMINISHMENT

Gaps diminishment is possible in conditions of implementation of coherent national programs for sustainable economic growth at a rate higher than the European average, respectively the national average for regional development. The main factors that can contribute to economic growth are traditionally labor and capital, being very important the manner of combining the production factors[10].

Capital has as a starting point the natural resources and their involvement in the production process, as well as Foreign Direct Investment (FDI).

At territorial level, there are disparities in terms of attracting foreign direct investment (FDI), being preferred areas like Bucharest, Ilfov, Cluj, Brasov, Sibiu, Constanta, but also some areas less attractive for foreign investors: Botosani, Vrancea, Mehedinti, Calarasi, Ialomita, Vaslui.

A decisive factor of production in sustainable economic development is the human capital, primarily characterized by a series of negative demographic developments such as the numerical reduction of the population and emergence of the phenomenon of increasing the average age of the total population known as the aging of labor force.

The labor force has declined significantly in 2009-2013 compared to 2004-2008, due to the decrease in number of the young people aged 18 years (253000/year compared to 364000/year) as a result of the lower birth rate after the revolution from 1989.

Quality of the workforce is also important, which depends crucially on a number of factors such as:

- Education system that can provide the basic training of population for active life;
- Public health system, which provides a foundation for maintaining the working capacity;
- Cultural and motivational factors necessary for obtaining well-paid jobs.

In a careful analysis of the problems the educational system is facing, in addition to the chronic under-funding of this important sector of activity, we notice that the most serious problem is the rate of school drop which is manifested throughout the period of schooling. This phenomenon is deeply damaging and is manifested both in developed and less developed regions.

CONCLUSION

The main objective of the policies implemented by the authorities in Romania must be that of overcoming the gaps separating us from the developed countries of the European Union. It is known that, until now, no country entered the Eurozone without having - 60% of the EU average of the GDP / capita. Romania currently stands at about - 50% of GDP / capita at purchasing power parity. Compared to the target set for entering the Eurozone, in 2019, Romania must recover in a few years at least 10 percent. Is this possible?

Given the aversion against risk of the market, it is unlikely the FDI attracted to increase dramatically in the next few years. In contrast, Romania has available for the period 2014-2020 about 40 billion Euros in total European funds (structural ones and for agriculture). According to some estimates, attracting about 60% of these funds, i.e. approximately 4 billion Euros / year, could increase the potential GDP with about 1, 6 percentage points, respectively from 2 % per year to about 3, 5 % per year.

Reduction of population affects the potential GDP, even though, paradoxically, it helps the arithmetic increase of GDP / capita. The adverse effect prevails on the medium and long term, because a decreasing number of employees will have to support an increasing number of retirees. Measures for increasing the quality of educational system can not produce in any case short-term positive effects, since the results in this area can only be felt on medium and long term.

A possible solution is to stimulate the persons in the age group 65-70 years, who are able and willing to work, to remain active on the labor market (not by a growth of administrative retirement age, but a decision freely consented). Within the European Union, Romania has one of the lowest participation rates of the respective age group. Another problem that requires special attention is related to continuous training throughout life (Life Long Learning), which can enhance the quality of labor force and can provide greater flexibility and adaptability of the workforce to respond to new challenges. The efforts in this area are currently modest.

REFERENCES

[1] Avram M., Cristea D.H., Avram V., Mates D., Domnisoru S. Integrarea Romaniei in Uniunea Economica si Monetara, Universitaria, Romania, 2008, pp 21-25;

[2] Myrdal G., Economic Theory and Under - Development Regions, London, Duckworth, 1957, pp 115-116;

[3] Perroux F., Pour une philosophie de nouveau development, PUF, Paris, 1981, pp 64-66;

[4] Mc Cann P., Sheppard S., The Rise Fall and Rise again of industrial location Theory Regional Studies no.37, pp. 649-663, 2003;

[5] Costa M., Iezzi S., Technology spillover and regional convergence process: a statistical analysis of the Italian case, Statistical Methods and Applications, Volume 3, Issue 3, pp 375-398, 2004;

[6] Gezici F., Hewings G. J.D., Geo-regional convergence and the economic performance of peripheral areas in Turkey. Review of Urban & Regional Development Studies, Volume 16, Issue 2, pp 113–132, 2004;

[7] Antonescu D., Identifyng Regional Economic Disparities and Convergence in Romania Journal of Knowledge Management and Information Techology Scentific Repec.org, vol.2, 2012, pp 1-32;

[8] Zăman G., Goschin Z., O tipologie a creşterii economice regionale în Romania, Romanian Journal of Economics, no.38, 2014, p 137;

[9] Avram A., Avram C.D., Avram V., Research and development expenditures between discretionary costs and source for economic growth - Romanian Journal of Economics, Vol.39, 2014, pp 49-66;

[10] Avram C.D., Economie generala, Universitaria, Romania, p 71, 2012.

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SCIENCES AND ARTS SGEM 2016

REGIONAL DISPARITIES AND COMPETITIVENESS OF SLOVAK REGIONS

Ing. Katarína Kráľová, Ph.D.

Ing. Jana Sochuľáková, Ph.D.

Alexander Dubcek University in Trencin. Faculty of Social and Economic relations, **Slovakia**

ABSTRACT

Competitiveness on a global, regional or local level is influenced by numerous factors, which are the subject of scientific research, but fact proven by the time and conditions is that balanced economic and social development of regions is determined by the portfolio of the structure of regional economy. Slovak Republic, as well other EU member countries have problems with inter-regional differences for a long time. These are manifested in various forms – in the plane of the economic, social, environmental and other. Various regional macroeconomic indicators are used to express and quantify inter-regional differences. Reducing regional disparities is one of the main objectives of regional and structural policy EU. In Slovakia, to the deepening of regional disparities has contributed significantly transition from centrally planned economy to a market economy that brought many changes which still persist. The aim of this paper is to assess the competitiveness of regions in Slovakia and inter-regional differences in terms of selected macroeconomic regional indicators. We used the method analysis of issues, synthesis of information, spatial and temporal comparisons and mathematical and statistical methods.

Keywords: competitiveness, region, development, regional disparities

INTRODUCTION

Significant differences in socio-economic level of regions are clearly present the majority of European Union countries, including Slovakia. Balancing these differences is one of the main objectives of regional and structural policy. In Slovakia, the deepening of regional disparities manifested especially after the transition from centrally planned economy to a market economy. Transformation processes are reflected not only in the performance of prosperity and economic entities, but significantly affected the social development, human resources and regional infrastructure. Also they affected the competitiveness of regions. At present, more and more often it denied attention towards monitoring and evaluation of regional disparities. Regional disparities are the result of the differentiated social and economic development in different regions. Differences between regions are becoming more visible to the public view. This is due to the influence of global and regional changes associated with the process of decentralization, strengthening the competencies of local self-government and fiscal decentralization. The concept of regional disparities, it is perceived differently. Precise and universal definition for the definition of regional disparities is not known.In general, we can be defined as the diversity and inequality of characters, events or processes that have spatial location and there are at least two entities territorial

structure. General various domestic and foreign scientific and professional sources for regional development disparity is interpreted as different degrees of social and economic development that create inequalities between the compared units. Matlovič, R., Klamár, R Matlovičová, K., [7] understand regional disparities as "differences in the socio-economic development of regions that are the result of irregularities." Regional disparities are understood as inequality or quantitative differences especially in economic performance, lower utilization of production opportunities available resources and internal potential of the territorial-administrative unit, the difference can be measured against pre-defined economic and social indicators. The influence of market forces, globalization, its paradoxes and "virtualization" process and economic activity is actually natural that concentration is anchored only in selected regions where conditions are ensured, to regional differences may intensify. (Habánik, Koišová,) [4] Gajdoš, P. [1] [2] states that "regional disparities are the product due to several factors, depend on the quality and developing disposable potentials but also different positions from which each region entered the transition process."

Investigating regional disparities and development is one of the conditions for the formulation and implementation of the corresponding regional policy. Regional policy is an instrument of development of individual regions. Regional policy is the framework upon which lays down the rules for resolving territorial, social and economic balance. Attributes of regional policy is to reduce disparities between the levels of development of individual parts of the region, promote economic and social development. Growing disparities between regions are the reason for the implementation of regional policy, which is closely linked to regional development. Regional development can be seen as the process undertaken with a view to improving the quality of life in the region. It is therefore a process of positive changes that are mainly concerned with reducing regional disparities. (Jašková) [6] Regional policy instruments helping lagging regions to achieve the average level of developed regions and increasing the competitiveness of regions. Building regional competitiveness is a long process with the help of the use of local potential and local specificities towards creating a viable and productive region. When defining the factors that determine the competitiveness of the region we can be based on several approaches. According to Porter [8] are the source of competitiveness of nation´s three types of competitive advantages which the members of the economy:

- Oriented economy or cost of production factors,
- Oriented economy to investment,
- Economy geared to innovation.

Porter's competitive advantages pertaining to the national economy can be transferred to the territory or region and considers the possibilities for development of the region. Competitive advantages are impacted by various factors. Still competitive advantages based on natural, respectively tradition created conditions of the country or region. Their influence is primarily mediated by changes in demand. Act on the quantitative side of these changes in the longer term. Dynamic competitive advantages are based more on the supply side in the form of innovation activities, scientific discoveries, technological development and act on the qualitative aspect of the product. Unlike static factors are characterized by increased mobility, and a few are linked to a specific

geographical area. In European countries, it has a regional research related to regional policy long tradition. Slovakia becomes the object of interest, especially as regards increasing regional disparities and the integration process. On the territory of Slovakia is relatively small in the early years of transition did not show significant regional differences. At present, however, the timeliness of regional problems and their solutions increases under the pressure of social and economic problems accompanied by the growth of regional disparities. This is reflected demand from regional development bodies after treatment strategies for regional development because of the coordination of development activities and raising funds from various funds. In order to increase the competitiveness of regions.

The results of several research projects show that regional differences and regional disparities are characteristic of the current state of the situation in Slovakia. On the one hand, they formed developed regions with a predominantly urban structure. It is a territory with big cities, strongly developed Tertiary and Quaternary activities generating a suitable environment for investment activity, a modern social, technical and environmental infrastructure. On the other hand, they formed undeveloped regions, in contrast, act synergistically several factors adversely. We classify the districts with unfavorable parameters limit the potential underserved following the "large" transport infrastructure, with a higher proportion of the rural population, a growing share of the unemployed, underdeveloped and insufficiently diversified economic structure, lower level of education and so on. Disparities significantly affect regional development and they require the application of effective tools and policies to regulate inter-regional differences and the application of new strategies for effective regional development and growth competitiveness.

When analyzing regional disparities requires selection of suitable observational units, the choice of appropriate indicators, selection of appropriate statistical tools and measures enabling space-time comparison. When selecting observational units in the evaluation of regional disparities in Slovakia based on the current territorial division of the Slovak Republic and the breakdown of the tariff statistical units agreed by the Statistical Office and Eurostat, t. j. of regions at NUTS I (the whole territory of the Slovak Republic) and NUTS III (county SR). Regional disparities can be measured through various indicators. Their selection and combination depending on your point of view on the observed problem (other indicators focus geographer, the other economist and sociologist others) and the nature of the research. For the needs assessment of regional disparities in Slovakia In our contribution we have chosen the following indicators: average monthly wage, the rate of registered unemployment and regional gross domestic product. When evaluating the indicators we monitored the developments over the period 2001-2014. In the analysis were used data of the Statistical Office. When measuring regional disparities can use static and dynamic measurement tools. Static tool gives us the ability to measure regional disparities at a certain date. Among the standard static analysis tools include the ratio of maximum to minimum, the coefficient of variation, the weighted coefficient of variation, Gini index, Theil index and Herfindahl index. Dynamic tool used to evaluate historical trends in time series. The most common methods of dynamic analysis include indicators of β-convergence

and σ-convergence. In our contribution we choose instruments from static coefficient of variation and dynamic mechanisms of σ-convergence.

The basic socio-economic indicators that can be evaluated differentiated regional development are the average monthly nominal wage. Average monthly nominal wage was rising (growth) during the reporting period 2001-2014 within the whole country and even in regions. Growth at the regional level was significantly differentiated. This fact is documented by the increase in the value of the coefficient of variation in the period 2001 - 2009 from 0.1699 to 0.2142.

Table 1: Development of average nominal monthly wage in the regions of Slovakia in the years 2001 -2007 (EUR)

The average nominal monthly wage in EUR							
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
region of Bratislava	592	659	723	794	880	972	1046
region of Trnava	402	452	489	538	586	637	695
region of Trenčín	397	435	462	511	546	597	648
region of Nitra	371	418	448	490	526	575	622
region of Žilina	383	424	453	499	545	599	655
region of Banská Bystrica	383	421	449	486	529	582	634
region of Prešov	355	392	416	460	490	530	579
region of Košice	422	475	516	566	607	660	706
coefficient of variation	0,1699	0,1715	0,1835	0,1836	0,1957	0,2007	0,1959
sigma convergence	0,0646	0,0848	0,0696	0,0696	0,0736	0,0752	0,0734
standard deviation	70,2023	78,8337	90,7455	99,6631	115,1998	129,2884	136,7291

Source: author´s calculations based on data from
http://datacube.statistics.sk/TM1WebSK/TM1WebLogin.aspx

The development of values of sigma convergence in the period analysed the trend of the values of the coefficient of variation. Between 2001 -2009 the monitored regions diverge. There are considerable differences in the amount of wages in individual regions to the detriment of the eastern and southern regions of Slovakia. After 2009 due to the outbreak of the financial crisis begins to convergence regions. Reduce the regional disparities in the average wage. This trend, however, has not kept long after 2012 and again beginning to show significant differences between regions. The highest rate of long-term average monthly wage has the region of Bratislava and lowest has Prešov Region (in 2014 the average nominal monthly wage in Prešov is 59% of average monthly salary in Bratislava).

Table 2: Development of average nominal monthly wage in the regions of Slovakia in the years 2008 -2014 (EUR)

The average nominal monthly wage in EUR							
	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
refion of Bratislava	1140	1178	1 160	1 124	1 159	1 182	1 286
region of Trnava	754	752	787	815	831	841	892
region of Trenčín	700	688	732	774	797	809	863
region of Nitra	684	678	707	753	783	782	829
region of Žilina	718	709	759	801	830	820	875
region of Banská Bystrica	688	675	702	756	783	779	837
region of Prešov	632	636	659	697	715	721	767
region of Košice	749	761	792	848	851	855	908
coefficient of variation	0,1963	0,2142	0,1867	0,1488	0,1487	0,1554	0,1641
sigma convergence	0,0731	0,0787	0,0706	0,0583	0,0579	0,0600	0,0629
standard deviation	148,8442	162,7490	147,0423	122,1720	125,4641	131,9090	148,9173

Source: author´s calculations based on data from
http://datacube.statistics.sk/TM1WebSK/TM1WebLogin.aspx

Gross domestic product measured the level of maturity of the economy and the living standards of the population. Regional GDP because of the comparison is converted per capita. This indicator takes into account the effect of commuting to work. This causing that the GDP per capita in the region where people commute to work from other regions is overstated. In the reporting period are the formations of per capita GDP in the regions varied to considerably differently. Regional disparities in this indicator have deepens. It also indicates the increase in the value of coefficient of variation (in 2001 to 0.44 and in 2014 to 0.53 and sigma convergence (in the year 2001 to 0.15 and in 2014 to 017).

Table 3: Regional gross domestic product per capita in regions of Slovakia in the years 2001 -2007 (EUR)

	Regional gross domestic product per capita in EUR						
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
region of Bratislava	14 055,17	15 660,16	17 299,84	19 376,97	22 731,13	24 314,07	27 648,23
region of Trnava	6 510,95	6 920,32	8 007,18	8 995,02	10 034,93	12 642,91	13 960,98
region of Trenčín	6 005,90	6 357,27	7 107,77	7 954,65	8 241,28	9 738,77	10 741,38
region of Nitra	5 396,96	5 853,53	6 663,89	7 550,86	8 261,61	8 885,90	9 678,81
region of Žilina	5 275,64	5 666,08	6 164,01	6 933,10	7 662,33	8 414,42	9 736,59
region of Banská Bystrica	5 369,11	5 984,96	6 609,25	7 053,94	6 703,74	7 705,56	8 663,29
region of Prešov	3 893,25	4 291,62	4 670,29	5 133,10	5 485,45	5 691,80	6 390,69
region of Košice	5 918,24	6 257,71	6 838,88	7 551,38	7 890,21	8 798,03	9 614,61
coefficient of variation	0,446303	0,463718	0,461234	0,467067	0,530005	0,504315	0,515635
sigma convergence	0,1501	0,1524	0,1538	0,156	0,1719	0,1742	0,1756
standard of deviation	2 924,69	3 303,51	3653,04	4118,89	5102	5433,45	6215,63

Source: author´s calculations based on data from
http://datacube.statistics.sk/TM1WebSK/TM1WebLogin.aspx

Table 4: Regional gross domestic product per capita in regions of Slovakia in the years 2008 -2014 (EUR)

	Regional gross domestic product per capita in EUR						
	2008	2009	2010	2011	2012	2013	2014
region of Bratislava	29 251,59	28 897,90	30 270,17	32 386,49	32 493,42	33 679,62	33 895,52
region of Trnava	14 461,19	12 969,16	13 645,74	14 535,60	14 943,83	14 948,43	15 476,79
region of Trenčín	11 442,70	10 448,53	11 103,65	11 482,53	11 823,24	11 855,82	12 130,02
region of Nitra	10 659,41	9 914,74	10 216,40	11 585,53	11 976,05	11 936,22	12 026,63
region of Žilina	10 973,43	10 174,62	10 790,11	11 251,06	11 544,79	11 621,20	12 079,90
region of Banská Bystrica	9 537,70	8 628,46	9 107,76	9 162,53	9 518,85	9 887,56	9 962,87
region of Prešov	7 412,43	6 810,71	7 141,68	7 614,91	7 951,82	8 015,17	8 363,75
region of Košice	10 424,16	9 231,82	9 848,77	10 129,10	10 480,27	10 656,68	10 929,99
coefficient of variation	0,491854	0,539123	0,535516	0,545706	0,527577	0,542575	0,531301
sigma convergence	0,1652	0,175	0,1744	0,1774	0,1727	0,175	0,1723
standard of deviation	6404,1	6541,98	6836,15	7377,1	7302,47	7636,8	7628,52

Source: author´s calculations based on data from
http://datacube.statistics.sk/TM1WebSK/TM1WebLogin.aspx

The unemployment rate is an important economic indicator of major social overtones. The unemployment rate peaked in the Slovak Republic in 1999. From 2000 until 2008, has the downward trend. Since 2009, when the economic crisis has started, unemployment began to rise. A slight decrease in unemployment was recorded only in 2014. This development was significantly regionally differentiated. Points out that the value of the coefficient of variation, which in 2001 was 0,353 and in 2008 was 0.530 (50% increase).

Table 5: Unemployment rate in the regions of Slovakia in the years 2001-2007 (%)

	2001	2002	2003	2004	2005	2006	2007
region of Bratislava	5,79	5,18	3,97	3,39	2,6	2,29	1,98
region of Trnava	15,51	12,99	11,05	8,83	7,15	5,22	4,3
region of Trenčín	12,7	10,91	9,87	8,09	6,8	5,19	4,5
region of Nitra	23,12	21,51	19,07	14,8	11,39	9,09	7,1
region of Žilina	16,38	14,74	13,23	11,12	9,33	7,03	5,55
region of Banská Bystrica	23,59	23,77	22,75	19,5	18,32	16,12	14,1
region of Prešov	23,96	23	19,57	17,5	15,77	13,68	12,05
region of Košice	25,55	24,26	22,16	18,89	17,5	15,18	13,02
coefficient of variation	0,3532	0,3896	0,4126	0,4267	0,4768	0,5256	0,5488
sigma convergence	0,2024	0,2173	0,2384	0,2402	0,2644	0,2724	0,2753
standard of deviation	6,4724	6,6412	6,2763	5,4471	5,2968	4,8489	4,2947

Source: author´s calculations based on data from
http://datacube.statistics.sk/TM1WebSK/TM1WebLogin.aspx

Exactly the same is developed of the sigma convergence value of 0.2 in 2001 to 0.26 in 2008. In terms of unemployment in 2014 Slovak regions can be divided into two groups. Advanced regions of north-western Slovakia (Bratislava, Trnava, Trenčín, Nitra, Žilina), where the unemployment rate is more than 50% lower than in the regions

of south-eastern of Slovakia (Košice, Prešov and Banská Bystrica). Rate unemployment substantial way reflects differentiated regional developments in the Slovak Republic and widening regional disparities that can significantly threaten the competitiveness of individual regions in the Slovak Republic especially in the marginal regions of south-eastern Slovakia.

Table 6: Unemployment rate in the regions of Slovakia in the years 2001-2007 (%)

Unemployment rate (in%)							
	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
region of Bratislava	2,27	4,36	4,63	5,41	5,72	6,17	6,13
region of Trnava	4,29	8,37	8,17	8,88	9,43	9,16	8,03
region of Trenčín	4,95	10,13	9,51	9,95	10,89	10,74	9,56
region of Nitra	7,41	11,72	11,76	13,27	14,08	12,52	11,21
region of Žilina	6,2	10,89	10,86	11,91	12,79	12,51	10,91
region of Banská Bystrica	14,25	19,19	18,86	19,83	20,81	18,26	17,22
region of Prešov	12,86	18,29	17,75	18,95	20,66	19,35	17,45
region of Košice	13,5	17,3	16,78	18,76	19,58	17,23	15,92
coefficient of variation	0,5306	0,3924	0,3847	0,3732	0,3697	0,3295	0,3347
sigma convergence	0,2638	0,2004	0,1915	0,1833	0,1828	0,1577	0,1538
standard of deviation	4,3595	4,9173	4,7281	4,9909	5,2675	4,3644	4,0354

Source: author´s calculations based on data from
http://datacube.statistics.sk/TM1WebSK/TM1WebLogin.aspx

CONCLUSION

At present, has careful attention to issues of regional development. The Slovak Republic is characterized by considerable regional differences between individual regions. Large regional differences are the geography, history, culture, economic development, ethnic composition, religion, age-old cultural. This article deal with the analysis of a selected set of indicators at the regional level describes and analyses the state of the economic environment in individual regions of Slovakia. Results of the analysis show a differentiated development in various areas. Regional disparities, which are exacerbated while existing spatial structure of the Slovak economy, which is inherently unbalanced does not create conditions for effective regional development and thereby are reduces the competitiveness of regions. In the Slovak Republic are particularly marginalized southeast regions of Slovakia (Prešov, Košice and Banská Bystrica). Therefore, it is important mitigate the overall performance disparities between the prosperous West of Slovakia and the economically weaker southeast of Slovakia. One possibility how to contribute to the regional development is interconnection between businesses, educational institutions and local government entities into the purpose-built configurations – clusters. Clusters represent a fundamental organizing framework for understanding local economy in regions and for developing economic performance and competitiveness. One of the effective solutions of regional disparities is support the development of clusters in regions such as Havierniková [5] says: One possibility how to contribute to the regional development is interconnection between businesses, educational institutions and local government entities into the purpose-built configurations – clusters. Clusters represent a

fundamental organizing framework for understanding local economy in regions and for developing economic performance and competitiveness. Regional priorities of the Slovak economics should promote regional competitiveness, removal regional disparities in order to ensure increasing welfare in these regions.

ACKNOWLEDGEMENTS

This paper is part of the solution of grant projects VEGA no. 1/0953/16 Evaluation of the impact of clusters on regional development of the Slovak Republic

REFERENCES

[1] Gajdoš, P. Current state and development of regional disparities in Slovakia (with emphasis on underdeveloped regions). In. Gajdoš, ed. Regional disparities in Central Europe. Sociologický ústav SAV, Bratislava, s. 98-115, 2008

[2] Gajdoš, P. Development of regional disparities in Slovakia - underdeveloped regions. In. Životné prostredie. Roč. 42, č. 1 (2008), s. 21-27. Bratislava: Ústav krajinnej ekológie SAV, 2008

[3] Habánik, J. a kol. Regional Economy and Regional Development. Trenčín, TnUAD, 248 s., 2014

[4] Habánik, J., Koišová, E. Development of socio-economic disparities in regional development of the Slovak Republic. In. Nová ekonomika. Bratislava, NHF EÚ, 2012

[5] Havierniková, K., Strunz, H. The comparison of selected methods used for identification of cluster potencial in the regions of the Slovak Repablic, In. Book Series Titles: International Multidisciplinary Scientific Conferences on Social Sciences and Arts (SGEM 2014), 2014

[6] Jašková, D. The application of some statistical analysis in the assessment of regional development. In. Sociálno-ekonomická revue. Roč. 13, č. 3, s. 142-149, 2015

[7] Matlovič, R., Klamár, R., Matlovičová, K. Development of regional disparities beginning of the 21st century in Slovakia in the light of selected indicators. regional Studies /recenzovaný vedecký časopis/ 02/2008, s. 2-12, 2008

[8] Porter, M.E. Building the microeconomic foundations of prosperity finding from the microeconomic competitiveness index. In. Global competitiveness report 2002-2003. World Economic Forum, 2003

[9] ŠÚ SR (jún 2016): Regionálne štatistiky. [Online] Dostupné na: http://slovak.statistics.sk/wps/portal/ext/themes/regional/

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

RELICS OF FREDERICIAN COLONISATION IN SOUTHERN POLAND AS CULTURAL AND NATURAL TOURIST DESTINATIONS – THE CASE OF THE UPPER LISWARTA RIVER CATCHMENT

Assist. Prof. PhD. Maria Fajer[1]

Assist. Prof. PhD. Robert Machowski[1]

Assist. Prof. Dr. Mariusz Rzetala[1, 2]

Assist. Prof. Dr. Jan Maciej Waga[1]

[1] University of Silesia, **Poland**
[2] Jan Dlugosz University, **Poland**

ABSTRACT

The aim of this paper is to present the possibilities of using cultural heritage sites in nature-rich rural areas and woodlands as tourist attractions. The analysis covers cultural heritage and natural sites present in the upper Liswarta River catchment. From 1740 to 1806 a settlement campaign was underway in the very sparsely populated forest areas in the upper catchment of the Liswarta River. This was supported by the Prussian state and was later dubbed the Frederician colonisation. Frederician colonies were established in wooded areas with poor soils. They were most commonly colonies of woodcutters and pitch burners as well as industrial colonies with forges and smithies. In the catchment of the Upper Liswarta River, traces of past industrialisation can still be discerned – relics of ancient mill races and channels supplying water to numerous smithies as well as levees and old pond basins. The landscape in the area studied still features hydro-engineering structures that were used to lower the water level in the Jezioro lake. The landscape of settlements and villages that were founded as forest colonies is also a relic of the Frederician colonisation in the area. The presentation of local nature and culture as interwoven throughout history opens as yet untapped opportunities for developing new forms of tourism in many rural and woodland areas.

Keywords: relicts of Frederician colonisation, tourist attractions, nature-rich rural areas, woodlands, Oder River basin, southern Poland

INTRODUCTION

Visiting cultural and natural sites is a popular pastime and major magnets for proponents of this type of tourism include woodlands and rural areas located far from cities or popular resorts [1], [2], [3], [4], [5], [6], [7].

The aim of this paper is to present the possibilities of using cultural heritage sites in nature-rich rural areas and woodlands as tourist attractions. The analysis covers cultural heritage and natural sites present in the upper Liswarta River catchment (within the Oder River basin).

In Frederick the Great's time, from 1740 to 1806 (with a peak period between 1770 and 1786), a settlement campaign was underway in the very sparsely populated forest areas in the upper catchment of the Liswarta River. This was supported by the Prussian state

and was later dubbed the Frederician colonisation. Similarly as in Pomerania and the rest of Silesia, it was meant to intensify the agricultural use of land and expand the industry [8], [9]. It also allowed the problem of overcrowding in existing settlements to be solved.

Frederician colonies were established in wooded areas with poor soils and on wasteland. They were most commonly colonies of woodcutters and pitch burners as well as industrial colonies with forges and smithies. Those settlements were usually situated in forest clearings along rivers because of the easy access to water power and wood.

STUDY AREA

The upper Liswarta River catchment is situated within the Oder River basin. The area is largely covered by sandy or sandy and loamy glacigenic sediments as well as aeolian sand covers and dunes. The alluvia have the form of varigrained sands [10]. In the upper Liswarta River catchment, forestry and agricultural types of land use dominate.

The area includes valuable natural environment and numerous historic sites. Villages and settlements are located among the forests. For several centuries, the Liswarta River was the border between Prussia (later Germany) and Poland.

This area has been protected as the "Lasy nad Górną Liswartą" ["Forests of the Upper Liswarta River"] Landscape Park. As much as 63% of its surface is covered by forests, 31% by arable land and 6% by village buildings. The tree stands, which comprise old-growth forest, include diverse tree species. Several nature reserves have been established within the Landscape Park. The landscape is varied with small river valleys, meadows within forests and mires [11].

MATERIALS AND METHODS

The list of villages and settlements that were established during the Frederician colonisation in the upper Liswarta River catchment has been compiled on the basis of written historical sources. In order to analyse changes in the catchment area covered by forest and in the built-up areas of villages and forest settlements, archival maps from the period 1736–1933 were used.

During field studies, relics of the old industry associated with the Frederician colonisation were documented. Monuments of cultural value as well as the landscape of the villages that were former Frederician colonies were analysed as well. Municipal registers of historical monuments were reviewed in order to identify those associated with former German settlement.

RESULTS AND DISCUSSION

In the upper Liswarta River catchment, within the Landscape Park and in its buffer zone, historic monuments associated with German settlement from the period of the Frederician colonisation have been preserved (Fig. 1, Table 1).

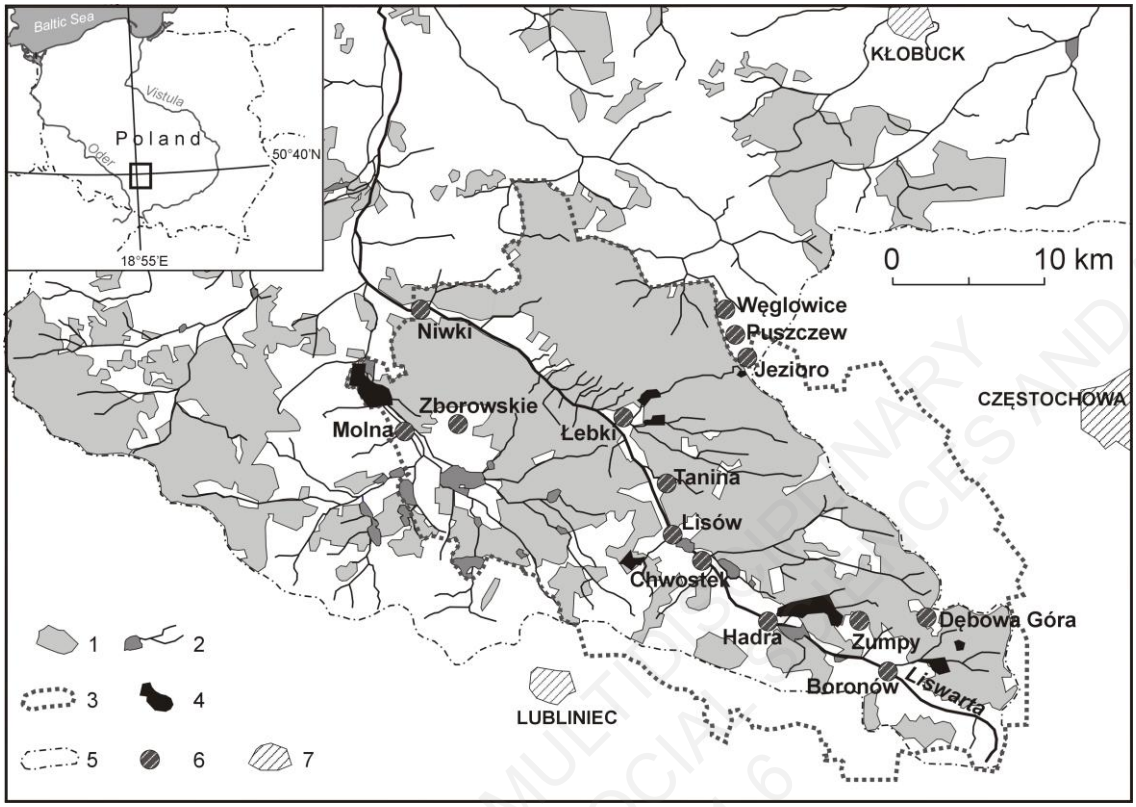


Figure 1. Valuable natural and cultural areas in the upper Liswarta River catchment.
1 – forests, 2 – rivers and lakes, ponds, 3 – boundary of the landscape park "Lasy nad Górną Liswartą" ["Forests of the Upper Liswarta River"], 4 – existing and designed nature reserves, 5 – boundary of the Liswarta River catchment, 6 – villages (the names of the villages mentioned in the text are marked), 7 – main localities (city, town).

Industrial relics from the Frederician colonisation period

In the catchment of the Upper Liswarta River, traces of past industrialisation can still be discerned – relics of mill races and channels supplying water to numerous smithies as well as levees and old pond basins. These are currently on the list of water and wetland habitats that are often used by many rare and protected plant and animal species. Until the 1860s, nine iron smithies operated in the upper reach of the Liswarta River between Boronów and the Brzegi hamlet. Hydro-engineering systems many kilometres long, which were based on mill races or canals that supplied smelters with water, were developed. An example of such a system is the 11-kilometre canal between Tanina and Niwki on the Upper Liswarta River, which was constructed from 1815 to 1820 and used by five smelting plants [12]. Former smelting ponds or their remnants (drained basins, levees) have also been preserved.

An example of a mining settlement from the Frederician colonisation period is the Zumpy village. It was founded as a settlement for the miners who worked in the nearby iron ore mine. Mining industry relics include spoil tips (Photo 1) and traces of drift openings and also of the open ditch that carried underground water away from the mine. The iron ore mined there was transported to nearby smelters in Boronów and Chwostek on the Liswarta River and to Brusiek on the Mała Panew River [13]. Mining and metallurgical traditions in the area are highlighted on information boards.

Table 1. Selected examples of villages in the upper Liswarta River catchment established as Frederician colonies.

Village / settlement	German name of the colony	Establishment date [1]	Original function	Monuments from the Frederician colonisation period [2]
Węglowice	Kolsdorf	1770–1780	Forest settlement (of woodcutters and charcoal burners)	Former "Kirchhof" evangelical cemetery from the end of the 18th century
Puszczew	Helsdorf	1770–1780	Forest settlement (of woodcutters)	Village layout
Kolonia Lisów	Liebsdorf	1770–1780	Forest settlement	Village layout
Kolonia Hadra	Neu Hadra	1770–1780	Smelting settlement	Village layout
Dębowa Góra	Dembowa Gora	1774	Forest settlement	Shrines
Zumpy	Sumpen	1770–1780 1845?	Mining settlement	Village layout; 19th-century residential buildings; small shafts where iron ore used to be mined
Łysa Góra	Lissengora	1770–1780	Forest settlement	Village layout
Molna	Mollna	1755	Smelting settlement	Former evangelical cemetery from the 18th and 19th centuries.

[1] Source of information: Borek, 1989; [2] Municipal Records of Monuments (2016).

In 1753, during industrial development on the upper reach of the Liswarta River, a ceramic pipe factory was established in Zborowskie under the auspices of the Prussian King Frederick II the Great. German settlers worked there [14]. The extant building of this oldest pipe factory in Poland is included in the Silesian province industrial monument route.

The landscape of settlements and villages that were founded as forest colonies is also a relict of the Frederician colonisation in the area. Between 1795 and 1806, the Węglowice and Puszczew colonies (originally bearing the names of Kolsdorf and Helsdorf) were established in the study area, among others. Inhabitants of those settlements performed services for nearby steel mills, clearing forests and producing charcoal. In the late 18th and early 19th centuries, forest colonies such as Dębowa Góra, Łysa Góra and Kolonia Lisów were established as well.

More attention should also be paid to the preserved historical village layouts and old historical buildings, e.g. in Zumpy and Zborowskie (Photo 2). In villages and settlements, historical layouts or their remnants can still be seen. The landscape in the area features roadside shrines and crosses, and burial sites such as e.g. the old Evangelical cemeteries in Węglowice and Molna.



Photo 1. Mining industry relic – spoil tip in Zumpy (Photo: J.M. Waga).



Photo 2. Historic, 19th-century house in the former mining colony Zumpy (Photo: J.M. Waga).

Natural values

One of the most interesting and most valuable natural sites in the upper Liswarta River catchment is the Jezioro lake, which is situated in the middle of a forest and surrounded by a mire (Photo 3). In the past, the area of the lake was twelve times the present one. However, in order to use littoral land with its silty bog soils for agricultural purposes and for digging peat, former colonists lowered the water table by about 1 metre [10]. The local landscape still includes the hydro-engineering facilities used to control the water level in the Jezioro lake. Therefore it both a natural and cultural site to some extent. In 1996, the mire vegetation community and marshy coniferous forest present there were designated an ecological site – "Bagno w Jeziorze" ["Marsh in the Lake"]. The Jezioro Lake is the only natural lake in southern Poland outside mountainous areas, to have functioned continuously since the Pleistocene. The record of environmental change in the Late Vistulian (Weichselian) and Holocene is preserved in the deposits and landforms around the lake [10]. The rich fossil material, including pollen and macro-sized plant remains, demonstrates that the accumulation of deposits in the Jezioro Lake has continued ever since its beginning in the Late Glacial period [10]. The lithological record found in the sediments, which is continuous since the Younger Dryas, makes this site important for the history of the Holocene in southern Poland and possibly also beyond this area [10].



Photo 3. Jezioro Lake (Photo: M. Fajer).

There are more such places where human economic activity made its mark and was subsequently discontinued. An example here may be the former industrial areas in Zumpy. In their vicinity, there are valuable natural sites: the "Łęgi i grądy koło Zump" ["Riparian forests and oak-hornbeam forests near Zumpy"], which are to be protected as

a forest reserve, and the "Łąki z mieczykiem koło Zump" ["Gladiolus meadows near Zumpy"], which are to be protected as an ecological site.

The most valuable *Taxus baccata* stands in the region, which are protected as the "Cisy nad Liswartą" ["Yews on the Liswarta River"] and "Cisy w Łebkach" ["Yews in Łebki"] forest reserves, are also present in the area in question.

CONCLUSIONS

The upper Liswarta River catchment has considerable landscape values. Tourist attractions include valuable landscape park forests and villages and settlements that feature relics of Frederician colonisation, including Zumpy, Kolonia Lisów and Dębowa Góra. Potential tourist sites include underestimated remnants of the former iron ore smelting industry located on the Liswarta River (e.g. Boronów, Chwostek, Tanina).

In this case, sightseeing, natural and cultural tourism may also include elements of historical tourism.

Modified existing or newly created tourist routes could highlight relics of the Frederician colonisation and its contemporary impact on nature. The areas that were altered by human activity in the past and later abandoned were subject to natural rehabilitation and now are very valuable, protected sites.

The study area lies at a distance of 20 to 80 km from major cities (Częstochowa, the Upper Silesian urban agglomeration), which is conducive to promoting short-stay and weekend visits – by car as well as walking or cycling trips, and even horse riding trips in certain sections of the route.

The upper Liswarta River catchment is an area with considerable potential for developing tourism focused on both natural and cultural sites.

The presentation of local nature and culture as interwoven throughout history opens as yet untapped opportunities for developing new forms of tourism in many rural and woodland areas.

REFERENCES

[1] Referowska-Chodak E., Tourism and recreation in forests within the Natura 2000 areas – legal, financial and ideological aspects. Sylwan, vol. 154, 2, Poland, 2010, pp 117-123.

[2] Chen B.X., Nakama Y., Thirty years of forest tourism in China. Journal of Forest Research, vol. 18, 4, Japan, 2013, pp 285-292.

[3] Krpina V., Spanjol Z., Jazbec A., The role of forests and forestry in tourism and nature protection in the Zadar county area. Sumarski List, vol. 138, 5-6, Croatia, 2014, pp 271-281.

[4] Matilainen A., Lahdesmaki M., Nature-based tourism in private forests: Stakeholder management balancing the interests of entrepreneurs and forest owners? Journal of Rural Studies, vol. 35, England, 2014, pp 70-79.

[5] Tyrvainen L., Mantymaa E., Ovaskainen Y., Demand for enhanced forest amenities in private lands: The case of the Ruka-Kuusamo tourism area, Finland. Forest Policy and Economics, vol. 47, SI, United States, 2014, pp 4-13.

[6] Carballada A.M., Forests and tourism: Forest tourism in Galicia. Documents d Analisi Geografica, vol. 62, 1, Espania, 2016, pp 79-109.

[7] Soroka A., Mazurek-Kusiak A., Wojciechowska-Solis J., Hawlena J., Importance of forest resources in health tourism – Wigierski National Park case study. Sylwan, vol. 160, 1, Poland, 2016, pp 64-70.

[8] Borek H., Kolonizacja fryderycjańska na Górnym Śląsku w odbiciu nazewnictwa miejscowego. Studia Śląskie, XLVII, Poland, 1989, pp 21-52.

[9] Greiner P., Historia gospodarcza Górnego Śląska (XVI-XX w.). In: J. Bahlcke, D. Gawrecki, R. Kaczmarek (eds.): Historia Górnego Śląska. Polityka, gospodarka i kultura europejskiego regionu. Dom Współpracy Polsko-Niemieckiej, Gliwice, Poland, 2011, pp 309-338.

[10] Fajer M., Waga J.M., Rzetala M., Szymczyk A., Nita M., Machowski R., Rzetala M.A., Ruman M., The Late Vistulian and Holocene evolution of Jezioro Lake: a record of environmental change in southern Poland found in deposits and landforms. Journal of Paleolimnology, vol. 48, Netherlands, 2012, pp 651-667.

[11] Plan ochrony Parku Krajobrazowego „Lasy nad Górną Liswartą". Instytut Ochrony Środowiska, Poland, 2013, www.bip.wozniki.pl

[12] Fajer M., Zmiany krajobrazu doliny Liswarty w ostatnim tysiącleciu uwarunkowane gospodarczą działalnością człowieka. In: Doliny rzeczne. Człowiek – Krajobraz – Przyroda. Prace Komisji Krajobrazu Kulturowego PTG, vol. 7, Poland, 2007, pp 219-227.

[13] Gołąbek D., Dawne hutnictwo i górnictwo w okolicy Boronowa. Rada Gminy Boronów, Boronów, Poland, 2004, pp 1-47.

[14] Tyrol J., Nad Liswartą i Potokiem Jeżowskim. Dzieje miejsc i ludzi. Foliant, Lubliniec, Poland, 2002.

[15] Municipal Records of Monuments [Gminne Ewidencje Zabytków] (2016): http://www.wreczyca-wielka.pl, http://www.boronow.pl, http://herby.bipgmina.pl/; Accessed 20 June 2016.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS

RESEARCH OF A LEVEL OF COMMUNICATIVE ACTIVITY AS A FACTOR OF ORGANIZATIONAL DEVELOPMENT OF BUSINESS SYSTEMS

Evgenia Krivokora

North-Caucasus Federal University - Institute of Economics and Management, **Russia**

ABSTRACT

We research not only communicational resources of the organization, but influence of level of their use on competitive line items and possibilities of business systems development. It is known that communicative activities are built densely in business processes and often predetermine performance of the last. We believe that the binding objectives, coordination of economic interests, a combination of organizational values, coordination of actions of specific business units are carried out by exploiting their communicational resources.

The research concept consists in establishment of influence on effective interaction of partners of an activity rate of their communication activities. The cooperated forms allow to take additional incomes in the form of excess profit which source are cumulative inventories of the communication equity of the partner organizations. At the same time highly competitive organizational systems differ considerably in bigger degree of communicative activity.

We believe that the most acceptable way of an assessment of extent of influence of communicative factors on a condition of the organization is the matrix form constructed on the basis of coordinates of activity and intensity. The matrix allows to identify as a first approximation dependence of the organization on communication processes. Besides, application of a matrix of communication organization development gives the chance to accurately establish a vector of change of a condition of the organization by means of activization of its communication resources. Depending on types of activity and the markets in which it operates, communicative activity and communication intensity are various. Communicative activity is expressed in initiation of interactions, and communication intensity characterizes productivity of the established connection. Thus, it becomes possible to receive the complex vision of results of organizational development which is spread out to quantitative and high-quality parameters. Use of a matrix of communication development is seen in two directions: first, in diagnosing of level of communication development, and, secondly, in strategic management by the organization. The strategic aiming of the offered tool is realized in its capability to designate options of transformational shifts by scanning communicative organization activity.

It has been studied the opinions of focus groups, representedby the management team, the most important partners and non-management staff of several industrial and commercial companies in the North Caucasus Federal District of the Russian Federation, which showed a rather mixed picture concerning the communicative activity. Besides, data on the level of satisfaction with the external and internal communications giving an idea of the directions of transformation of business systems for the purpose of increase in their organizational effectiveness taking into account a

satisfaction factor have been obtained. Degree of satisfaction with interaction, as communicative reaction to joint activities, acts as a significant condition in decision making.

Thus, development of processes of interactions relies on management of the communicative factors and resources of business systems playing the leading role in acceptance of effective management decisions regarding potential opportunities of organizational development.

Keywords: communication, communication management, communicational resources, communicative activity, communicative intensity, the level of communicative development.

INTRODUCTION

Successful interactions of economic agents allows them to succeed in competitive struggle and to take leading positions in the market. In this respect value of communications in the 21st century has significantly exchanged. In modern conditions strategic communication tasks were modified, communicative space of business agents is reconstructed, interaction mechanisms are transformed [1,2,3,4,5,6].

Communicative activities of economic agents assume that they not just react to information signals of the market, but are actively positioned in the communication environment, use information and even perform purposeful information impacts, accumulating communicative resources [7,8,9].

Of course, any organizational systems have certain contradictions, however, despite their existence, they are united by unity of interest, a community of target reference points, a clear understanding of the place in an economic system. Similarity of all-organizational values is fastened with joint activities in a value creation chain, participation in various associations and associations that provides the high level of mutual understanding and trust between them.

Therefore, having the powerful communication equity based on unity and mutual trust, uniformity of formal rules of economic cooperation and domination, highly competitive organizational systems differ considerably in a bigger activity rate of communication activities.

Basic changes in interaction mechanisms at the organizational level inevitably set system of management in motion and require its adequate reorganization of the principles, forms and methods of management of communicative activity of the organization [10]. This problem is solved in a set of the researches conducted both in developed countries and in Russia. Especially it is actual for the Russian business systems which significantly are lagging behind on quality of management foreign.

MATERIALSANDMETHODS

The conducted research has been aimed at clarification of extent of influence of communicative activity on efficiency of functioning of the organization and quality of its management. Within this conceptual provision the experimental part of research was carried out for establishment of nature of dependence between the level of development

of communications and productivity of business, between sensitivity of business to communications and satisfaction with them. The structure of the polling questionnaire was created taking into account features of external and internal communications.

RESULTS

The experimental block of development of a problem is constructed on questioning of three various focus groups formed from among senior and middle managers, non-managerial staff of a number of industrial and commercial enterprises operating in the North Caucasus Federal District, and their business partners. Survey results are stated below.

Regarding external communications of the companies of idea of development of communications and the level of satisfaction with their condition and productivity the generalized assessment of a management of the companies and their key partners significantly differ (figure 1 – the I focus group and the II focus group). Partners of communication with the partner company estimate more crucially, than a management of these entities. As for compliance of sensitivity of business to communications and degree of their business impact, enough consensus (figure 2) is received.

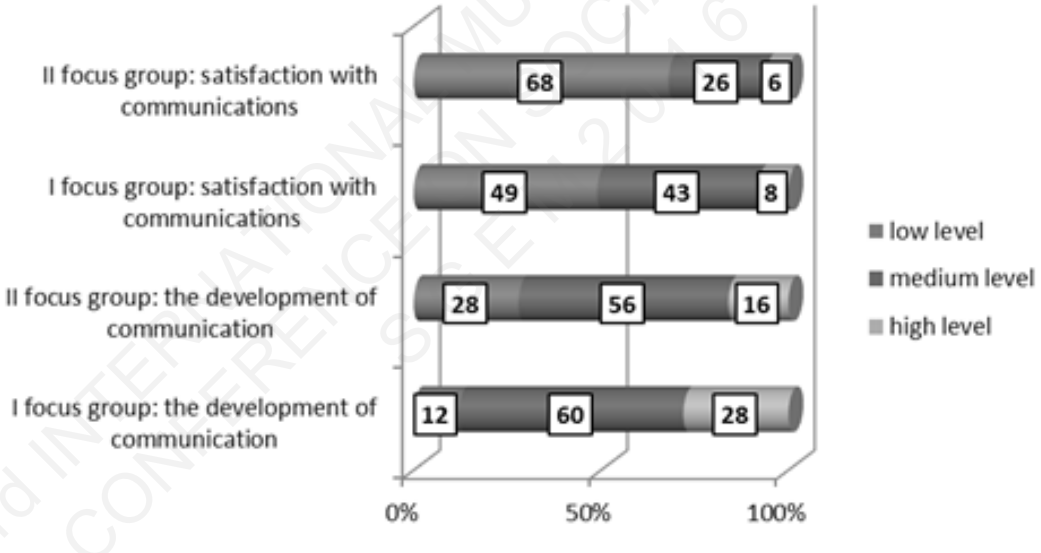


Figure 1. Assessment of the development of external communication

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

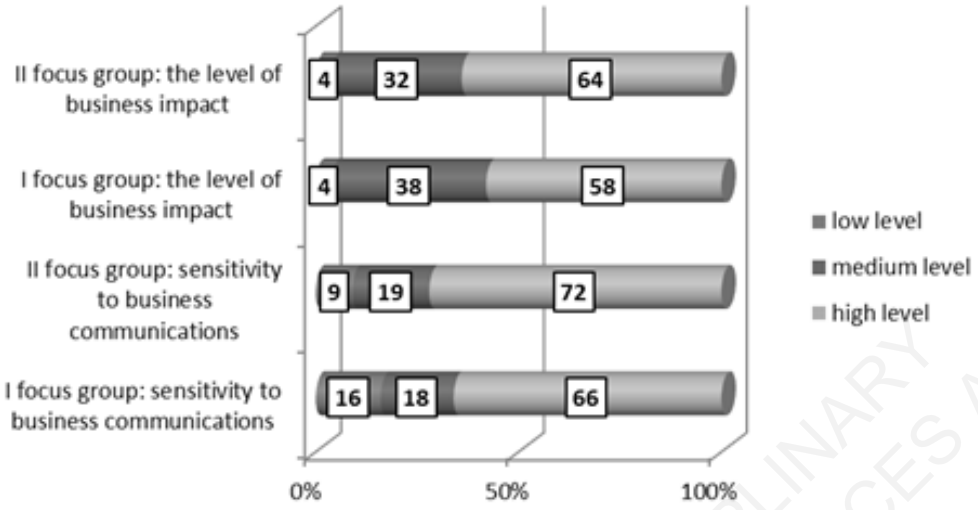


Figure 2. Evaluation of the impact of external communications on business

Handling of results of an assessment of a condition of internal communications of the companies has shown a notable gap in opinion of an administrative board (the I focus group) and non-managerial personnel (the III focus group). From the data given in figure 3, a gap fluctuates as on development of communications: low level was noted by 57% and the average level of 37% of ordinary structure and respectively a 22% and 61% of heads, and on the level of satisfaction with communications: low level was noted by 38% and the average level of 51% of ordinary structure and respectively a 12% and 59% of heads.

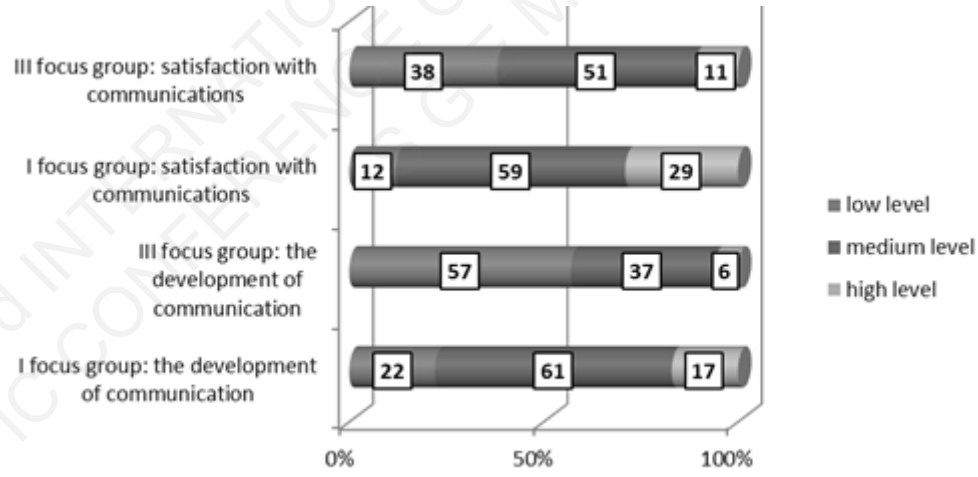


Figure 3. Evaluation of internal communications development

The result of an assessment consists in empirical confirmation of interdependence of communicative activity and competitiveness of the companies. Accordingly, the solution of a task of determination of level of communicative business systems development on the basis of an assessment of their communicative activity should be respectively evidence-based.

DISCUSSION AND CONCLUSION

It is undoubted that each organization differs in the level of communicative development. Depending on types of activity and the markets in which it operates communicative activity and communication intensity are various. Communicative activity is expressed in initiation of interactions, and communication intensity characterizes productivity of the established connection. Thus, by means of the concepts offered above it becomes possible to receive the complex vision of results of organizational development which is spread out to quantitative and high-quality parameters.

We believe that the most acceptable way of an assessment of extent of influence of communicative factors on a condition of the organization is the matrix form constructed on the basis of coordinates of activity and intensity. Cells of a matrix allow to identify as a first approximation dependence of the organization on communication processes. Besides, application of a matrix of communication development of the organization gives the chance to accurately establish a vector of change of a condition of the organization by means of activization of her communication resources [11].

In our vision, the matrix of communication organization development should reflect not only capacity of influence, but also potential organizational transformations in case of its change. Figure 4 demonstrates a view of the offered communication matrix [11].

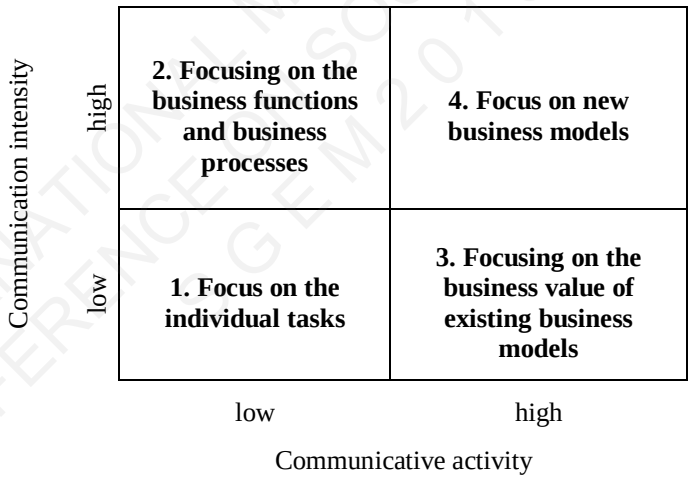


Figure 4. Development of the communication matrix organization

Low level of communicative activity and communication intensity reflects weak degree of dependence of the organization on communication factors. The organization is mainly oriented to increase of management efficiency due to automation (computerization), cost control and control of performance indicators. Growth of communication intensity while preserving low communicative activity mainly promotes increase of management efficiency through integration of the organization when all internal resources of the organization are mobilized and amplify, performance of structural divisions and employees by means of improvement of their interaction grows. Increase in communicative activity in case of the low level of communication intensity

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SCIENCE CONFERENCE SGEM2016

generally provides growth of quality and management efficiency due to active work with a business environment and integration with suppliers and consumers in a single chain. High level of communicative activity and communication intensity characterizes strong dependence of the organization on the level of involvement of communicative resources. Management is preferably directed to improvement of quality through creation of the new business models reconstructing organization activity by change of forms of business.

Use of a matrix of communication development is seen in two directions: first, in diagnosing of level of communication development, and, secondly, in strategic management by the organization. The strategic aiming of the offered tool is realized in its capability to designate options of transformational shifts, scanning communicative organization activity. It is possible to allocate several ways of movement of the organization in the development set by its communicative level [11]:

– transformation of methods and instruments of management;

– transformation of a chain of value creation;

– transformation of a product;

– transformation of competitive advantages;

– business transformation.

Change of system of management in case of activization of communicative resources can be performed in the following options [11]:

–accumulating and transferring of knowledge for improvement of business processes;

– application of difficult models in the analysis of business processes;

– redesign of business processes.

– leaving from an excessive rutinization of processes;

– a growth in volumes of the disaggregated information;

– application of electronic methods of partner interaction and in the organization forex change of information;

The value creation chain in a general view shows how the product or service is created, its transformation can lead to the following changes [11]:

– change of the production technology of production;

– simplification of a chain of value creation by a conclusion of unnecessary intermediaries;

– production automation;

– change of sequence of business processes and transition to parallel implementation of several processes;

– organization of tracking change of characteristics of controlled business processes;

– structurization of processes in routines;

– economy of costs at the expense of a rutinization of transactions and reducing mistakes;

– integration of a chain of value.

Potential transformation of a product can be expressed by the following options [11]:

– change of essence of products, its consumer value;

– change of information component for the consumer about a product;

– change of communication intensity in a value chain.

Transformation of competitive advantages of the organization at the expense of communication sources can be presented in the form [11]:

– differentiations and changes of scales of the competition;

– changes of methods of sale of a product;

– use of network relations;

– customer acquisition to accomplishment of expensive transactions;

– developments of cross-industry cooperation.

Transformation of a business system can be characterized [11]:

– modification of the existing business model;

– expansion of borders of application of the existing business model;

– emergence of new business models.

Thus, the choice of strategy of organizational development based on communication sources is proved more accurately.

In a general result, a communicative resource of organizational system as the key factor of its development has the certain potential of the expressed communicative nature leading to transformation of organizational system in general without building-up of resource base.

REFERENCES

[1] Conrad, C.& Marshall S. P. Strategic organizational communication: In a global economy. John Wiley & Sons, USA, 2011.

[2] Cheney, G., et al. Organizational communication in an age of globalization: Issues, reflections, practices. Waveland Press, USA, 2010.

[3] Mumby, D. K. Organizational communication: A critical approach. Sage Publications, United Kingdom, 2012.

[4] Shelby, A. N. Organizational, business, management, and corporate communication: An analysis of boundaries and relationships.Journal of Business Communication, USA, vol. 30 (3), pp 241-267, 1993.

[5] Kuhn, T. A communicative theory of the firm: Developing an alternative perspective on intra-organizational power and stakeholder relationships. Organization studies, United Kingdom, vol. 29 (8-9) , pp 1227-1254, 2008.

[6] Miller, K. Organizational communication: Approaches and processes. Nelson Education, Canada,2014.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
INTERNATIONAL MULTIDISCIPLINARY
SGEM 2016

[7] Mumby, D. K. Reframing Difference in Organizational Communication Studies: research, pedagogy, and practice.Sage Publications,United Kingdom, 2010.

[8] Putnam, L. L., & Nicotera, A. M. (Eds.). Building theories of organization: The constitutive role of communication. Routledge,United Kingdom, 2009.

[9] Jones, E., Watson, B., Gardner, J., & Gallois, C. Organizational communication: Challenges for the new century. Journal of Communication, USA, vol.54, no. 4, pp 722-750, 2004.

[10] Krivokora, E. Potential of written communication in the development of communication activity of a business organization. Journal of Language and Literature, Azerbaijan, vol. 6, no. 4, 2015.

[11] Krivokora, E. Influence of communicative activity of organizational system for the development of its competitive advantages. Economics and Management, Russia, vol. 6, pp 112-118, 2008.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

RESEARCH OF THE ECONOMIC GROWTH OF THE REGION ON THE BASIS OF THE TURNPIKE THEORY: MODELS AND PRACTICAL APPLICATION

Prof. Dr. Yulia Vertakova

Assoc. Prof., PhD. Yulia Polozhentseva

Assoc. Prof. PhD. Maria Klevtsova

South-West State University, **Russia**

ABSTRACT

Development of world economic system is based on the trajectory of economic growth, which is characterized by a development crisis. Therefore, the study on the development of the economic system based on the turnpike theory allows to justify the development prospects of the trajectory of economic growth. Exploring the turnpike you can identify the most developed regions, as well as an economic location of regions on the highway.

The aim of the study is an analysis of the main turnpike theory models to justify the models basic directions of economic growth.

The methodological basis of the research served as a model of Neumann and its modifications, based on linear technology in the analysis of technological processes and coefficients of its intensity. The study also applied statistical methods and comparative analysis of countries by level of development of basic macroeconomic indicators.

Achieving stable economic growth of any economy is a priority, so the effective rationale for the direction of development is needed, which based on the calculated tool paths on the basic models of the turnpike theory, where the proportions of the production indicators are unchanged, and the indicators themselves grow up with the constant best possible pace. Today, in the context of globalization of world economy and the formation of a new kind of society - information society, mathematical models have become a powerful tool for forecasting the evolution of civilization that allows you to determine the optimal turnpikes of economic development.

The result of the research is application of turnpike theory in practice, determination of the level of economic development of the regions, creating a graphical display of regions on the turnpike, creating of regions ranking by a combined indicator and identifying region-reference level that has reached its highest development indicators.

The practical significance of the research is based in the fact that the authors justified the trajectory of regions development through the application of the turnpike theory and the prospects for economic growth regions.

Keywords: economic growth, turnpike theory, models, macroeconomic indicators

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS 2016

INTRODUCTION

The formation of the global economic system is carried out in conditions of uncertainty of external environment, prone to crises and sanctions restrictions; therefore, economic growth is an important condition for effective economic development of the regions. A stable economic growth of the regional economy allows to determine not only in the distant future, but in the period of pre-emption the effectiveness of a particular economic state of the model, its competitiveness and resilience to external factors. Economic growth of the territories should be combined with the social stability of the population, which, in turn, involves the solution of a series of balanced social goals: increase life expectancy, improve the level of education and culture, rationalization of consumption, etc.

Economic growth is the most important problem of economic life and allows to understand the causes of differences in living standards and economic growth between different countries in the same period of time (variation across countries) and within countries at different time periods (measurement differences); to develop public policies for the promotion and acceleration of economic growth [5].

For developed and developing countries currently, there is a need to increase economic growth and to find ways of its achievement on the basis of the activation of the competitive advantages, including access to the trunk development path.

Main path of development of regions - this trajectory of economic growth, where the proportion of production figures unchanged and the figures are growing with a constant maximum possible rate. In other words, a trunk is a path or a ray of maximal balanced growth in the region, providing sustainable development of the economic system.

The founder of the theory of manifolds is the American mathematician John Von Neumann, who proposed to consider the model of economic growth based on consumption and expressed this dependence by means of mathematical functions. Theorems on lines proven for a number of optimization models of an expanding economy. The most common of them is the famous theorem of Radner for nonlinear models the extension. To obtain practical results on the model of John Von Neumann also used the dynamic model of Leontief.

The practical application of this theory was developed by McKenzie, Morishima [4], and Radner [6]; also models of the theory of lines were modified by such scientists as Ramsey [7] and, more recently, by Cass [1], Koopmans [2], and Malinvaud [3].

RESULTS

The global economic crisis, is causing a decline in economic activity of most countries, prove the importance of the study of economic growth based on the theory of arteries. On the one hand we have the main model and on the other the optimization. The study of the relations between the backbone and the optimal trajectories is the subject of main theory. You can say that the main theory is one means of qualitative analysis of optimal trajectories.

To achieve the above and other objectives aimed at increasing economic growth, it is necessary to implement two stages:

1. The increase in GDP growth rate for output on the main trajectory (or ray Neumann) corresponding to the maximum growth rate possible;
2. "Movement" on the highway to set targets.

Based on the analysis of the theory of arteries optimal trajectory consists of three parts:
1. The output of the historically determined initial vector, which reglamentary the whole nature of economic growth in the country in this area;
2. approaching the highway, which is also the trajectory of the maximum constant proportional growth, this site is the main lamentational model;
3. avoiding the highway, subject to the objective function, which depends only on the last period of the time interval of the model.

Usually in the main theorems maximized as a function of the amount of Goodies in time where the utility at any given point in time depends only on current consumption. The outstanding American economist P. Samuelson in the first half of the XX century was marked by the inadequacy of such functions in explaining some empirical facts. The disadvantage of the method of proof, which is based on spectral analysis, is that it is not applicable to non-stationary models. Method another American economist K. Iwai simultaneously draws on ideas of dynamic programming and actively uses the stationarity of the model. The work of these economists, to reduce the requirement for additivity in one-product stationary models, was included in the fundamental review on the main theory L. Mackenzie.

Highways in economic theory possess the following important properties:
- over time, any optimal trajectory is close to the highway;

- for the original model, you can specify any criterion, the maximum value which can be achieved only when the coincidence of the trajectory of development and highways. This criterion enables to evaluate the deviation of the actual state from the optimal, and the solution of practical problems enables us to justify and calculate the ratios of economic efficiency of use of factors of social production;

- easiest line to calculate from the point of view of the complexity and the dimension of the set targets.

Macroeconomic indicators characterize the development of the economy indicate economic growth or recession, that is to say that macroeconomic indicator of the development of the region is a measure of the socio-economic sphere of the region.

Economic growth is a long - term trend of increasing real GDP. Between the pace and improve the quality of economic growth, there is a certain relationship. In some cases, high rates of economic growth not accompanied by a corresponding increase in quality. Conversely, low rates of economic growth can improve the quality of life. Therefore, many economists believe that currently more efficient to have a low (2-3% annually), but sustainable economic growth.

Consequently, the growth estimate must consider not only the quantitative increase in the volume of production GDP but also the quality of growth, including such characteristics as the improvement in the structure of GDP, the degree of satisfaction of

SCIENTIFIC CONFERENCE 3RD INTERNATIONAL INTERDISCIPLINARY

growing needs of the population and improve other indicators of socio-economic progress of society.

Russia occupies first place in the world by the territory, the transformation of its regions in a self-governing territory, in the Central part of the market economic system, as well as a consistent reduction of the role of the sectoral principle of management in the course of reforming of economy has led to the growing importance of regions as object of study. We carried out dynamic analysis of GDP in several countries (table. 1).

Table 1 – Gross domestic product countries, billion dollars

Country	2011	2012	2013	2014	2015	$T_{p2015/2011}$, %	$T_{пр2015/2011}$, %
China	13810	15154	16468	17961	19392	140,4	40,4
USA	15518	16155	16663	17348	17947	115,7	15,7
India	5845	6256	6796	7411	7965	136,3	36,3
Japan	4389	4547	4695	4767	4830	110,0	10,0
Germany	3472	3558	3630	3748	3841	110,6	10,6
Russia	3227	3398	3498	3577	3718	115,2	15,2
Brazil	2974	3082	3218	3276	3192	107,3	7,3
Indonesia	2172	2345	2516	2686	2842	130,8	30,8
France	2438	2488	2545	2591	2647	108,6	8,6
England	2317	2375	2454	2569	2679	115,6	15,6

According to the results of the comparative analysis of GDP of Russia and the leading countries on this indicator we can formulate the following conclusions:

- in terms of GDP high positions of China and US GDP 19392, 17947 billion. accordingly, the Russian Federation takes the 6th place (3718 billion. in 2015) of global share of GDP of 3, 28%;

- during the review period (2011-2015) there has been a steady growth of Russia's GDP, total GDP growth over 5 years is 15.2 %. The most dynamic growth for 2011-2015 have been reported in China (40.4 per cent) and India (36, 3%);

- 15 countries-leaders have 69, 24% of the global GDP, while the share of other countries is 30, 76%.

The highest rates of growth in industrial production observed in China, but for the period 2011 – 2015 is their reduction from 13% to 7% (table. 2). In 2011, among most countries was the dynamic growth of industrial production, which declined in subsequent periods. Concerning the Russian Federation it should be noted a gradual decline in the growth rate of industrial production, which in 2015 reached a negative value (-3,5%).

Table 2 - Growth rates of the industrial production volume, %

Country	2011	2012	2013	2014	2015
China	13,0	7,9	7,7	7,3	7,0
USA	4,1	0,0	2,5	2,8	3,0
India	4,8	0,0	0,9	3,8	2,8
Japan	-3,5	0,0	1,0	2,0	0,7
Germany	8,0	0,0	-0,3	1,3	1,5
Russia	5,0	2,6	0,1	0,6	-3,5
Brazil	4,0	-0,3	3,0	-1,5	-5,0
Indonesia	4,1	0,0	4,3	4,9	4,5
France	2,4	0,0	-0,4	-2,0	0,5
England	-1,2	0,0	-0,3	2,4	1,8

Summing up the analysis of the world situation in the Russian Federation it is possible to speak about positive tendencies of growth of GDP (15.2 per cent), negative growth rates of industrial production (-3,5%), a significant increase in the rate of inflation (15.4 per cent), reducing the rate of growth of exports and imports (-35,3% -39,1%).

The study of business activity, cyclical and short-term fluctuations as the national economy level, and regional level is an essential component of economic analysis in modern conditions. Experience the world of research shows the importance of the diagnosis of changes in economic growth on the basis of models of the theory of arteries. The implementation of this approach largely determines the possible directions of changes in the national business cycle countries.

When solving problems of analysis of directions of development of economic processes has to consider unique features. First, the factors (parameters) that define the direction of development of the economic process can be interrelated. Second, it is sometimes impossible to separate the impact of the existing factors that are not amenable to combining in a single model. Therefore, the analysis of changes in the direction of the vector of economic development it is necessary to select the appropriate measurement tool for assessing the degree of influence of factors on the formation direction of the vector using its angular and coordinate parameters.

The authors performed an analysis of the vector backbone according to the GDP of Russia and GRP of Germany (as one of the leading and consistently growing economies in the world, and same with Russia the growth rates of the main macroeconomic indicators). The main mathematical apparatus of the research used elements of the theory of vector algebra to describe any vector in a multidimensional Euclidean vector space of n parameters of the ROV uses the following quantitative characteristics and parameters: the length of the vector L, its projection P on the coordinate axis XI and the

angles of the trends among AI vector and its projections on the respective axes orthogonal (mutually perpendicular) coordinate system.

The parameters of the model to quantify the parameters of any vector, including economic development, can be represented as follows. The length L of the vector (based on the Pythagorean theorem in Euclidean space):

$$L = \sqrt{(P_1)^2 + (P_2)^2 + \ldots + (P_A)^2} \quad (1)$$

The values of the cosines of the angles AI between the projection s P on the axis of coordinates of the vector can be pre put in the form:

$$\cos \alpha_i = \Pi_i / L, \quad (2)$$

$$\text{then } \alpha_i = \arccos \Pi_i / L, \quad (3)$$

$$\alpha_0 = \sum_{i=1}^{n} \alpha_i \quad (4)$$

Where a_0 — is the resultant angle, the sum of the angles on the boards of α_i.

These ratios are necessary to detect population-specific reference values of the vector over which to assess the vector in the future.

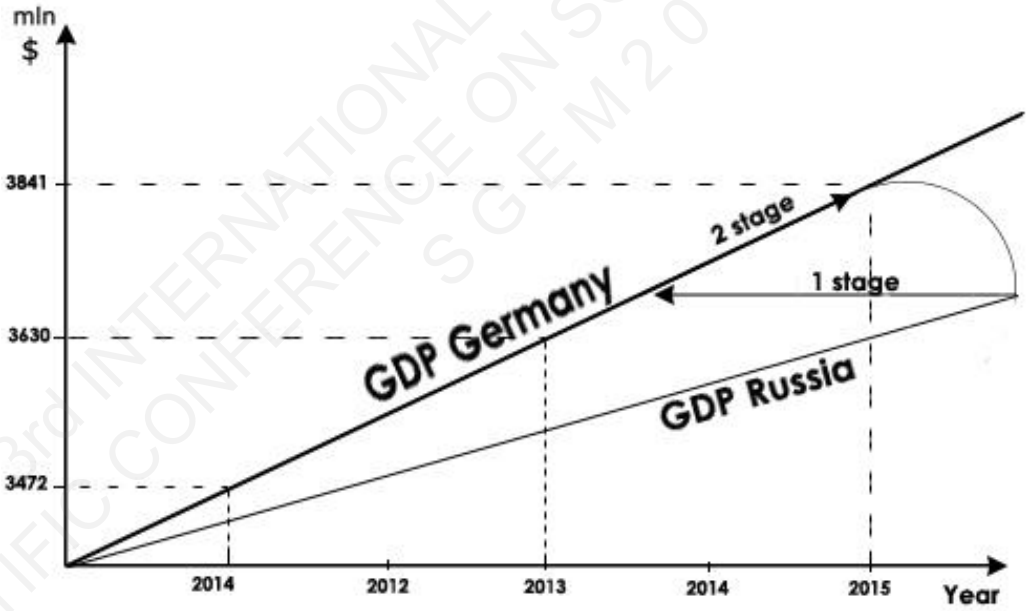


Figure 1 The main turnpike (P) of Russia's development

Stage 1 - Drop the perpendiculars from the GDP of Russia and GRP of Germany, to Russia's GDP is made up of GRP Germany need to change the angle of inclination;

Stage 2 – using the Pythagorean theorem find the direct GDP of Russia and GRP of Germany.

The figure 1 shows that Germany's GDP is growing more rapidly, so we take its development for the highway to Russia. The difference between them shown on the highway R. to increase of Russia's GDP it is necessary to increase production, it is necessary to increase investment. Thus, theorems on the highway describe the properties of invariance of optimal paths extreme dynamic problems in relation to the target functionality and the choice of the most optimal trajectory.

Management of economic growth in Russia should be built on the basis of three scenarios, depending on the level of development of each region and the rate of change of the economic structure.

In the implementation of innovative scenario requires the use mainly of tools combining technical-technological and organizational-economic aspects of management:

- public investment in upgrading the technological base of companies performing research and development; in the creation of new institutions that perform research and development on priority directions of scientific researches;

- the state program of training personnel engaged in research and development.

When implementing a simulation scenario at the Federal level, it is necessary to use the following tools: the state order for the production of high-tech products; public investment in industrial site for the production of goods under the state order; concessions; interest rate subsidies on mortgage loans.

At the regional level, the tools should be more "soft" and insert:

regional techno-innovation centers; fair advanced manufacturing technologies; marketing in the market of foreign advanced technology; PR regional industries and technologies; initiation and mediation in the negotiations for export and import of technologies;

- investments in material base of organizations engaged in research and development; training of staff engaged in research and development; the material basis of educational institutions of higher and secondary special education;

- sharing with foreign Universities, the development projects of higher education.

In the implementation of the inertial scenario control should be with the involvement of a wide range of instruments, primarily socio-economic and organizational-economic plan: investments, programs, subsidies. The General thrust of the Toolkit is to ensure social stability and increased activity of the population and economic entities.

CONCLUSION

Thus, based on the analysis of economic growth of various countries implemented the theory of mainstream development as the basis of a trajectory of sustainable growth.

1. Naturally, the translation of the economic system on the main the pace of development in the same way as the transition to the specified destination, requires an external effort in the form of investments, and perhaps not a one-time, and distributed in time. For complex multi-sectoral economic systems from the investor and requires more knowledge, in what proportions, the investment should be distributed in the subsystems or sectors. The answers to such questions can be obtained considering the management of economic systems from the standpoint developed in the theory of optimal control and calculus of variations, systems theory and systems analysis.

2. Any management implies a control object (managed system), subject control (control system) and the external environment. The main purpose of the control system is to support established and for any properties recognized normal operation of the control object, and also to ensure the normal functioning of separate elements of object of control under the impact of the external environment. The object of control in the interaction with the control system forms a closed control system. Connection with which the control system affects the object of control is called feedback. The automatic control theory is called the control function management of the program.

3. In General, models of economic dynamics even at constant technological capabilities theorems on the highway are not met. For their implementation it is necessary to introduce additional assumptions about the properties of the original model of the economy. Another way is to study the actual industry proportions and compared them with the main ones. Thanks to technological progress and variation in time of public preferences of various goods, real state of the economy at the detailed (disaggregated) it always differs significantly from the main. At the same time, as shown by obtained in this direction the results of studies at high levels of aggregation of economic proportions close to the main.

ACKNOWLEDGEMENTS

Research is executed on the basis of the Russian President's grant on the state support of the leading schools of sciences Scientific School-9726.2016.6 "Implementation of the state economic policy by means of development of instruments of strategic and indicative planning"

REFERENCES

[1] Cass D Optimum Growth in an Aggregative Model of Capital Accumulation: A Turnpike Theorem, Econometrica, 34, 1966, pp. 833-850

[2] Koopmans T. On the Concept of Optimal Economic Growth," Pontificae Academia Scientiarum Scripta Varia, 28, 1965, pp.225-300

[3] Malinvaud E. Croissances Optimales dans un Modele Macroeconomique,"Pontificae Academia Scientiarum Scripta Varia, 28,1965, pp.301-378

[4] Morishima M. Proof of a Turnpike Theorem: The No Joint Production Case, Review of Economic Studies, 28,1961,pp. 89-97.

[5] Vertakova Y., Polozhentseva Y., Klevtsova M. The Development of Regional Cluster-Oriented Policy: Russian and Foreign Practice, International Multidisciplinary Scientific Conferences on Social Science & Arts. (SGEM 2014) Conference on Political Sciences Law, Finance Economics & Tourism. Conference Proceeding Vol. 1. Bulgaria, 2014, pp. 399-406,

[6] Radner R. Paths of Economic Growth That Are Optimal with Regard Only to Final States," Review of Economic Studies, 28, 1961, pp. 98-104.

[7] Ramsey F. A Mathematical Theory of Savings, Economic Journal, 38, 1928, pp. 543-559

RESEARCH ON FARM SIZE AND ECONOMIC POTENTIAL OF THE VINE-GROWING FARMS IN THE WESTERN OF ROMANIA

Assoc.Prof.Dr. Alina Georgeta Dobrei [1]
Prof.Dr. Alin Dobrei[1],
Assoc. Prof.Dr. Eleonora Nistor[1],
Assoc. Prof. Dr. Dorin Camen[1], Assoc.
Prof.Dr. Ion Chisaliţă [1],

[1] Banat University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara, **Romania**

ABSTRACT

The research was made in four different wine growing areas from west of Romania: Recas, Buzias -Silagiu, Minis-Maderat and Moldova Noua-Tirol, which are traditional viticultural centres with different climatic conditions and different structure of vine-growing farms. The aim of the paper was to study the farm size of new plantations, assortment of varieties, establishment operating costs, and gross profit per hectare.
From Recas were analyzed four vineyards, six vineyards were study from Buzias-Silagiu, three vineyards from Minis-Maderat and three vineyards from Moldova Noua -Tirol. Technical data were taken from the new plantations establishment projects, which were approved by the Department of Agriculture, while data about management were taken from the farms accounting. The results show a major difference concerning the average size of the farms; in Recas there are large vineyards, at Buzias-Silagiu and Moldova Noua-Tirol were established medium and small sizes vine-growing farms, while at Minis-Maderat vineyards are small-size. Regarding wine grape varieties, at Recas, Minis-Maderat and Moldova Noua -Tirol, predominate red wine varieties, while at Buzias-Silagiu, varieties for white wines are most common. New grapevine plantations establishment costs, were lower in Recas and Buzias and much higher at Minis-Maderat and Moldova Noua-Tirol. Operating costs and profit were different from one plantation to another; the most profitable vine-growing farm was Recas.

Keywords: economic performance, costs, profitability, income, wine-growing farm

INTRODUCTION

Establishment of vineyards is complex, expensive and is based on very comprehensive studies that concern many issues (environment and climate conditions, cultural practices, training system, type of vineyard planting, land organization, local legislation, etc.), which are different among farmers and regions. Terroir is different from one area to another, and determines a certain structure of the vineyards that enabling business efficiency (4). Farm size, wine grape varietal and technologies should be correlated with natural conditions of each vineyard taking into account the traditions from each area (2). In the past, when manual-only labour was used in vineyards management, has been an inverse relationship between grape yield and farm size (11). After years, due to the combination of manual with mechanical works, Townsend et al. (14) in a study made in South Africa vineyards concluded that relationship between productivity and farm size

is week. Nowadays, the efficiency of vineyards exploitation is higher because mechanization increases, from floor management to pruning and harvesting (6). But not only technology is changing. According to Eurostat Data, in many European countries, vineyard area in the last 25 years decreased with 35% in Portugal, with 10 to 20% in France and Italy and with less then 10% in Spain, Germany, and Greece. However, even many vineyards disappeared because no longer produce grapes, the average size of grapevine farms has increased (3).

MATERIAL AND METHOD

The research was carried out in the most important four viticultural area from the west of Romania, with high solar radiation, water resources, specific soil type to each area, although geographically are not very distant from one to another.

Recaş grape-growing region is located at 20-30 km north-east of Timisoara, and is distinguishable by high quality wines, with controlled designation of origin - red and white- derived from universal and local varieties. Well known for high quality aromatic white wines is the viticultural area Buziaş-Silagiu located in Timis County, near the Buzias town. Miniş-Măderat grape–growing region is situated 20 km east of Arad and includes viticulture areas Minis and Maderat. The area offers some of the most favorable conditions in the world for red wines especially for Cabernet Sauvignon and Cadarca. Moldova Noua -Tirol viticultural area is situated 30-40 km west of Resita town, from Caraş-Severin. The area is known for the quality of its wines, mainly due to favourable environmental conditions and appropriate soils for grapevine growing. The main varieties cultivated on around 58 ha are Riesling, Sauvignon Blanc and Merlot. During research were analyzed: the size of new established vineyards in these viticultural areas, the establishment and operation costs, wine grape varietals and economic outcomes. From each viticultural area were analysed different size- typical farms: from Recas four farms, from Buzias-Silagiu six farms, three farms from Minis-Maderat and three from Moldova Noua-Tirol. Each farm received a generic name. Technical details of grape-growing farms establisment were taken from the technical projects approved by the Department of Agriculture from each region, and economic data were taken from the accounting of each grape-growing farm.

RESULTS AND DISCUSSIONS

In Recas, vineyards are large-scale farms (Table 1), mainly due to the possibility of grouping the land in large farms. The four farms totalling 967 hectares of land, with the smallest vineyards of 10 ha and the largest of 810 ha. In vineyard 1R are planted mainly wine varieties, amongst which, red wine varieties occupies a total area of 412 ha, respectively 50.8%, white wine varieties occupy up to 375 hectares, or 45.7%, while table grape varieties have a low share of only 3.5%. From 78 ha planted with wine varieties, in 2R vineyard, red wines varieties make up the majority of 59% while white wines varieties share was of 41%. In 3R vineyard the type of wine varieties was pretty the same: 56.6% red wine varieties and 43.4% white wine varieties, respectively. The forth vineyard (4R) has only 10 hectares planted entirely with red wine grapes. Overall, in Recas grape-wine farm and winery, wine grape varieties hold the largest share of

97.2%, with red wine grapes varieties occupying 52.5% of the land and white wine grape varieties 432 hectares (44.7%).

Table 1
The grape farm size and grape varieties in Recas region

Vineyard	Area (ha)	Wine grape varietals					
		Grapes for fresh consumption		Grapes for white wines		Grapes for red wines	
		S (ha)	%	S (ha)	%	S (ha)	%
Recas I	810	28	3.5	370	45.7	412	50.8
Recas II	78	-	-	32	41	46	59
Recas III	69	-	-	30	43.4	39	56.6
Recas IV	10	-	-	-	-	10	100
Total	967	28	2.89	432	44.7	507	52.5

In Buziaş-Silagiu (Table 2) were surveyed six grape-wine farms with an area between 4.54 ha and 71 ha. In this region, due to the division land given back to the owners in the 1990', could not be established large farms, most of them having medium size. Grape – growing farms analyzed have a total of 213.04 ha of which 13.5 ha planted with table grape varieties, 110.37 ha planted with white wine grapes and 89.17 hectares planted with red wine grapes varieties. Excepting Buzias VI farm, in this region, white wine flavoured varieties are dominant, ranging between 50 and 65.8%, while red wine grape area ranging between 34.2% and 47.8%. In this region table grape for fresh consumption have a reduced share of only 6.3%.

Table 2
The grape farm size and grape varieties in Buzias-Silagiu region

Vineyard	Area (ha)	Wine grape varietals					
		Grapes for fresh consumption		Grapes for white wines		Grapes for red wines	
		S (ha)	%	S (ha)	%	S (ha)	%
Buzias I	46	1	2.2	23	50	22	47.8
Buzias II	20.5	-	-	13.5	65.8	7	34.2
Buzias III	66	12	18.2	36	54.5	18	45.5
Buzias IV	4.54	-	-	2.37	52.2	2.17	47.8
Buzias V	5	0.5	10	2.5	50	2	40
Buzias VI	71	-	-	33	46.5	38	53.5
Total	213.04	13.5	6.3	110.37	52	89.17	41.7

In Minis – Maderat region (Table 3), difficulties due to the small land plots resulted in establishment of small farms with an area ranging between 3.35 and 21 ha. In Minis were analyzed three farms totalling 35.35 ha. Red varieties have the highest share of 68.3%, which is explained by very favourable terroir for these wines, competing with the most famous wine regions in Europe (Bordeaux, Bourgogne). Wines produced in this region are recognized and appreciated for their balance and anthocyanins content (5). The white wine varieties have in Minis region only a 28.9% share.

SCIENTIFIC PAPERS 3rd INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON AGRICULTURAL SCIENCES AND ARTS

Table 3
The grape farm size and grape varieties in Minis region

Vineyard	Area (ha)	Wine grape varietals					
		Grapes for fresh consumption		Grapes for white wines		Grapes for red wines	
		S (ha)	%	S (ha)	%	S (ha)	%
Minis I	21	-	-	7,2	34,3	13,8	65,7
Minis II	3,35	-	-	-	-	3,35	100
Minis III	11	1	7,1	3	27,3	7	63,6
Total	35,35	1	2,8	10,2	28,9	24,15	68,3

In Moldova Noua-Tirol newly established vineyard farms are medium size with an area between 34 and 66 hectares. Favourable climatic and environment conditions for red wines led to a share of 60% from total planted area. In all three analyzed farms, red wines have the highest share between 47.1% and 63.6%. White wines have a share of 35.3% from the whole area, while table grape varieties for fresh consumption account for 4.7%.

Table 4
The grape farm size and grape varieties in Moldova Noua-Tirol region

Vineyard	Area (ha)	Wine grape varietals					
		Grapes for fresh consumption		Grapes for white wines		Grapes for red wines	
		S (ha)	%	S (ha)	%	S (ha)	%
Tirol I	60	-	-	22	36,6	38	63,4
Tirol II	66	1,5	2,3	22,5	34,1	42	63,6
Tirol III	34	6	17,6	12	35,3	16	47,1
Total	160	7,5	4,7	56,5	35,3	96	60

In Table 5 are summarized: establishment costs, production costs and gross profit per hectare on average in each grape-wine region. For correct interpretation, it is mentioned that analyzed grape-growing farms were established in close periods, among 2008 - 2010, being now in full maturity.

Table 5
Financial data concerning growing grapes in new established vineyards

Grape-growing farm	Establishment costs Euros/ha	Production costs Euros/ha	Gross profit Euros/ha
Recas	15325	1920	2350
Buzias-Silagiu	15970	2180	1635
Minis	15830	2250	1750
Moldova Noua-Tirol	16725	2350	1890

The lowest costs ratios for the establishments were made in the viticultural area Recas, and are due both to a favourable land, easier to prepare, and to farms size that create favourable conditions for negotiations with suppliers of equipment and service providers.

In Buzias-Silagiu and Moldova Noua-Tirol grape-growing areas, establishment costs were quite similar, with about 500-600 Euros per hectare more than in the viticultural area Recas. These expenses are due both to the more sloped land that requires higher costs with preparation, as well as materials and services acquired at higher price.

The higher establishment costs were in Minis-Maderat viticultural area, with about 1,000 Euros more than at Buzias-Silagiu and Moldova Noua-Tirol, and with 1400 Euros per hectare more than in Recas. Differences exist also in the case of annual production costs per hectare, the lowest being recorded in Recas, and the highest in Minis-Maderat.

In other viticultural area from all over the world, the situation is quite similar. A study in Cabernet Sauvignon cultivated in eight farms from five countries (Spain, France, Italy, Australia and South Africa), reveal a high difference concerning production costs and gross profit. Four farms from Spain, France, Italy and South Africa produce the grapes at a cost between 325 Euros/t and 400 Euros/t, while the other half from total of eight reach production costs from 800 Euros/t in France to 1,040 Euros/t in Australia. With the same yield, the gross profit was different due to the output price from 287 to 500 Euros/t because the quality of grapes and consumer preferences from each region strongly influence the profitability (13).

In a large study concerning farms scale, Delord et al. (3) were in doubt if large-scale vineyards are more efficient than the smaller ones. Area of typical farms and grape yields vary in large limits across producer countries. In Spain Airen local cultivar for white wine produced 4.5 t/ha, while Chenin Blanc local variety from South Africa reach 25 t/ha yield (13).

In Italy, normal farms have an area between five ha, while in Spain are much larger, of 130 ha. Usually in each farm are cultivated international varieties like Cabernet Sauvignon, Merlot, Shiraz, Chardonnay, but also local varieties (Sangiovese in Italy, Tempranillo in Spain, Riesling in Germany, etc), (13).

Concerning the gross profit, Retallack (10) analysed Murray Valley Wine region vineyard economic benchmarking data for nine seasons. Vineyards surveyed size ranged from 4 to 189 ha. Results shows that the average gross income steadily decline from 2002/2003 to 2010/2011 season, from $18,000/ha to $5,203/ha, due to the reduced vine yields and grape prices. The overall cost of production also declined from $12,000/ha in 2002/2003 to $7,148/ha in 2010/2011 season, which means that vineyards did not generate gross profit.

Compared to Romanian vineyards, in Virginia (USA), Martinelli et al. (9) estimated the costs for a new vineyard establishment to $15,000/acre. In Cameros vineyards from Napa County, land preparation costs for establish a vineyard was of $10,075/acre, total planting costs were of $3,872 while the income /acre from production was $4,000 and net profit/acre above total cost $2,491 (7).

For establishment and producing Pinot Noir grapes in Western Oregon, total costs in the first year were of $11,401 per acre. Beginning with four-year gross income exceeds variable costs with $383 per acre. The annual deficit of the vine at full production was of $3,842 per acre (8). In Ontario- Canada, total costs for a Cabernet Franc vineyard establishment were of $12620 and for Chardonnay of $12620 (12). In Finger Lakes Region of New York, total costs for Pinot Noir, Cabernet Franc, Chardonnay and Riesling vineyards establishment, vary from $5,490 to $5,568/ acre by variety, while the

gross income varies from $4,125 to $4,930/ acre depending upon variety (15). In Moraga – California, vineyard establishment cost for Pinot Noir and Chardonnay varieties was of around $23,566/acre. Yearly revenues for a Pinot Noir vineyard in 10-year period based on yield and the selling price of $1865/t, varied from $1,865.00 to $8,392.50/ acre. For Chardonnay vineyard, yearly revenues based yield and price of $1755/ t were amongst $1,932.50 to $4,638.00/acre (1).

CONCLUSIONS

Although viticultural areas analyzed are relatively close geographically, they are still different concerning grape varieties, the size of farms, and economic and financial indicators.

In Recas vineyards, grape varieties for red wines and white wine varieties recorded relatively close percentages of land in line with the area's natural resources.

The sloped land from Minis-Maderat and Moldova Noua-Tirol, limestone soils and favourable climatic conditions for red wine varieties, make them to be dominant in the structure of farms, while at Buzias are predominate aromatic white wine grape varieties.

The division of the properties determined the size of the viticultural area; in Recas was possible to group the land in large areas, which enabled the establishment of the large grape growing farms. In Miniş-Maderat this land grouping was more difficult, the majority of farms being small.

Mainly the type of relief, and the size of farms influenced establishment costs per hectare of grape-growing farm; larger farms can negotiate better prices for merchandise and services.

Annual costs of production are influenced mainly by pedological factors that influence and affect the mechanization of maintenance works. Less manual work is required the production costs are lower.

REFERENCES

[1] Bruzzone V.J., Feasibility and economic viability of establishing a wine grape vineyard in Moraga, California, Degree Bachelor of Science, pp. 29-35, 2012.

[2] Carpio C.E., Safley Ch.D., Barclay Poling E., Estimated Costs and Investment Analysis of Producing and Harvesting Muscadine Grapes in the Southeastern United States, HortTechnology, vol. 18 no. 2, pp. 308-317, 2008.

[3] Delord B., Montaigne É., Coelho A., Vine planting rights, farm size and economic performance: do economies of scale matter in the French viticulture sector? Wine economics and policy**,** vol. 4, Issue 1, pp. 22–34, 2015.

[4] Dobrei A., Sala F., Savescu I., Kocis E., Mustea M., Researches regarding viticultural exploitations size, production directions and varieties assortment cultivated in Romania's west region, International scientific meeting: „Multifunctional agriculture and rural development" (II), December 6-7th, NoviSad, 2007, pp.406-412.

[5] Dobrei A., Poiana M., Sala F., Ghiţă A., Gergen I., Changes in the chromatic properties of red wines from Vitis vinifera L.cv. Merlot and Pinot Noir during the course of aging in bottle, Food Journal of Agriculture & Environment, Helsinki, Finland, vol.8, no.2, Print ISSN 1459-0255, Online ISSN 1459-0263, pp.20-21. 2010.

[6] Gaeta D., Corsinovi P., Economics, Governance, and Politics in the Wine Market: European Union Developments, Springer, Business & Economics, ISBN: 978-1-137-39849-9, 2014, pp. 79-84.

[7] Jan Hyde Ch., Budget analysis for a Napa County vineyard, Project for Degree Bachelor of Science, pp.24-25, 2010.

[8] Julian J.W., Seavert C.F., Skinkis P.A., VanBuskirk Ph., Castagnoli S., Vineyard Economics: Establishing and producing Pinot Noir wine grapes in Western Oregon Extension Service Bulletin EM 8969-E, pp. 5-6, 2008.

[9] Martinelli D.A, Stribling K.L., Brubaker C.C., Cost and profitability analysis of Virginia vineyards and wineries, Virginia Department of Agriculture and Consumer Services, pp.14-16, 2015.

[10] Retallack M., Economic benchmark for the Murray Valley wine region for season 2010/2011, pp. 14-17, 2012.

[11] Sen A., An Aspect of Indian Agriculture. Economic Weekly. Annual Number 14 (4-6), pp. 243-246, 1962.

[12] Slingerland K., Molenhuis J., Establishment & Production Costs for Grapes in Ontario, Economic Report, pp. 5-19, 2009.

[13] Strohm K., Dirksmeyer W., Garming H., International Analysis of the Profitability of Wine Grape Production, Academy of Wine Business Research, 8th, International Conference, Geisenheim, Germany, Conference Proceedings, ISBN 978-3-00-047628-0, 2014, pp. 83-94.

[14] Townsend R.F., Kirsten J., Vink N., Farm size, productivity and returns to scale in agriculture revisited: a case study of wine producers in South Africa, Agric. Econ., vol.19, pp.175–180, 1998.

[15] Yeh A.D., Gómez M.I., White G.B., Cost of establishment and production of V. Vinifera grapes in the Finger Lakes Region of New York, pp. 17-21, 2013.

SCIENTIFIC CONFERENCE 3rD INTERNATIONAL MULTIDISCIPLINARY SCIENCES AND ARTS

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

RESEARCH ON THE INFLUENCE OF FOLIAR FERTILIZERS UPON THE PRODUCTION OF HERBA IN HYSSOPPUS OFFICINALIS ON SANDY SOILS

Dr. Milica Dima[1],

Dr. Reta Drăghici[1],

Dr. Drăghici Iulian[1],

Dr. Elena Ciuciuc[1],

Assoc. Prof. Dr. Mariana Niculescu[2]

[1]Plants Crops Research and Development Center on Sandy Soils – Dabuleni, **Romania,**

[2]University of Craiova. Faculty of Agriculture, Craiova, **Romania**

ABSTRACT

Hyssoppus officinalis is a medicinal plant with numerous uses in the medicine.

In view of its cultivation on south Oltenia sandy soils, there were carried out in the period 2014-2015, at the CCDCPN Dabuleni, experiments aiming to point the most suitable of foliar fertilizers to ensure high yields a hectare.

There was studied the influence of some foliar fertilizers on a basal dressing of N50P50K50 and N100P100K100.

The highest yields were obtained in the variant which was used Codicevo foliar fertilizer applied to basal dressing of N100P100K100.

Keywords: medicinal plant, sandy soils, production.

INTRODUCTION

Hyssopus officinalis is an herb that is used all its vegetative mass (Herba Hyssopi) because of its therapeutic attributes conferred by this essential oil. Having the carminative, diuretic and antiseptic effect, it is used in respiratory disorders, bronchitis, asthma [1,2,3,5].

The plant is loving light and heat compared with high demands. During cold winters withstand temperatures down to -30^{0}C, if the soil is covered with snow. [1,3]. There is a species with outstanding claims against moisture and soil and can be used to fix mobile sands. [1,4], which prompted the initiation of experiments to establish key technological elements in this culture, on arranged sandy soils in the south of Oltenia .

Fertilization is one of technological measures with major effect on increasing yield per unit area.

Foliar fertilization can help mitigate drought effects, a phenomenon with increased incidence in recent years, ensuring the normal plant nutrition. Applying foliar fertilizers helps to improve nutrient utilization coefficient.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL MULTIDISCIPLINARY PARTICIPATION SOCIAL SCIENCES AND ARTS

In this paper are presented results regarding to the influence of foliar fertilizers on the production of volatile oil herba and hyssop.

MATERIAL AND METHOD

Experience was located on sandy soils, poor in nutrients stocked with a humus content of 0.2-0.4%. Experimental plot was done on the field after the subdivided parcels method with two factors. It was studied the influence of foliar fertilizer (factor B) with graduations: b1-unfertilized foliage, b2-Algomax 0.5% , b3-R 321, HUM 1%, b4-Solar Green 0,1%, b5- Codicevo 0.6%, b6- Maturevo 0.6% imposed on 2 agrofunds (factor A): a1-N50P50K50, a2- N100P100K100. NPK fertilizers were applied fall to the ground founding culture, and in the following years were applied in early spring.

Foliar fertilizers were applied in vegetation in two phases: early spring and after the first harvest. There were two harvestings per year, cutting all the branches to a height of 10 cm from the ground.

During the growing season they were made on flowering observations and measurements, waist plant, harvest and production weighed on the variant.

Calculation and interpretation of the data were performed using analysis of variance.

OBTAINED RESULTS

Hyssop flowering took place between June 20 to 23.

The results of observations on the effect of foliar fertilizers on waist hyssop plants that the application of foliar fertilizer during the vegetative growth of the hyssop plant determined on their height differences. Thus, we can find that both, the agrofund N50P50K50 and the N100P100K100 for the foliar unfertilized variants the hyssop plant size was between 28-30 cm and for the foliar fertilized variants was between 30-32 cm on the agrofund N50P50K50 and 32-36 cm on the agrofund N100P100K100.

Biometric measurements show a waist plant that can reach up to 36 cm for the variant in which treatments were applied Algomax 0.5% on the agrofund N100P100K100, 34 cm version which was applied in Solar Green 1%.

Algomax acts at the beginning of growth, it contains the auxins that stimulate the growth and root fixing.

Solar Green is a complex liquid fertilizer that completes the need of nitrogen and trace elements in phenophases of the nitrogen maximum consumption, reducing the leaching of nitrogen and water nitrification.

Table 1. Biometric measurements during the vegetation period hyssop

Agrofund applied	Foliar fertilizer applied	Date blooming	Plant size (cm)
N50P50K50	Foliar unfertilization	20.06	28
	Algomax 0,5%	20.06	32
	R 321, HUM 1%	20.06	32
	Solar Green 1%	22.06	34
	CodicEVO 0,6%	22.06	30
	MaturEVO 0,6%	23.06	31
N100P100K100	Foliar unfertilization	22.06	30
	Algomax 0,5%	22.06	36
	R 321, HUM 1%	22.06	33
	Solar Green 1%	20.06	34
	Codicevo 0,6%	22.06	32
	Maturevo 0,6%	22.06	32

The average results obtained during the experiments and presented in figure 1 show that the production of herba recorded higher values compared to foliar fertilization variants without having no applied foliar fertilizer.

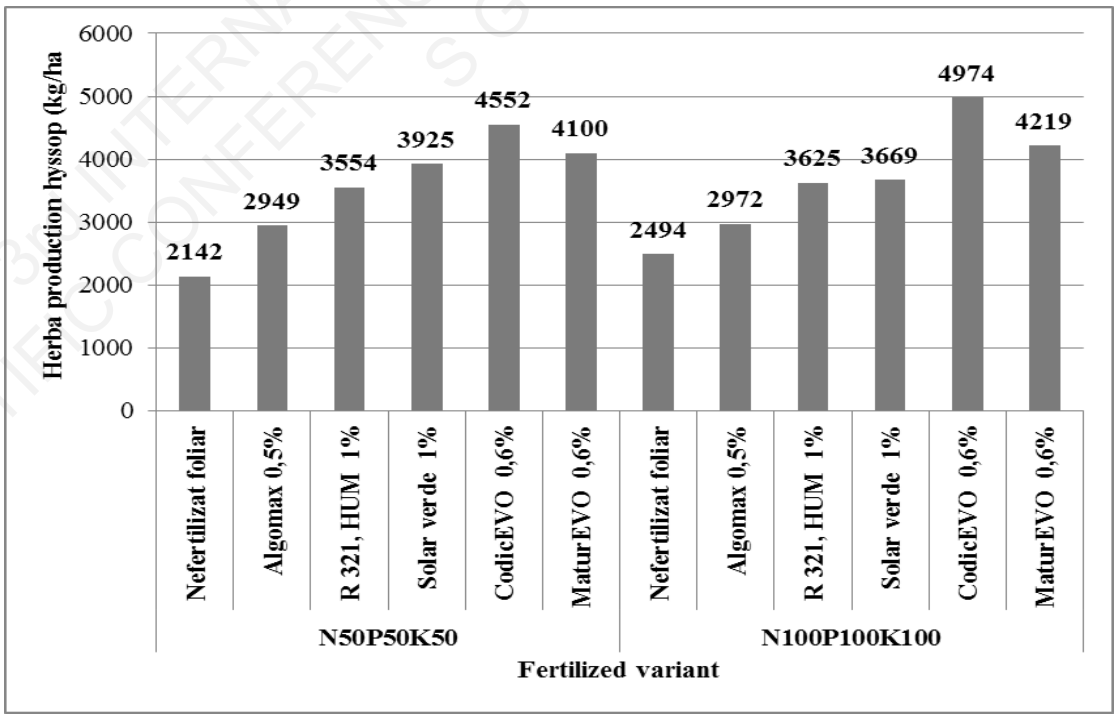


Fig.1 The influence of interaction (agrofond x foliar fertilizer) on the production of hyssop herba

The observations on the harvested crop for hyssop show that it was noted the highest herba production of 4974 kg / ha variant receiving 0.6% Codicevo on the agrofund of N100P100K100 resulting an increased production of 2480 kg / ha compared to the unfertilized variant controlled with foliar fertilizers.

All the tested foliar fertilizers ensure the production increases ranging from 807-2410 kg / ha, compared to unfertilized on the agro N50P50K50 and 478-2480 kg / ha compared to unfertilized on the agro N100P100K100.

If Herba hyssop production quality under the influence of foliar fertilizers the results show the highest content of essential oil of 43.5 l / ha or 40.2 l / ha application of fertilizer Codicevo 0.6% on the two used agrofunds .

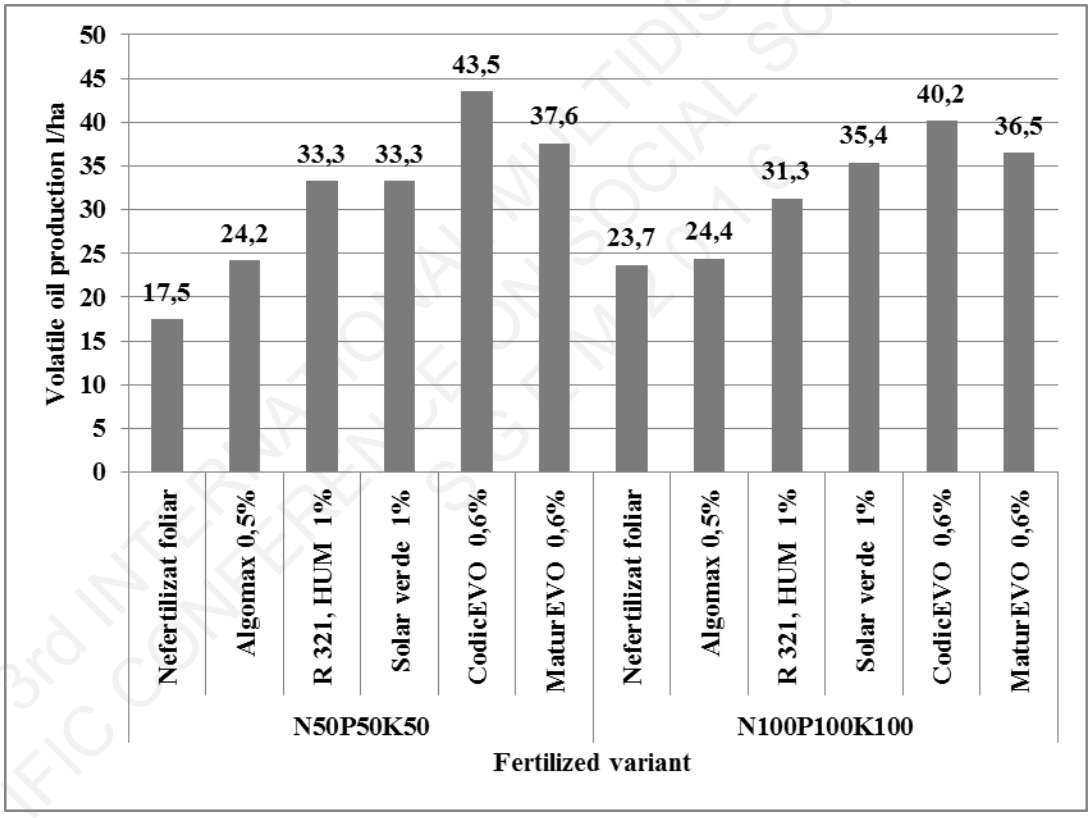


Fig.2 The influence of interaction (agrofond x foliar fertilizer) on the production of volatile oil hyssop

CONCLUSIONS

1. According to the fertilization on a soil with N100P100K100, using the complex liquid fertilizer and applying the foliar we can show a stimulatory effect on the plant growth of hyssop and finally on the production of Herba.

2. The average results achieved in the years of experimentation according to the oil content lead to the conclusion that it was less influenced by the studied factors, the oil production being basically determined by the herba achieved production.

REFERENCES

[1] Crăciun, F., Bojor, O., Alexan, M., 1977- Hyssopus officinalis. Farmacia naturii, Editura Ceres, București

[2] Fazecaș, I. și colab. 1984- Rezultate privind influența fertilizării, epocii și desimii de semănat la Hyssopus officinalis în condițiile pedoclimatice de la Timișoara, Herba romanica, nr.5, București.

[3] Păun, E. și colab., 1986- Hyssopus officinalis, Tratat de plante medicinale și aromatice cultivate, Editura Academiei RSR, vol.I

[4] Răcz, G., Laza,A., Coiciu,E.,1970- Hyssopus officinalis. Plantele medicinale și aromatice, București

[5] Scoreico Elena, 1987- Influența îngrășămintelor chimice asupra producției de herba și a calității acesteia la specia Hyssopus officinalis. Herba romanica, nr.7, București.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
S G E M 2 0 1 6

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

RISK MANAGEMENT AND RISK QUANTIFICATION TOOLS: FOCUSING ON SLOVAK ENTERPRISES

Ing. Sylvia Jenčová, PhD.[1]

Ing. Viktória Ali Taha, PhD.[1]

Ing. Michaela Sirková, PhD.[1]

doc. Ing. Juraj Tej, PhD.[1]

[1] University of Prešov in Prešov, **Slovak Republic**

ABSTRACT

The aim of the article is the examination of internal risk management systems and specification of methods and procedures used by Slovak enterprises to analyze and eliminate risks. Primary data were obtained through questionnaire surveys and for the analysis were used adequate statistical methods. The attention is also devoted to the definition of the risks and the specification of absolute and relative risk characteristics as well as risk quantification tools.

Keywords: risk, risk management, tools, methods

INTRODUCTION

The risk and uncertainty understood as the likelihood of negative deviations from the determined levels of objectives of the business entities are important attributes of business activities. According Johri [3, p. 20] „risk is not an, abstract concept. It is a variable which can be calibrated, measured and compared. The degree of risk attached to an event is generally linked to the likelihood of the occurrence of that event." The higher the probability that the actual outcome will be different from the expected outcome, the higher is the risk attached to the event [3].

Risk management was defined by Brigham & Ehrhardt [3, p. 20] as „the process of protecting one's person or organization in terms of assets and income". We characterize the risk management as a discipline that aims to achieve operational safety of the entity with the lowest possible cost. It is designed to allow to incorporate the expressions of risk arising from the nature of economic processes into the decision-making process in business management. Risk management in the company is focused on: (1) definition of all known risk factors that may affect the business entity operations; (2) selection of the most important risk factors that require attention; (3) determine the level of risk; (4) definition of measures to eliminate the most significant risks in order to reduce the risk to an acceptable and economically efficient degree/level; (5) monitoring, control and reviewing [8].

Addressing risk situations requires that risk managers in their daily activities demonstrate the strong erudition and constantly ask questions like: Is it possible to minimize the risk? What measures to adopt and what resources to use? What are induced costs, and what is

the residual risk? How does it affect the system parameters? Are there any alternatives? Are there any restrictions? What recommendations resulting from the analysis carried out? Represents analysis a sufficient basis for creation of plans to address risk situations?

Business risk is the consequence of specific problems of individual sectors or business entities. Rybárová and Grisáková [12] states that speculative business risk relates to business activities that are associated with the hope for positive results and also with the threat of results more negative than that expected or planned; these are the risks representing the effect of uncertainty in determining the strategy as well as fulfillment as part of the transformation process itself. The positive side of business risk is associated with the hope of success to achieve the highest (possible) profit. Negative side of business risk is associated with a danger of achieving worsened economic results than expected, or even with the impending bankruptcy. Business risks are changing along with external conditions, and therefore it is particularly necessary to ensure that the short-term and long-term plans developed in line with the development of micro and macro environment.

FINANCIAL RISK AND ITS MANAGEMENT

Risk together with liquidity and profitability are cardinal factors in terms of comparison of investment, forming an investor triangle indicating the fact that the implementation of one vertex is done at the expense of the second (respectively the third) vertex. Venture capital funds require high rate of return quantified by the return on equity, as a share of net profit attributable to one euro of the equity. Profitability and riskiness act (are present) in every business decision which takes place under conditions of uncertainty of processes action, randomness of conditions of the events and storylines [2].

Each specific sector or risk management application entails individual needs, individual perceptions of risk and the resulting view/way of defining the criteria for risk determination. According Kucharčíková et al. [6] in the field of financial management, risk theory is based on the fundamental theorem that the value of euro (gained) with the risk is lower than the euro without risk. Therefore, financial management must - in addition to the factor of time - respect the risk the risk that is associated with the acquisition of cash receipts. Šebej [14] defines the terms – safety, uncertainty, threat and chance in relation to the risk. Different categories should be seen with the emphasis on the context of their mutual incompatibility and interchangeability. Mikolaj [10] describes the risk as such a state of uncertainty in which the degree of probability can be estimated. Regarding alternative solutions - for them it is possible to say for sure that one of the solutions occurs while the likelihood of its occurrence can be expected or estimated. Many authors classify the risk from different perspectives.

Marinič [8] in its work describes in detail systematic risk quantified by covariance of i-th assets with the market, which is unavoidable and undiversifiable (respectively it can not be reduced through diversification), always burdens investor's positions, is common to all businesses, arising from the overall economic development (may be affected by changes in tax policy or changes in exchange rates). Unsystematic risk is associated with a particular entity, with a particular industry, and its rate can be eliminated through diversification within a portfolio reflecting the return on shares of a particular company. Unsystematic risk contrary to systematic risk can be excluded by appropriate allocation

of investments in portfolio assets. Classification of risks according Marinič [8] is presented in Table 1.

Table 1 Genesis of changes

Kinds of changes	**Causes of change**	
Natural	*Internal* (life-cycle) The internal dynamics of the company caused by ongoing lifecycle	*External* (population ecology) Changes in company's environment that are uncontrolled by management
Induced	Changes induced by control elements of management	Changes made as a result of changes in external environment

Source: Marinič 2008, p. 210

Financial risk management can be defined as "the practices and procedures that a company uses to optimize the amount of risk it handles with its financial interests" [4] or "as minimizing exposure of a firm to market risk and credit risk using various financial instruments" Dowd (2006, in [3]). Financial risk management deals with other risks related to foreign exchange, liquidity, inflation, nonpayment of clients and increased rate of interest [3].

Interest rate risk determines the fluctuations in asset yields by varying the level of interest rates. Changes significantly affect asset prices - increase in interest rates causes a decline in asset prices. Securitization process represents the distribution of the credit risk of the original creditor so that the loans of the same kind will be concentrated in package that dispose to intermediary, who will on this basis issue bonds guaranteed by claims against the original debtor [15]. Market risk is determined by factors of the asset yields fluctuations due to market fluctuations. Only market risk reflects the market – in the price of risk factor.

Operational risk is mainly determined by the fixed costs share of total costs. A fall in demand for company's products decreases production, but fixed costs will remain for some time and the company is not able to flexibly adapt. The rate of operational risk is determined by the degree of operating leverage.

Enterprise indebtedness increases financial risk, its rate is expressed by the degree of financial leverage. Kiseľáková et al. [5] stressed that the financial risks are a menace for all businesses and it should be given sufficient attention to their prognosis in order to (as much as possible) mitigate their effects of the business entity. According to Markovič [9] the aim of the financial risks guidance is the removal of (for the company) eliminable financial risks and/or the reduction of unwanted losses to an acceptable level (in the case of non-eliminable financial risks It - in specific cases - requires the establishment of individual risk strategy.

RISK QUANTIFICATION TOOLS

Risk quantification is the subject/part of risk management. Group discussions, Delphi method, cognitive maps and influence charts, analysis of conditions and limitations can

be used for risk identification. In the context of risk the financial variables are seen as random variables that can be quantified by applying probability distribution. The methods consist is comparing the probability distribution and their parameters [1], [7].

Quantitative measure of risk is the standard deviation. Quantification of the absolute risk characteristics is represented by the mean value, standard deviation, variance, covariance. Coefficient of variation (V) - calculated as the ratio of standard deviation and arithmetic average, indicating a relative measure of variability (Table 2) – represents a relative risk characteristic. Risk assessment of investments is focuses on the evaluation of the return volatility compared to its average. The absolute measure of variability is quite difficult to interpret, but it is evident that the larger the variability of values, the greater the deviations, and hence the greater the value of the standard deviation. The main tool for the interpretation of a random variable X is the distribution function (1), with properties of functions (2), (3), (4). In terms of risk quantification, several authors recommended to apply a coefficient of skewness (5).

$$F(x) = P(X \langle x) \quad (1)$$

$$0 \le F(x) \le 1 \quad (2)$$

$$x_1 \le x_2 \; ; F(x_1) \le F(x_2) \quad (3)$$

$$\lim_{x \to -\infty} F(x) = 0 \; and \; \lim_{x \to \infty} F(x) = 1 \quad (4)$$

$$a(X) = \frac{\mu_3(X)}{s^2} \; ; \mu_3(X) = \sum_{i=1}^{n} (x_1 - E(X))^3 \, P(X = x_1) \; resp. \; \mu_3(X) = \int_{-\infty}^{\infty} (x - E(X))^3 \, f(x) dx \quad (5)$$

Table 2 Risk measurement

Parameter	Symbol	Distribution	
		Discrete	Continuous
Mean value	$E(X)$	$= \sum_i p_i(x_i) \times x_i$	$= \int_{-\infty}^{\infty} x \times f(x) dx$
Variance	$\sigma^2(X)$	$= \sum_i p_i(x_i) \times [x_i - E(X)]^2$	$= \int_{-\infty}^{\infty} [x - E(X)]^2 \times f(x) dx$
Standard deviation	$\sigma(X)$	$= \sqrt{\sigma^2(X)}$	$= \sqrt{\sigma^2(X)}$
α – quantile	x_σ	$\Pr(X \langle x_\alpha) = \alpha$	$F(x_\alpha) = \int_{-\infty}^{\infty} f(x) dx = \alpha$

Source: Dluhošová 2014, Litavcová 2014

The level of risk of the investment, research, financial investments measured by the variance or standard deviation is dependent on the static dependency rate. A positive correlation of the portfolio components contributes to an increased risk. Indirect static dependency decreases the portfolio risk. Jenčová and Litavcová [2] consider a hypothetical example where a business entity assesses variants A and B and the task is to identify in which company there is a higher investments risk. The average revenue of

alternative VA is 6.95%, the average revenue of alternative VB is 7.05%. Quantification of absolute and relative characteristics are in Table 3.

Table 3 Risk assessment of selected alternative A and B

Variant/ scenario	V A	V B	P	$\sigma^2(X)$ A	$\sigma^2(X)$ B
1.	7%	6%	0,30	0,0007	0,3307
2.	8%	13%	0,15	0,1623	5,3103
3.	9%	4%	0,20	0,8405	1,8605
4.	6%	10%	0,10	0,0902	0,8702
5.	5%	6%	0,25	0,9506	0,2756
∑	–	–	1,00	2,0475	8,6475
V				6,95 %	7,05%
σ				1,4309%	2,9407%
V_c				0,27568	0,4171

Source: own processing

$$cov(A,B) = \frac{\sum_{i=1}^{n}\left(V_{iA} - \overline{V_A}\right)\times\left(V_{iB} - \overline{V_B}\right)}{n} \quad (6)$$

$$K(A,B) = \frac{n\times\sum_{i=1}^{n}V(A)\times V(B) - \sum_{i=1}^{n}V(A)\times\sum_{i=1}^{n}V(B)}{n^2\times\sigma(A)\times\sigma(B)} \quad (7)$$

Covariance of return of the projects A and B, cov(A, B) and the coefficient of correlation K(A, B) are determined by metrics (6), (7). Variant A has a lower standard deviation compared to variant B, i.e. variant A is less risky. The higher the standard deviation, the higher level of risk. The coefficient of variation provides a more accurate calculation.

RISK MANAGEMENT AND RISK QUANTIFICATION TOOLS IN SLOVAK ENTERPRISES

Primary data was collected via questionnaire surveys among representatives of Slovak enterprises/companies from different sectors. All questions were closed – most of the items were in the form of statements using five-point Likert (response) scale on which respondents indicated the level of agreement or disagreement (from 1 - strongly agree to 5 - strongly disagree).

In the first survey, most of the surveyed organizations were large companies (over 500 employees) (37%), immediately followed by medium sized companies (36%) and small companies (26%). In addition to the size another important criterion is the sector of the economy and length of existence while a sample involves almost 51% companies existing on the market for more than nine years, 5% companies operating less than 3 years [11].

SCIENTIFIC CONFERENCE INTERNATIONAL MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS SGEM 2016

The ability to manage risk is an important factor of the company's success and survival. It is practically a necessity for organizations to have someone (department or person at least) that would identify risks and come up with strategies to guard against these risks. Asked if the company has a division for risk/crisis management, most of surveyed companies responded negatively (59%) although the majority organizations (54%) have the risk managers, respectively a persons responsible for monitoring and managing risk. Regarding the issue of exploring by what risks the companies were exposed for the last five years it was found that organizations are most/most often exposed to financial risks (this option was chosen by 47% of respondents). The second most important group of risks are political risks (selected by 28% of respondents) [11].

The second survey - also focused on risk management and the related processes was conducted among 52 companies operating in Slovakia. The results of the survey show that 41% of businesses solve the problems associated with the risk (most often) by analyzing data from cash flow and financial statements. It should be noted that these instruments to deal with risk are legally given. However, companies must analyse the mentioned documents not only because of control but also in order to forecast future conditions. 33% of respondents said they use software to manage risk. Other instruments include the ISO standards (chosen by 14% of respondents) and outsourcing (12%). It can be regarded as a positive phenomenon/trend that companies use another tools in addition to accounting and trust in generally accepted external companies and software programs [13].

On the question about the effectiveness of risk management in the area of risk identification, respondents answered as follows: 27% of respondents consider the process of identifying risks for ineffective and 35% of respondents considered them to be effective. Regarding risk quantification techniques, most of the organizations use expert opinion system followed by Monte Carlo simulation (most often used by organizations with own crisis management department). Other risk quantification tools are used by Slovak organizations to a small extent [13].

CONCLUSION

Factors that affect risk are mainly accompanied by structural changes in the economy, politics, recession etc. The aim of the paper was to define the risk in the context of financial management and decision-making, pointed to the way of risk quantification and to the explanatory power of statistical characteristics of risk in financial management of businesses. According to the survey, financial risks are the most important group of risks faced by Slovak organizations. Results of the second survey confirmed that the analysing data from cash flow and financial statements is the most popular and most common tool for risk management and analysis. Expert opinions and Monte Carlo simulation appear to be the most used risk quantification methods/techniques.

In general, decisions about risks is designed to mitigate risk quantification for business activities of the companies. The implementation of risk management systems may entail problems because it often affects the whole society and requires a lot of expertise and experience. Creative approach to addressing the issue creates a space for other theoretical considerations and subsequent proposals for practical applications of risk management.

ACKNOWLEDGEMENTS

The contribution is the result of VEGA Project No. 1/0255/2016 The research on the possibility of optimization of process-oriented models of the financial administration management with a focus on transfer pricing and tax harmonization in the terms of EU.

REFERENCES

[1] Dluhošová D., Finanční řízení a rozhodování podniku. Praha: Ekopress, 2008.

[2] Jenčová S., Litavcová E., Riziko ako jeden z hlavných vrcholov investorského trojuholníka. In: Finančné trhy. Vol. 9, 2012.

[3] Johri S., Enterprise wide risk management - the new frontier, In: Management Prudence, Vol. 4/Iss. 2, 2013, pp. 19-32.

[4] Kirk A. (Demand Media). What Is Financial Risk Management? [online]. [cit. 2016-06-20]. Retrieved from: http://smallbusiness.chron.com/financial-risk-management-43326.html

[5] Kiseľáková D., Šofranková B., Šoltés, M., Analýza finančných rizík s dôrazom na ukazovatele likvidity a zadlženosti podnikateľských subjektov. In: Exclusive journal: economy and society and environment, Vol. 2/No. 3, 2014, pp. 4-11.

[6] Kucharčíková A. et al., Efektivní výroba. Brno: Computer Press, 2011.

[7] Litavcová E., Využitie matematiky v ekonomickej praxi. Prešov: BookMan, s.r.o., 2014.

[8] Marinič P., Plánování a tvorba hodnoty firmy. Praha: GRADA Publishing, a. s. 2008.

[9] Markovič P. et al., Manažment finančných rizík podniku. Bratislava: Iura Edition, 2007.

[10] Mikolaj J., Kvantifikácia rizík. [online]. In: Scientific Letters of the University of Žilina. Žilina: Edis. [cit. 2015-11-20]. 2002. Retrieved from http://www.uniza.sk/komunikacie/archiv/2002/4/4_2002en.pdf

[11] Repjová M. Analytical study of risk management implementation in the Slovak environment. [Magister thesis]. [Supervisor: Ali Taha V.] University of Prešov, Slovakia, 2015.

[12] Rybárová D., Grisáková. A., Podnikateľské riziko. Bratislava: Iura Edition, 2010.

[13] Straka J., Analytical insight into risks and risk management practices in the selected company/organization [Magister thesis]. [Supervisor: Ali Taha V.] University of Prešov, Slovakia, 2015.

[14] Šebej P., Vybrané metódy a nástroje riadenia rizík. Brno: Tribun EU s.r.o., 2014.

[15] Vlachynský K. et al., Podnikové financie. Bratislava: Iura edition, 2006.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL MULTIDISCIPLINARY 3rd SGEM 2016

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

RISK MANAGEMENT IN CLUSTER´S COOPERATION IN SLOVAK REPUBLIC

Ing. Jan Havko[1]

assoc. prof. Ing. Jozef Klučka, PhD.[2]

Ing. Katarina Havierniková, PhD.[3]

[1,2] University of Žilina, **Slovakia**
[3] University of Trenčín, **Slovakia**

ABSTRACT

Currently risk management steps are applied in many areas and sectors - business and non-business. In connection with the development of cluster cooperation, possibility of risk management application, also occur in this specific area. Framework of risk management in cluster cooperation can contribute to the quality of services provided by clusters, to development of cluster´s organizations as well as to the sustainable development of the region. The aim of this paper is to highlight the importance of merging the various regions of Slovakia into clusters (mainly in tourism) and risk resulting from this cooperation. Article dataset is based on the statistics of the Slovak Republic. Results of article may be useful to raise awareness of the clusters risk management.

Keywords: cluster, cluster cooperation, risk management

INTRODUCTION

Development of tourism is big opportunity in the Slovak Republic. Slovakia has a lot of national parks, sky resorts, spas and a lot historical monuments like castles, churches, etc. However, sustainable development of the tourism requires high costs on marketing. Almost every entrepreneur in tourism is from small and medium companies. If they want to make a sustainable business, it is suitable to make a cluster´s or network of companies.

Cluster´s is not a new term, it is known for a long time. There have been lot of initiatives from institutions like EU, OECD and UNIDO, which want to highlight and promote the concept of clusters. Despite of this, there is only a few clusters in the Slovak Republic.

According to Porter [1] cluster is accumulation of geographically connected organizations, specialized suppliers, services providers, companies in related fields and linked institutions, as are universities, agencies and business companies. However, these organizations are rivals on the same markets. The main idea of clusters is that organizations together can achieve higher profits, when they will be using natural chains (networks) of services that they provide. Development of country GDP is highly dependent on growth of the SMEs. This can highlight utility of cluster cooperation of SMEs as a way for their growth. Advantage of organizations cooperation in clusters can be define as increase of demand for products and services of companies organized in a

clusters, improvement of access to local and global markets, costs reduction and efficient usage of regional and municipality public funds.

CLUSTERS IN SLOVAK REPUBLIC

It is hard to create a list of clusters in the Slovak Republic, because there is not any specific list or data source. However in [2] there is stated that in the Slovak Republic there is 47 clusters. They can be divide into three categories:

- Tourism clusters (27 %),
- Technical and industrial clusters (60 %),
- Regional development clusters (13 %).

As we can see, the number of clusters is very low. It is cause by legislation of the Slovak Republic. There is no legal act concerning clusters. For organizations, it is better to use other form of cooperation/business. Main reason is that their access to the financial sources is less complicated. However, Slovakia is a country with lot of tourism attractive places there are only a few tourism clusters. Clusters are not distribute evenly around the country. In figure 1, we can see distribution of clusters in 8 self-government regions in the Slovak Republic.

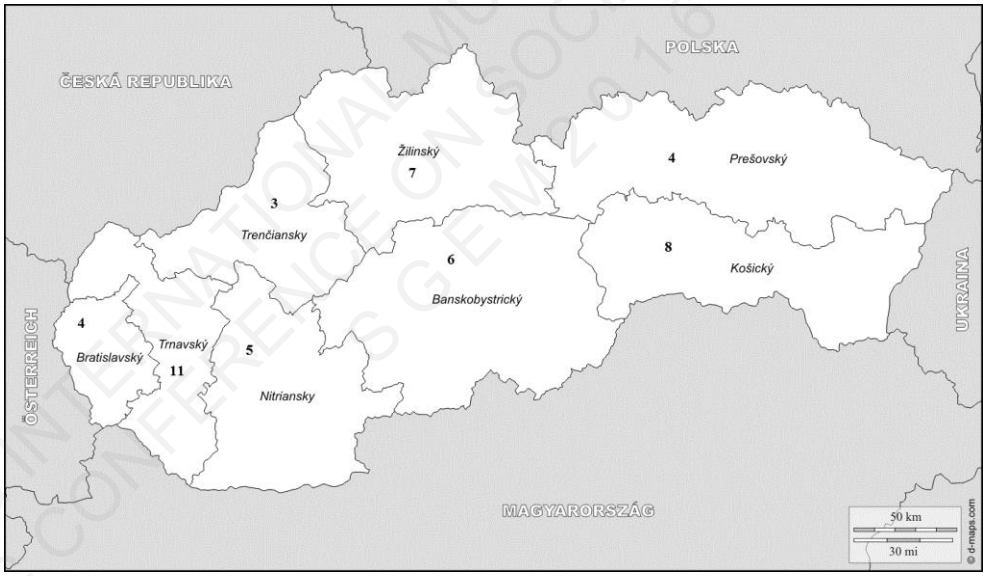


Figure 1: Distribution of clusters in 8 self-government regions in the Slovak Republic. According to: [3]

The most of cluster organizations is situated in Trnava self-government region, where is almost 3-times more clusters than in Trenčín, Bratislava and Prešov self-government region. The most of the tourism clusters are in Žilina self-government region.

The development of tourism trade in Žilina region has slowly increasing trend [4]. There are three clusters, which we have analyzed. Orava, Liptov and Turiec-Kremnicko are clusters, which were establish in the same year (2012). All have very common goals, mainly devoted to increasing of tourism trade. Cluster Liptov includes districts of Liptovský Mikuláš and Ružomberok. Cluster Orava includes districts of Dolný Kubín, Námestovo and Tvrdošín. Cluster Turiec-Kremnicko includes districts of Martin,

Turčianske Teplice and Kremnica (not included in analysis). In table 1, we try to highlight the development of tourism trade in Žilina self-government region since these clusters were established. Comparison analysis focused on two indicators. First, is numbers of visitors and second is numbers of nights spent in hotel.

Table 1: Comparison of tourism trade development in Clusters region
According to: [4]

Year	Indicator	Liptov		Orava		Turiec	
		Slovak visitors	Foreign visitors	Slovak visitors	Foreign visitors	Slovak visitors	Foreign visitors
2015	1	318 625	165 866	57 484	20 073	52 005	16 189
	2	2.95		2.6		4.8	
2014	1	275 663	153 142	40 708	19 486	45 799	13 523
	2	2.95		2.6		4.9	
2013	1	287 787	183 996	48 296	24 198	53 774	17 125
	2	3		2.7		5.1	
2012	1	256 308	155 320	51 530	15 068	56 133	15 838
	2	3.2		2.6		5.2	

Despite of the similar area size of regions, the amount of tourist is very differential. According to table 1, we can say that Liptov is the most attractive region from chosen regions. However, the number of tourists is higher in Liptov, but number of nights spent in hotel is higher in Turiec. It is caused due to spa in Turčianske Teplice, which has big influence on average number in this region. However, all three clusters were establish in 2012, it seems that only Liptov cluster accomplished his goal to increase the tourism trade in the region. In table 2, are stated some relevant information about chosen clusters, which could have a serious impact to accomplishment of their goals.

Table 2: Comparison of tourism clusters in Žilina self-government region for year 2014
According to: [5, 6, 7]

Cluster	Liptov	Orava	Turiec-Kremnicko
Number of involving subjects	18 (6 enterpreneur, 12 municipalities)	28 (14 enterpeneur, 12 municipalities and 2 others)	16 (4 enterpreneur, 4 municipalities and 8 others)
Number of full time employees	2,5	1	0
Participants subjects fee (€)	819 596	70 000	14 429
State budged submission (€)	723 888	45 900	12 000
Business income (€)	58 188	4 540	0
Others income (€)	76 970	2 560	0
Budged income total (€)	1 678 642	123 000	26 429

Differences between clusters are obvious. Cluster Liptov is highly developed, because it has a few times bigger budget than others clusters do. Also has more employees so they can accomplish clusters goals. The worst cluster from selected is Turiec-Kremnicko,

which has small budget, that it cannot be enough for doing the same things/actions as other two clusters. In spite of similar conditions for achieving their goals these clusters have developed very differently. It leads us to implementation of risk management into clusters, which can solve differences between proposed targets and Cluster options. Risk management is becoming an important part of each organization´s management, clusters not exclude. This means that risk management is substantial part of management activities such as planning, decision-making, organization or control. Risk management has to be implemented in all activities during cluster life cycle.

CLUSTER RISK MANAGEMENT CONCEPT

The reason for cluster risks research in general position is the fact that, knowledge of risk contributes leads to better understanding of the causes and consequences of decisions. Understanding of risk is useful for identify and anticipate the future state of the cluster. On that basis, it is possible to make strategic and operational decisions that anticipate this knowledge.

Knowing and understanding the risk profile (a list of key risks), risk factors and understanding the possibilities of their management as well as defining the business model for risk management are all essential tasks related to risk management at the enterprise/cluster level.

According to [8], there are four basic steps of risk management:

- Identification of risks associated with the activity.
- Evaluate the relative importance of the activity,
- Eliminate or minimize identified risks,
- Protection against the inevitable risk.

In our case we develop, a logical approach, to cluster risk analysis are state/identified in these steps:

- Definition of the relevant elements/phases of the clusters life cycle in relation to its purpose and objectives also activities and tasks which are done during these phases,
- Definition of cluster risks, making the list of risk, define the owner of risks,
- Define the probability of risk phenomena occurrence and its consequences,
- Definition of strategy approach to cluster risks; within the enterprise to apply the approach to defining risk tolerance,
- Define organizational framework for defining the powers and competences the work with risk and adopting measures,
- Define relations between identified risks (risk portfolio),
- The establishment of early warning systems, which would allow to identify possible cross event and activate specific mechanisms in the structure of the company, which have competence to act on the process variable and thus reduced the risks and the potential risks to the overgrowth of the crisis in the company.

From these steps, we create a theoretical framework of cluster risk management, which is in figure 2.

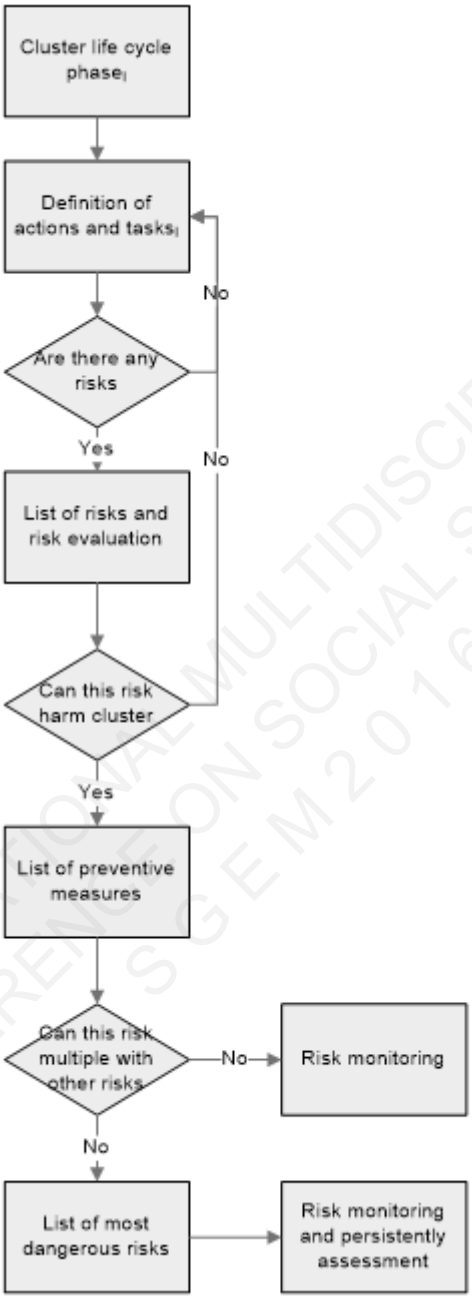


Figure 2: Theoretical framework of cluster risk management

If this framework will be implement into clusters management, it is necessity to understand the clusters activities and tasks during all life cycle of the cluster. However, due to range of the article is unable to describe all of things stated in framework. In next chapter, we are focusing on Cluster life cycle.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
SGEM2016

CLUSTER LIFE CYCLE

Establishing of cluster is a long-term activity. Most important person is a facilitator, who starts cluster initiative. The most important activities are before establishing the cluster. In table 3, we present basic phases, activities and tasks during the cluster life cycle.

Table 3: Cluster life cycle activities

According to: [9]

Phases	Activities	Tasks
1. Analysis of conditions	Analysis on place	Localization condition of cluster
		Entrepreneur and company culture
	Market and infrastructure analysis	Market analysis
		Analysis of competition
		Infrastructure analysis
		Geographical and social analysis
		Supplier analysis
2. Identify cluster goals	SWOT analysis	
	Definition of cluster key activities	Partners identification
	Stakeholders participation	Companies, communities, municipalities, local authorities
	Definition of cooperation goal	Goals in activities of cluster
		Goals in cooperation development
3. Creation of Organizational and Operational cluster model	Creation of cluster organization management	Cluster tasks definition
		Identify priorities
		Resources assessment
		Budget creation
		Creation of control and monitoring mechanism
	Creation of cooperation and decision making rules	"Cluster codex"
	Entrepreneur plan making	
4. Influence analysis and cluster finalization	Economic analysis	Analysis of cash flow
		Analysis of payback time
		Assessment of agreement between cluster strategy and cluster goals
	Possible changes	
	Finalization of entrepreneur plan	
5. Cluster management creation	ICT system of cluster	Communication to "customers" and stakeholders
	Communication channel creation	Communication to partners
6. Progressive development	Activity expansion	
	Marketing activities and developing of public relation	
	Innovation	
7. Repeal	Identification and analysis of repeal possibilities	Integration to the another cluster

In its initial phase (mapping a cluster), Facilitator plays an essential role, who is an independent entity with the task to start and develop cooperation among potential members of the cluster in order to bring the cluster initiative to phase cluster foundation [10]. Mapping cluster mean analysis of market condition (demand and offer), company's culture, potential stakeholders, infrastructure in region, etc. If in initial phase a conclusion that there is a possibility of creation a cluster is accepted, followed by the establishing a cluster phase. This is most important phase. There are creating goals of the cluster, cluster organisational structure, rules of cooperation and decision-making, mechanism of budged creation mechanism (fundraising).

CONCLUSION

In article, we present current state of cluster cooperation in the Slovak Republic. There are only 47 clusters. It is mainly caused by Slovak legislation, there is not definition of cluster and it is better to establish other type of organizations like (for example) civil association. Tourism clusters are least developed against industrial cluster in the Slovak republic. Because of the cluster activities, they need co-funding from state budged or European Union funds. However, we analyzed a few cluster in Žilina self-government region, we can say that main differences are in budged and number of employees, but their goals are very similar. It leads us to create the basic framework for cluster risk management. In the article, we defined cluster life cycle with basic activities and tasks that cluster has done in all phases. These activities are closely connected to many risks, which should be researched more detail. There can be used a several risks analysis methods for further research.

ACKNOWLEDGEMENTS

This work was supported by the Slovak Scientific Grant Agency of the Ministry of Education of the Slovak Republic under the contract No. VEGA 1/0918/16.

REFERENCES

[1] Porter, M. E. Competitive Advantage of Nations, New York: The Free Press 1990

[2] Strelcová, S., Janasová, D. Regional cooperation of small and medium enterprises, CROMA scientific journal, ISSN 2335-7959, Slovakia, vol. 3/ issue 1, 2016.

[3] Ministry of Interior of the Slovak Republic, Registre a evidencie [on-line] [cit. 2016-01-06]. Available at: http://www.ives.sk/registre/

[4] Regional Tourism Organization of Žilina, Tourism trade statistics [on-line] [cit. 2016-01-06]. Available at: <http://zilinskyturistickykraj.sk/statistika-cr/>

[5] Tarhaj, R., Report on the activities of Regional Tourism Organization Turiec-Kremnicko. [on-line] [cit. 2016-01-06]. Available at: http://www.turieckremnicko.sk/files/OO_CR_T-K-Sprava_o_cinnosti_za_rok_2015.pdf

[6] Kaščák, R., Cluster Orava: Regional Tourism Organization Annual Report 2014 [on-line] [cit. 2016-01-06]. Available at: www.registeruz.sk/cruz-public/domain/financialreport/attachment/4511113

SCIENTIFIC 3rd INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

[7] Bartková, D. Management report of Liptov Regional Tourism Organization Region for year 2014 [on-line] [cit. 2016-01-06]. Available at: www.ruzomberok.sk/files/39062

[8] IRM, A Risk Management Standard. London: 2002. [on-line] [cit. 2016-01-06] Available at: https://www.theirm.org/media/886059/ARMS_2002_IRM.pdf.

[9] Kocziszky, G., EKONOMIKA REGIONÁLNYCH KLASTROV. [on-line] [cit. 2016-01-06] Available at: http://www.uni-miskolc.hu/~regpalzs/crossedu/tanany/szlovak/EKONOMIKA%20REGION%C3%81LNYCH%20KLASTROV.pdf

[10] Jirčíková, E., Identification of Factors Influencing the Clusters Development Process in the Czech Republic. Disertation thesis, UTB Zlín. 2008.

SCIENTIFIC 3rd INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS S G E M 2 0 1 6

THE ROLE OF SPACE AND STABILITY IN THE DEVELOPMENT OF TOURISM

Assoc. Prof. Dr. Niyaz K.Gabdrakhmanov[1]

Assoc. Prof. Dr. Ruslan A.Ulengov[2]

Assoc. Prof. Dr. Liliya R. Ismagilova [3]

[1]Kazan Federal University, **Russia**

[2] Kazan Federal University, **Russia**

[3] Kazan Federal University, **Russia**

SCIENTIFIC JOURNAL MULTIDISCIPLINARY RESEARCH SOCIAL SCIENCES AND ARTS

ABSTRACT

In this paper the authors consider tourism as a geographical phenomenon, which can be evaluated and used in geographical perspective to understand the forms and functions of tourism resources along with the specifics of its demand. Tourism is one of the tools to achieve sustainable and balanced development of the region. The authors analyze the concept of "tourist space"" and "tourism industry", which resulted in the conclusion that, in essence, they have a very long and close connection with the local and spatial aspects and elements. The article discusses various approaches to the study of tourism sustainability, their relationship with spatial concepts. In order to introduce into use and to assess such complex concepts as sustainability or sustainable development, the article uses well-known structures, such as prism of sustainability. In particular, the indicators proposed by the United Nations (UN CSD), the World Tourism Organization were considered. The analysis allowed to define "stability of the system" as its ability to remain relatively unchanged (to keep its structure and functional features) within certain time frame despite external and internal disturbances. At the same time, one can distinguish three types of sustainability, related to spatial factors: 1) positional stability – relatively static notion and it reflects fixity of the elements of the system in a given area, it is connected with the existence of systems and their components; 2) structural stability - a concept that reflects the links (real and potential) between the elements of the system or different systems and has a static-dynamic nature; 3) functional stability defines the dynamics of systems, the actual existence of spatial interactions between elements of the system and other systems.

Keywords: sustainability, tourism, development, space, territorial system, the prism of sustainability, sustainability standards.

INTRODUCTION

The term "region" has different definitions and interpretations, but in most cases it means "space limited in scope". [8] In tourism, this space is a complex of tourist destinations, each having its own characteristics and capabilities. Therefore, sustainable development of tourism should be studied in accordance with these features, as well as it should fit into the more general programs and be based on a balanced, rather than a partial development.

In the opinion of Formica, tourism is a geographical phenomenon that can be evaluated and used in a geographical perspective to understand the forms and functions of tourism resources, along with the specifics of its demand. In addition, a regional analysis can help to determine the important variables that affect the attractiveness of tourism in the region, as well as to organize the space in it. Moreover, if to take into account the characteristics of supply and demand in the tourism sector of any region, then all this will enable to achieve sustainable tourism development.

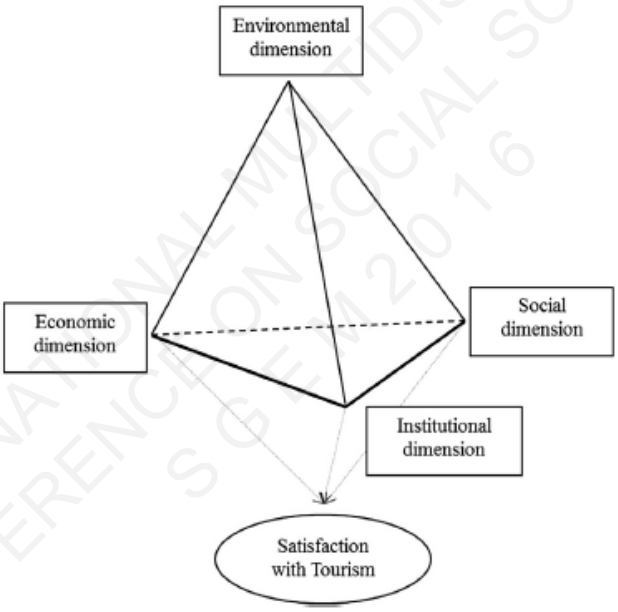


Figure 1. Prism of sustainability (Spangenberg, Valentin), [12]

Figure 1 shows a structure consisting of four dimensions which can be used to develop sustainability indicators [12]. It is based on such fundamental principles as "people / profit / planet", as the main dimension, although it includes an institutional perspective as a key dimension.

Methods

Prism of sustainability enables to set the sustainability indices and sustainability standards for planning and management of local communities [5]. Indicators are the biophysical, social, administrative and other conditions that afflict people in any situation [6]. Standards also formulate management objectives in terms of numerical

values and determine the appropriate level of acceptable limits for the ultimate efficiency indicators, i.e., what ultimate efficiency will be too big for each indicator. The standards define the conditions that have a desirable nature, as well as the conditions which the administrators do not want to exceed.

Results

Thus, the problem of stability of regional socio-economic systems [7], including tourism and recreation, arose as a result of the space-time conditioning of human life , continuity of its stretch and discontinuity of the organization. The formation and functioning of regional tourist and recreational systems is based on a human being - a biological and social individual, the carrier of reasonable living activities. Any production, any human activity cannot exist in isolation, both from nature and from society - they are formed in conjunction with natural and social environment.

Initially, for the territorial systems, including for recreational one, it was tried to use the concepts of sustainability developed in physics, mathematics, biology [3]. A.L.Serebryanny and A.Yu.Skopin examined the origins of the term and the meaning implied and came to the conclusion about the need to replace the term "sustainable development". Some authors, for example, A.M.Trofimov, V.M. Kotlyakov, Yu.P.Seliverstov, V.A.Rubtsov, R.G.Huzeev consider "sustainability" in terms of effectiveness and strength of the system structure, search for compromises, taking into account interests of the various components of territorial systems in uncertainty.

The category of "sustainable development" [2] is extremely blurred in content. For example, the overall stability of territorial systems is in the sustainability of economic growth (production and consumption levels), the sustainability of economic development (per capita welfare), the sustainability of natural resources (reserves of these resources in the environment) [8], etc.

However, in the definition of sustainable development there are two semantic components that can be distinguished: the essence and the conditions necessary for the implementation of sustainability [9].

In general, the development involves a process aimed at improving the lives of people. According to Dudley, "development is not just the increase in wealth. It means a change; change in behavior, aspirations and in the way of perception of the world". "Economic growth in itself does not determine the development. Development is a broad concept that includes changes in the human and institutional levels as well as economic growth" [7]. It involves a wide range of issues related to quality of life such as life expectancy, infant mortality, education, access to fundamental liberties, the composition of food and spiritual well-being.

In other words, one should not consider development as a problem for technicians and engineers, it is necessary to pay more attention to the historical, cultural, social, economic and political reality [10]. In addition, the main focus of sustainable development is on the transfer of the achievements in the future, so that future generations are not left at a disadvantage [11]. In this context, sustainable development has the following definition of the UN World Commission on Environment and

Development (WCED): "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [13].

Under the sustainable development, D. Reid [10] sees the strategy of development covering all assets (natural, human resources, financial and other), so that in the long term to increase the wealth and prosperity. Sustainable development as the goal rejects the policies and practices that support the existing standard of living at the expense of depletion of the production base, including natural resources, and leave future generations against less rosy prospects and greater risks than they have themselves.

At the same time, we can distinguish three types of sustainability, related to spatial factors: 1) positional stability – relatively static notion and it reflects fixity of the elements of the system in a given area, it is connected with the existence of systems and their components; 2) structural stability - a concept that reflects the links (real and potential) between the elements of the system or different systems and having a static-dynamic nature; 3) functional stability defines the dynamics of systems, the actual existence of spatial interactions between elements of the system and other systems [10].

If to combine all the statements, they are well within the provision that sustainability is the ability to maintain own qualitative features, i.e. framework of the territorial system which is in a certain state. Whereas, the sustainable socio-economic and environmental development [1] is understood as progressive advance according to the chosen strategy that ensures the achievement of an objective system of progressive social goals. Moreover, the progress can be at a different rate which should not change the focus and reduce the quality of development.

CONCLUSION

Answering a question [4], what this property is related to, one should note that there is the ability to withstand stress, environmental changes, disturbances, extreme conditions for a specified length of time. But, the problem arises of how to evaluate the degree of stability of territorial system. In principle, the assessment of the stability degree for various sub-systems cannot be reduced to an integral parameter that would characterize a certain mean value. In each case, the territorial system stability degree can be measured:

1) in terms of the intensity of the impact, including the temporal characteristics - duration of continuous exposure;

2) in indicators tracking the status of the changes under the influence of anthropogenic impact on the territorial system;

3) in indicators reflecting social and economic effects, resulting from the impact of changes of the territorial system.

But it should be borne in mind that the stability degrees are mobile, i.e., in monitoring the stability degree should be constantly updated.

REFERENCES

1. Agafonov N.T., Islyaev R.A. Problems of Russia's transition to sustainable development. // The geopolitical and geo-economic problems of Russia, SPb, pp. 110 – 118.
2. Animitsa E.G., Ratner N.M., Bystrai G.P. The theoretical aspects of the problem of sustainable development of Russia and its regions // Geographical problems of strategies of sustainable development of environment and society. M., ppm194 - 204. 1996.
3. Armand A.D. The stability (homeostasis) of geographic systems to different types of external influences // Sustainability of geosystems. M, pp. 76-87, 1983.
4. Gladkiy Yu.N., Chictobaev A.I. Regional Studies. - M .: Gardariki, 2002. - 384 p.
5. Gorlinsky O.Yu. The problem of sustainable economic development // Int. Forum of informatization .: Proceeding of Conf. "Ideas of V.I. Vernadsky and problems of modern time. " M., pp. 82 – 84, 1994
6. Liptec Yu.G. Stability of systems in the economic and social geography // Sustainability of geosystems. M., pp. 68 – 73, 1983.
7. Hapgood D. (Ed.) The role of popular participation in development report of a conference on the implementation of title IX of the foreign assistance act Cambridge, MA: MIT Press., June 24 August 2, 1968. – p.20.
8. Liviu A., Valentian C. The tourism in view of regional development in north-east region of Romania. The annals of theStefancel mare. University succeava. 2008 NO. 8. P. 36-43.
9. Miller G. The development of indicators for sustainable tourism: results of a Delphi survey of tourism of tourism researchers. Tourism management, 2001. - P. 351- 362.
10. Reid D. Sustainable development: An introductory guide. London: Earth scans Publications, 1995. – p.38.
11. Skinner E., Font X., Sanabria R. “Does Stewardship travel well? Benchmarking Accreditation and Certification”, Corporate Social Responsibility and Environmental Management, 2004. - ,Vol. 11, P. 121-132.
12. Spangenberg J.H., Valentin A. Indicators for sustainable communities. Retrieved from.- 1999. http://www.foeerupe.org/sustainability/sustain/t-content- prism.htm
13. WCED- World Commission on Environment and Development, Our Common Future, Oxford University Press, Oxford, 1987. - 5 p.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION 3rd

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

ROMANIAN ASSOCIATION AND COOPERATION IN AGRICULTURE ON ECONOMIC GROWTH

Phd Student Alin Marcel Popescu,
Lecturer Dr. Camelia Manescu,
Researcher Miroslav Raicov,
Prof. Dr. Teodor Mateoc, Prof.
Dr. Nicoleta Mateoc-Sirb

Banat University of Agronomical Sciences and Veterinary Medicine, **Romania**

ABSTRACT

When Romania joined the European Union, it was highlighted the important role of Romanian farmers in the context of adapting to the requirements of the domestic market as well as European and even global market. During this period the reorganization concept of association and cooperation in agriculture becomes a mandatory necessity.

Agriculture determinants that influence national economic growth are multiple. The most important of these are : meteorological nature factors specific of each year, the domestic demand for agricultural products , and not least the agricultural exports . The purpose of this article is to prezent the need to sustain and develop the cooperative and associative forms of agriculture Romania.

The authors of the article concluded that only by converging actions on overcoming the mentality of farmers who are anchored in the past by adopting effective policies , the state can help stimulate the associative spirit and the growing contribution of the agricultural sector to national economic growth.

Keywords: Romanian farmers, Agriculture, Association, Cooperation, Economic growh.

After 1989 , agriculture in Romania face various stages of transition to a market economy and with considerable gaps to more economically developed countries , including EU countries.

One of the important factors of the transition period was marked by the difficult process of restitution of property rights, the excessive fragmentation of agricultural land (over 4.2 million owners of small farms , ie over 2.4 million hectares of land which can not apply modern agriculture) , lack of organization of agricultural land , lack of working capital , lack of training of the majority rural population , lack of management, aging rural population , the old mentality and lack of access to market small producers.

Romania joined the European Union, highlighted the important role of Romanian farmers in the context of adapting to the requirements of the domestic market as well as European and even global market requirements . [1]

Agricultural production in our country suffer primarily from a lack of quality issues , the lack of necessary volume of efficient dissolution and competitive production costs . Most farm households are not specialized, they having mixed

production profile , both animal and vegetable how . Also, the production profile is facing a variety of animal species and plant crops .

Dacian Ciolos , former European Commissioner for Agriculture and Rural Development , currently Minister of Agriculture of Romania , underlined magazine Harvest May 23, 2012 that " Romania should have as priorities association of farmers, agricultural advisory and consultancy services , revenues from agriculture "
[2]

These measures should be able to highlight the prerogatives of the Common Agricultural Policy within the financial year 2014-2020.

During this period the reorganization concept of association and cooperation in agriculture becomes an imperative necessity .
[3]

Forms of association and cooperation of the Romanian agriculture is regulated by Law no . 36/1991 . This law includes several forms of association , from the simple to the establishment of agricultural societies . Depending on the wishes of farmers there are various ways in which they can choose the most appropriate form of association for aces showcase production resources and aces maximize desired effects .

Agriculture determinants that influence national economic growth are multiple, the most important of which is domestic demand for agricultural products , the exports of agricultural products , natural meteorological factors specific to each year.

According to data presented in the " Convergence Programme 2016-2019 " issued by the Government in April 2016: " In 2015 , Romania registered a growth of 3.8 % , the fifth consecutive year (after 1.1 % in 2011 , 0.6 % in 2012 , 3.5 % in 2013 and 3.0 % in 2014). The increase from 2015 was due to the positive contribution of domestic demand. The main factor in this increase it was final consumption due to rising private consumption by 6.1 % in terms of low inflation , the interest rates have reached record lows and a significant increase in real wages . Government consumption was up by 1.8% . " [4]

According to the Press release no. 96 of April 17, 2015 the National Institute of Statistics on employment breakdown by economic activity shows that 28.3 % of the national total employment in 2014 was concentrated in the agricultural sector . . [5]

The trend is the decline in employment in agriculture , aspect to be noticed as positive , given labor compensation by introducing technologically superior machinery and equipment under the association, namely the consolidation of holdings .

The problems facing small farmers association who are justifying the need for cooperation are determined by difficult cooperation to service stations , particularly when the holding area is small , and the lack or poor development of marketing structures .

Relations Association and cooperation in agriculture are diversified by links established between agriculture and other sectors of national economy and in agriculture between economic producers of capital goods such as agriculture (seeds and planting material , animals production , etc.) and storage facilities , processing and sale of agricultural products.

Concentration of production in farms of optimum size as well and diversification and specialization of agricultural production are closely linked to the development of relations in association and cooperation throughout the production

process flows agricultural raw materials , but also on processing and selling agricultural products. [6]

The individual subsistence farms, face the lack of strong associative structures that prevail in the market, lack of financial resources, difficulties or even rejection in lending to the agricultural sector. Because of unassociation and lack of financial resources, Romanian agriculture face a lack of logistical and technical elements strictly necessary for a competitive agriculture. Thus there is a shortage of storage facilities and packaging production, irrigation systems, machinery and equipment . Mistakes and shortcomings are complemented by dissolution inability for sale, improper use of pesticides and fertilizers, lack of knowledge in the scientific approach to agriculture, etc.Unfortunately, despite numerous attempts, no economic mechanism is optimal and economic levers are not capable enough to support and to lead modern agriculture.

Measures taken at the legislative level to stimulate associations in the agricultural sector have not led to the expected results on the competitiveness of Romanian agriculture , which is still confronted with a high degree of fragmentation of land , ie the number of farms , which leaves no realization of modern farms whose economic performance should be competitive and should contribute effectively to national economic growth .

The current Minister of European Funds , Cristian Ghinea , pointed remarkable in Conference about investment rural financing, dated April 21, 2016 held in Iasi , that the policy to support growth in the agricultural sector is not consistent and convergent ' rural development funds are not just money you have to tick that I spent , but we need to develop rural areas. In Romania we have two agriculture . One fragmented , formed in households working surfaces in each hectare , and the second , made up of large, high working surfaces . And areas where large farms are developed (Vaslui, Bărăganului area , Oltenia) have very many poor people in rural areas. The question was " What we want to develop agriculture or rural areas ? "

Agriculture,as the economic sector contributes to economic growth at the national level through activities especially done by big agricultural companies or through different associations . The contribution of individual farms is minimal .

The relatively small number of associative structures created by national agriculture is not possible for attract and / or investments, which should make a significant contribution to national economic growth .

Table 1 : Contribution of Resource categories to the formation and GDP growth during the forecast period 2016-2019

%

	2016	**2017**	**2018**	**2019**
Industry	22,8	23,2	23,5	23,7
Agriculture, Forestry, Fishing	4,7	4,6	4,4	4,3
Construction	7,3	7,4	7,5	7,6
Services	52,7	52,5	52,5	52,5
Gross added value (total)	87,5	87,7	87.9	88,1
Net taxes on products	12,5	12,3	12,1	11,9
Gross domestic product	100,0	100,0	100,0	100,0

Source: National Commission for Prognosis
[7]

Given this situation forecast economic growth in 2015 was as follows :

Table 2: Contribution categories of resources formation and GDP growth in 2015 %

	Share in GDP	**Contribution to GDP growth**
Industry	23,2	0,5
Agriculture, Forestry, Fishing	4,2	-0,4
Construction	7,4	0,6
Services (total)	53,0	2,4
Gross added value (total)	87,8	3,1
Net taxes on products	12,2	0,7
Gross domestic product	100,0	3,8

Source: Eurostat

While National Prognosis Commission , provide a contribution to the economic growth of the sector " agriculture, forestry, fishing " for 2016 by 4.7% (Table 1) , was realized an increase of 4.2% (Table No. .2).

As shown in Table No. 2, the "Agriculture" in 2015 had a negative contribution to GDP growth . Eurostat estimates that agriculture , although it is one of the important markets of Romania, has a remarkable potential ascension that contributes to national economic growth in 2015 with 14.8 billion euros, 11% lower than that achieved in 2014 .

Also according to Eurostat, in 2015 Romanian agricultural production structure by main market segments is as follows:

Table 3. Structure of Romanian agricultural production by main market segments

Year 2015	**Absolute value -Mld. euro**	**Relativ value - %**
Crop production	9,1	62
Animal production	3,9	26
Others	1,5	10
Services	0,2	2

Source : Eurostat

CONCLUSION

All analyzes, reports, studies show that only an agriculture based on association or cooperation is viable and efficient nationwide. The lack of effectiveness tests to date may be motivated by the discrepancy between Western models considered in setting policies and targets, to the social, economic and country specific culture.

Also, transition to a taxed agriculture that operate on the basis of economic and trade clearly is not favored by producers, given its implications (driving record keeping, lack of knowledge of marketing and business management, fear of big importers, etc).

Only by converging actions on overcoming the mentality of producers who are anchored in the past it sould be adopt effective policies. State can help stimulate the associative spirit and therefore increase the total contribution of the agricultural sector in national economic growth.

REFERENCES

[1] https://www.scribd.com/doc/297026500/Profilul-Agricultorului-Roman
[2] " De ce nu este atractivă asocierea. Sprijinul din fonduri europene pentru asocierea în agricultură", pag 1, autori Lucian Luca, Alexandra Toderiță, (Centrul Rômânde Politici Publice, Fundația Româno-Americană), iunie 2012).
[3] Păun Ion Otiman, Nicoleta Mateoc Sârb, Camelia Mănescu-Economie rurală, Editura Mirton Timişoara 2013.
[4] "Programul de convergență 2016-2019", pag. 10, Guvernul României, aprilie 2016.
[5]http://www.insse.ro/cms/files/statistici/comunicate/com_anuale/ocup-somaj/somaj_2014r.pdf.
[6]http://www.managusamv.ro/fisiere/file/DOC_CERCETARE/Proiect_PNII_nr_3168_2007/Baza%20de%20date2/Despre%20asociere%20si%20grupuri%20de%20producatori_files/Forme%20asociative%20in%20%20agricultura.pdf.
[7]http://cursdeguvernare.ro/prognoza-cum-va-evolua-structura-economiei-in-urmatorii-trei-ani.html.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
S G E M 2 0 1 6

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

SMALL AND MEDIUM-SIZED ENTERPRISES IN THE CONTEXT OF THE SLOVAK AND EUROPEAN INTEGRATION

Prof. h. c. doc. Ing. Monika Hudáková, PhD.[1]

PhDr. Marek Vrbinčík [2]

doc. PhDr. René Pawera, PhD. [3]

Ing. František Vojtech, PhD. [4]

[1] School of Economics and Management of Public Administration in Bratislava, Department of Small and Medium Enterprises - **Slovakia**

[2] University of Ss. Cyril and Methodius in Trnava, Faculty of Social Sciences - **Slovakia**

[3] Comenius University in Bratislava, Faculty of management - **Slovakia**

[4] School of Economics and Management of Public Administration in Bratislava, Department of Small and Medium Enterprises - **Slovakia**

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

ABSTRACT

The aim of this article is to analyse the impact of European and Slovak legislation on small and medium-sized enterprises during the period of observation. The basis for determination of small and medium-sized enterprises /SMEs/ is the definition of the European Commission. The fundamental legal regulation determining constraints of business is our Commercial Code. The definition of SMEs has been implied in our legislation only since 1995 as amended by Act no. 100/95 Coll. of laws regarding to state aid for SMEs. By comparison of the economic development and the legislation development in this area, in Article we want to point out whether the legislation has had a positive or negative effect on small and medium-sized enterprises within observed period.

Keywords: small and medium-sized enterprises, economic development

INTRODUCTION

If we want to analyze the impact of European and Slovak legislation on SMEs, we should firstly assess the current situation in this area. Primarily, it is the attitude of new government in its declaration in the question of small and medium-sized enterprises. "Small and medium-sized enterprises (hereafter "SMEs") are considered by the government and the Economy Ministry as a key presupposition for economic growth and development in the regions. This will require greater involvement in the production and supply networks as well as international companies operating in Slovakia. In support of improving conditions for SMEs, the government will focus mainly on improving the legislative and administrative conditions of provided services and the creation of incentives to promote entrepreneurship" [1]. This would mean that even if the existing legislative conditions for forming small and medium-sized enterprises in Slovakia had negative effects, there is a way how to change this state. Obviously it must be done in accordance with our membership obligations in the EU. "The European Union in the current period represents the concentration of political and economic power" [2].

1 THE LEGISLATIVE FRAMEWORK OF SMALL AND MEDIUM-SIZED ENTERPRISES IN EU

The definition of SMEs is based on the recommendations of the European Commission no. 96/280 / EC of 3 April 1996. In a single market without internal borders it is essential that measures in favour of SMEs were based on a uniform definition. Enforcing of this definition has been extended throughout the whole European Union. On May 6 2003, The Commission adopted new recommendation to take into account economic development since 1996. Entered into force on 1 January 2005 and it applies to all policies, programs and measures for SMEs carried out by the Commission. The use of this definition is optional for Member States.

In the annex of Commission Recommendation 2003/361 / EC in Title 1 where is determined the definition of SMEs. According to new definition in Article 1, by enterprise we understand any entity, regardless of its legal form, engaged in economic activity. By the new definition of SMEs formally established in the recommendation, its range is now clearly defined. Therefore, enterprises can also be seen as self-employed persons, family companies, partnerships and associations regularly engaged in an economic activity. The decisive factor is therefore the economic activity and not the legal form [3].

Article 2 determines thresholds criteria according to which these businesses sheet total. Medium-sized enterprises could also include businesses that employ fewer than 250 people and which either have an annual turnover does not exceed € 50,000,000 or an annual balance sheet total does not exceed € 43,000,000. Small businesses are defined as enterprises which employ fewer than 50 people and whose annual turnover or annual balance sheet total does not exceeding € 10,000,000. Micro enterprises are defined as enterprises which employ fewer than 10 people and whose annual turnover or annual balance sheet total does not exceed € 2,000,000 [3].

Other important articles include Article 3, which refers to the independence of the company. Stand-alone company is the one that is completely independent, i.e. it does not have any interest in other companies , nor any other company has involvement in the enterprise, or owns less than 25 % of the capital or voting rights (whichever is greater in proportion) in just or more companies. To the contrary, outside entities do not have 25% or more of the share capital or voting rights (whichever is greater) in the enterprise. If the company is independent, it means that it is not a partner of another enterprise or linked to another company. Article 3, paragraph 2 defines business partner. This type of relationship represents the situation in which companies are linked with other enterprises major financial partnerships without being in possession of one undertaking effective direct or indirect control over another company. Partners are enterprises which are neither independent nor interdependent. They own more than 25 % but not more than 50% of the primary capital or voting rights in other company or other company owns at least 25 % but not more than 50% in this company.

Type of business which we refer to as linked is defined in Article 3, paragraph 3 which states that two or more companies are linked, provided that they include any of the following relations:

- one enterprise holds a majority of shareholder or member voting rights in another enterprise

- one company can appoint or remove a majority of the members of the executive, management or supervisory body of another enterprise,

- an agreement between companies or establishing social contract or the statutes of the company allowing one company to exercise decisive influence over the other company

- one company can have, based on the agreement , an exclusive control over the majority of shareholders or member voting rights of another company [3].

"Micro, small and medium-sized enterprises (SMEs) are the engine of the European economy. They are an essential source of job opportunities, create entrepreneurial spirit and innovation in the EU and they are therefore critical support competitiveness and employment. The new SME definition, which has entered into force on 1 January 2005, represents a decisive step towards improving the business environment of SMEs and its aim is to promote entrepreneurship, investment and growth. This definition had been formed on the basis of extensive consultations with interested participants, which proves that listening to SMEs is the key to the successful implementation of Lisbon goals" [4]. This definition was confirmed and emphasized in Commission Regulation (EU) No. 651/2014 of 17 June 2014 declaring certain categories of aid to be compatible with the common market pursuant to Articles 107 and 108 of the Treaty, in particular in Annex 1.

2 THE LEGISLATIVE FRAMEWORK OF SMES IN THE SLOVAKIA

Slovak legislation has adopted the regulations of the EU also in the definition of small and medium-sized enterprises. Those we have mentioned in the previous chapter. Legal

presumptions of business, i.e. how to start a business entity and how to ensure its operation is provided by the Commercial Code and relating directives. Obviously, there is Trade Law for self-employed people. Currently Slovak Republic has no law that would comprehensively deal with small and medium-sized businesses and which would be in unity with EU legislation. The draft law on support of small and medium–sized enterprises (SMEs) takes into account new schemes of direct and indirect aid.

The Ministry of Economy regulates notions in the Slovak legislation from European terminology regarding sector of SMEs. Some of these examples are test of the effects of legislation for small and medium-sized enterprises (known as SME test), envoy for SMEs (known as SMEs Envoy), an equity instrument, and business coaching and mentoring. At EU level, support for small and medium-sized businesses has been a priority for almost a decade.

In many European countries you can find SBA, An Action Plan for business 2020 and many other initiatives to support SMEs. The Act currently under preparation follows the European Small Business Act, a part of which is also a mechanism for testing the impact of legislative changes. In 2008 Slovak Republic signed up to the SBA (Government Resolution no. 969/2008). The government reaffirmed its commitment in 2012 in its policy statement.

The way how the development of legislation works in the question of supporting SMEs could be reviewed according to the results which are stated in "Statement of SMEs condition in the Slovak Republic" issued on yearly basis. In this statement you can find the general view of the business environment development, SMEs and the forms of its support. As the year 2015 has not been evaluated yet, we shall focus on year 2014. Mentioned year was characteristic by significant changes in the legislative framework for business. It was the Tax Payment System which went through the most significant modifications. Right at the beginning of the year some changes were introduced; Tax License was established for legal entities (hereafter LE), withholding tax, for payments to off-shore countries, the conditions for deduction of tax losses changed, a withholding tax was introduced but at the same time tax rate for LE decreased to 22%. Subsequently, there were some amendments in depreciations, maximum financial rates for buying automobiles was introduced as well as an 80% rule for buying the possession for personal consumption. Certain changes were made in the question of passing recapitulative statements to GDP and system of tax collection on motor vehicles. As positive could be marked changes in passing so called super deduction for science and research as well as introduction of the tax deduction for low paid groups of workers.

In terms of administrative burdens on business we can mention accounting entities being sorted into size groups in order to establish the individual financial statements (although different from the standard categorization of SMEs), as well as approval of changes expanding the scope of the law on the use of electronic cash registers. In addition to the above-mentioned, Strategy of external economic relations in the Slovak republic for the years 2014 – 2020 has been adopted as well as the concept of support for small, young and family farmers, which include a number of support measures [5]. This concept has been adopted by the Government Resolution no. 598 of 26 November 2014 and Strategy was adopted by Government Resolution No. 107 of 12 March 2014.

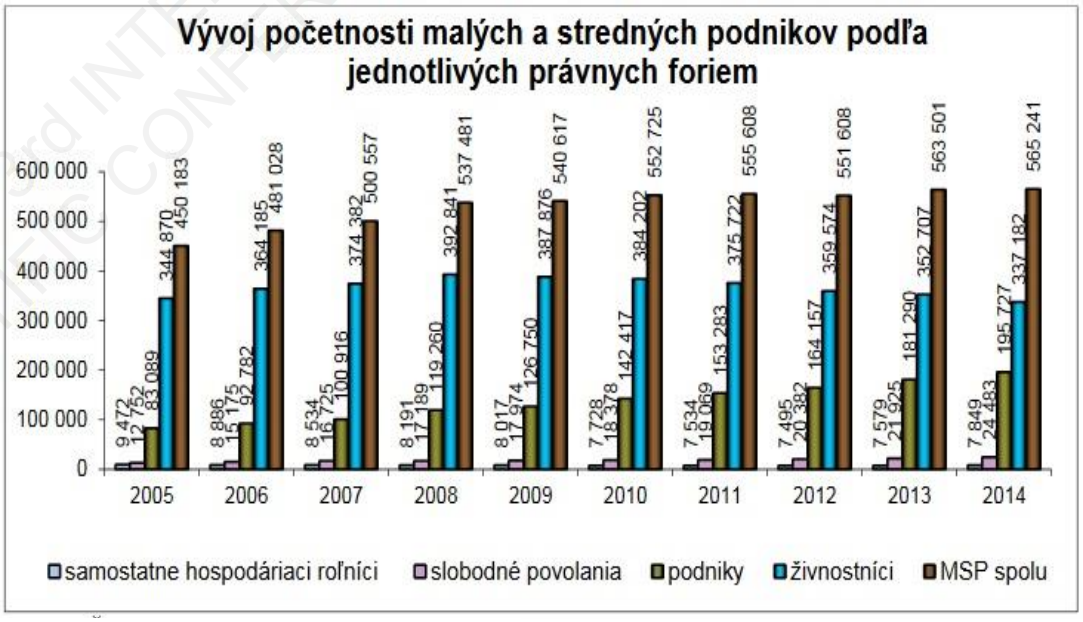
3 ECONOMIC DEVELOPMENT OF SMES IN SLOVAKIA

SMEs are the lifeblood of the Slovak economy. They provide job opportunities for about 72.7% of the active workforce and account for 53.3% of added value creation. It is important to note that "among employers, there are still prejudices that indicate the persistence of narrow-minded viewpoint on employing young people"[6]. This is not the decisive quantity of SMEs development. Basic quantitative indicator which reflects the overall quality of business conditions is the number of small and medium-sized enterprises. According to Statistical Office data, in 2014 a slight year on year increase of the number of active small and medium-sized enterprises was recorded (by 0.3%). In absolute terms the number of SMEs increased to 565,241 mainly due to the increase of small and medium-sized enterprises - legal entities by 8%.

The number of individuals - entrepreneurs decreased by 3.3%. In terms of individual size categories of enterprises in 2014 the number of micro-enterprises (0 -9) slightly increased by 0.5% and the number of medium-sized enterprises (50-249) by 0.3%. The number of small enterprises (10-49) dropped by 5%. At the end of 2014, the overall number of enterprises consisted of 96.9% micro enterprises, 2.5% of small enterprises and 0.5% of medium-sized enterprises. The share of large enterprises amounted to 0.1%.

Since 2009, the overall multiplicity of small and medium enterprises is characterized by different development trends which are recorded under different legal forms. While the number of small and medium-sized enterprises - legal persons increases every year, the number of individuals - entrepreneurs decreases in the previous six years. The decline of individuals - entrepreneurs is mainly associated with a reduction in the number of self-employed people.

Graf 1 The development of multiplicity of small and medium enterprises under different legal forms



Source: Statistical office of the Slovak Republic.

Graf 2 The development of the number of self-employed people



Source: Statistical office of the Slovak Republic.

If we compare the statistical indicators we can say that in comparison to 2013 the number of self-employed has slightly increased only in the sector of agriculture (0.6%), or by 76. The most significant annual decline of self-employed was recorded in transport, information and communication activities (by 19.1%, by 4613), then in trade by 5.9% (by 5445), in construction by 3,9% (3094), in business services by 2% (about 996), in hotels and restaurants by 1.9% (about 253), in industry by 1,8% (1039) and other services by 0.7% (about 161). Relatively significant annual decrease in the number of entrepreneurs in the transport and information and communication activities is related to the reduction in the number of self-employed within the taxi services and freight transport (by 4579). Besides objective economic factors this decrease was mostly influenced by the passage and implementation of the new framework for doing business in these areas (Law on Road Traffic), changing legislative requirements and related additional increase of administrative and financial burden.

From Graph 1 it is clear that the trend of growth in total number of SMEs continued in 2014, however, comparing to the previous year the growth was only 0.3%. While the number of micro enterprises increased by 0.5%, the fall in the category of small enterprises carried on down by 5%. In a shrinking trend the development of individuals – entrepreneurs continued but whose numbers decreased by 3,3%. Individuals - entrepreneurs still account for almost two thirds (65.4%) of the total number of active SMEs in Slovakia.

Figure 1: The number of enterprises SMEs

Year	2014	2013	2012	2011	2010	2009	2008	2007
Number	565 241	563 501	551 608	555 608	552 725	443 747	512 099	475 297

Year	2006	2005	2004	2003
Number	456 962	427 953	410 188	370 190

Source: Statistical office of the Slovak Republic.

Table 2 presents us the development of businesses in a given reference period both before and after admission to the EU. When we observe closely some of the indicators, we can say that improving the quality of the business environment has an impact on the number of business entities. At the same time by the EU accession and the gradual adoption of European legislation we have created favourable conditions for improving the business environment, which in turn has an impact on employment. Furthermore, we can say that the economic crisis of 2007 had only a minimal effect on the number of businesses. It was mostly was apparent in 2009, when there was a reduction in the number of SMEs to 68,325.

CONCLUSION

At the beginning we have set the targets to analyse the impact of European and Slovak legislation on SMEs. In the last chapter we observed that the objective has been achieved. The quality of legislation significantly affects the quantity and quality of SMEs businesses. In order to improve the business environment for SMEs development, it is necessary to assess its condition and to monitor its development. Deeper analysis of the SME sector in temporal association allows to identify existing trends anticipates future developments and preparing measures to ensure optimal development.

REFERENCES

[1] Programové vyhlásenie vlády SR, 26.04.2016. online: http://www.vlada.gov.sk/programove-vyhlasenie-vlady-sr-na-roky-2016-2020/?pg=2

[2] Bočáková. O.: Sociálna politika a sociálne zabezpečenie. s.42, Brno, Tribún EU, 2015, ISBN 978-80-263-0938-3

[3] Odporúčanie Komisie 2003/361/ES zo 6. mája 2003 o definícii mikro, malých a stredných podnikov, Úradný vestník EÚ L 124, 20.5.2003, s. 36 – 41.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016 INTERNATIONAL MULTIDISCIPLINARY

[4] Nová definícia malých a stredných podnikov, Úrad pre publikácie EÚ, ISBN 92-894-7924-8

[5] Správa o stave MSP v SR v roku 2014. Online: samp-msp.sk/sprava-o-stave-maleho-a-stredneho-podnikania-za-rok-2014/

[6] Pawera. R.: Manažment rovnosti príležitosti – mladí ľudia na trhu práce. s. 154, In: Bočáková. O., Kubíčková. D. :Sympózium sociálnych služieb vo verejnej správe, Brno, Tribún EU, 2015, ISBN 978-80-263-0959-8

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS S G E M 2 0 1 6

SOME ASPECTS CONCERNING PEANUTS CROPS ON SANDY SOILS

Dr. Milica Dima[1],

Dr. Reta Drăghici[1],

Dr. Drăghici Iulian[1],

Dr. Elena Ciuciuc[1],

Assoc. Prof. Dr. Emilia Constantinescu[2]

[1]Plants Crops Research and Development Center on Sandy Soils – Dabuleni, **Romania**

[2]University of Craiova. Faculty of Agriculture, 19 Libertatii Street, 200583, **Craiova**

ABSTRACT

For the capitalization of the climate and soil conditions for the sandy soil region in Southern Oltenia by cultivating peanuts, it is necessary to use varieties with large production abilities and a proper technology for the crops.

The fertlilizing must be done with moderate doses of chemical fertilizer: 90 Kg/ha N, 60 kg/ha P_2O_5, 60 kg/ha K_2O, the nitrogen being applied fractional, half a dose when seeding, half a dose when blossoming.

In order to create optimal conditions for the ginophores to penetrate the soil, to obtain fruitfulness, the hilling is compulsory.

In order to obtain balance pods/green pods/germinated pods, the harvest date must not outrun October the 15th. For a production of 1000 kg/hectare, the profit rate is 14%.

Keywords: peanut, sandy soils, ginophores

INTRODUCTION

Peanuts go far to the superior harness of the sandy soils in our country due to low soil fertility requirements, low consumption of fertilizers and water, soil enrichment in symbiotic fixed nitrogen. [8]

Peanut seeds are high in protein and fat[1,6,9] and can be used in food and food industries. Crop residues and by-products from industrial processing have also various uses. [8].

On the sandy soils area in the southern of Oltenia, peanuts ecopedological conditions are favorable for growth and fruiting, conditions that allow the cultivation of this species with good results [5], filling in some specific crop rotation farming system on sandy soils, instead of ameliorative vegetable.

In this writing we present the results obtained in experiments aimed at CCDCPN Dăbuleni some aspects that contribute to improve the culture technology of peanuts on sandy soils.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION SGEM 2014

MATERIAL AND METHOD

The experiments were placed in the field after the randomized blocks method and aimed to establish aspects on prevention of leaching nitrogen fertilizers, maintenance, harvesting age.

The results were processed by the variance analysis method.

OBTAINED RESULTS

After various authors (Collins and Morris, Rehm and Espig, Bertrand et al.) cited by Pop L. et al. (1986) [8] nutrients needed in the largest amount peanut crop is nitrogen, which is secured mostly about symbiotic. Phosphorus and potassium fertilizers are applied in modest doses. For sandy soils in southern Oltenia, Milica Dima (2006) [2] recommended fertilization with 90 kg / ha N, 60 kg / ha P2O5, 60 kg / ha K2O.

On sandy soils, nitrogen leaching losses applied as fertilizer are high. One of the ways that can act to reduce these losses is split application of nitrogen on several occasions. [3].

Table 1 shows the influence of the number of innings and nitrogen application timing on peanut production.

Applying nitrogen fertilizer in two innings, one from sowing to flowering and one resulted in a production increase very significantly from the average variants.

Table 1

The influence of nitrogen timing administration on the production of peanut

Number innings nitrogen management	Time of application	Production of pods Kg / ha	Difference Kg/ha	Semnification
N90	Sowing	1533	-119	
	Bloomed	1445	-207	
	After blooming	1600	-52	
N45+N45	Seeding +blooming	2285	+633	xxx
	Blooming +after blooming	1705	+53	
	Seeding+ after blooming	1440	-212	
N30+N30+N30		1560	-92	
Media Average		1652	Mt.	

DL 5%= 305 kg/ha

DL 1%= 430 kg/ha

DL 0,1%= 600 kg/ha

Ono, Y. and Ozaki, K. (1971) [7] found negative correlations between the length of ginofor and weight of pod and seed, correlations obtained by inflating its distance from the ground to strain. The same authors found that the development of the pods was hampered with the lateness of ginofor penetration into the soil. The manifestation of the influence of these correlations can be eliminated by decreasing the distance between the ground and the time required to ginofor and its penetration into the soil by the billon working. The experiments conducted at CCDCPN Dăbuleni on the opportunity of the billon working emphasized the special importance of its yields when the billoning is replaced by the fourth mechanical hoeing being equal to that produced while reducing the number of mechanical and manual hoeing for only one but doing the billon working.

Table 2

The influence of maintenance on the production of peanuts

Maintenance performed	Production of pods Kg / ha	Difference Kg/ha	Semnification
Unbillon	100	Mt.	-
1 mechanical weeding+1 manual weeding + Billon	458	358	xx
2 mechanical weeding+2 manual weeding + Billon	1200	1100	xxx
3 mechanical weeding+3 manual weeding + Billon	1505	1405	xxx
4 mechanical weeding+4 manual weeding	450	350	x

DL5%= 245 kg/ha

DL 1%= 355 kg/ha

DL 0,1%= 535 kg/ha

The timing of harvest is particularly important, as required that its placing to coincide with achieving the maximum number of mature pods per plant and achieving the

minimum number of sprouted pods , knowing the fact that for the early varieties the first seeds sprout in the ground before harvesting (Krapovickas A. quoted Rehm, S. and Espig, G., 1976) [9]. In order to establish the optimal harvesting time of peanuts at CCDCPN Dăbuleni five periods were followed for harvesting, from September 15th. (Table 3) . The maximum production was reached when the harvesting was on the 15-th of October, with a significant distinct increase beside the harvesting on the 15-th of September, after this date it begins to decrease. The increase of the production starting from September 15 to October 15 was due to rising of the mature pods against the expense of the green ones.

Table 3

The influence on production peanut harvest time

Date of harvest	Production of pods Kg / ha	Difference (kg/ha)	Signification
15 september	1083	Mt.	
25 september	1315	232	
5 october	1565	482	x
15 october	1890	807	xx
25 october	1635	552	x

DL 5%=396 kg/ha

DL 1%=580 kg/ha

DL 0,1%= 870 kg/ha

Peanuts culture stands in terms of economic efficiency, enrolling in a group of plants that generate large profits per unit of area. (Table 4). At a production of 1000 kg / ha peanut yield is a profit rate of 14% compared to 13% for tobacco production of 1300 kg / ha green leaves, 9% corn production of 55oo kg / ha grain and 3% to wheat production of 3000 kg / ha.

Table 4

Economic efficiency at some plants grown on sandy soils

Culture	Production(kg/ha)	Profit rate
Peanuts	1000	14
Wheat	3000	3
Corn	5500	9
Tabacco	13000	13

CONCLUSIONS

1. The conditions of climate and soil on the sandy soils in the southern of Oltenia are favorable to crop peanuts.

2. In order to limit the loss of nitrogen in fertilizers by leaching, the application of nitrogen fertilizer should be divided in two halves: a half of the dose for planting, half of the dose for blooming.

3. Billoning is a compulsory working, designed to create the optimal conditions for soil penetration by ginofors for exploiting.

4. Age harvesting of peanuts should not exceed the 15-th of October, after this date production losses are recorded by sprouting seeds in the soil.

5. Culture of groundnuts is economically efficient, at a production of 1000 kg / ha, profit rate being 14%.

REFERENCES

[1]Bârnaure, V., 1976- Phytotechnie tropicale, U.NA.ZA., Kisangani-Yangambi.

[2]Dima Milica ,2006- Comportarea unor soiuri și linii de arahide, în condiții diferite tehnologice, pe psamosolurile irigate din sudul Olteniei, Teza de doctorat, Universitatea din Craiova.

[3]Dorneanu, A. Și colab., 1979- Cercetări privind rezistența la levigare a diferitelor tipuri de îngrășăminte cu azot, Lucrări științifice ale SCCCPN Dăbuleni, vol. III.

[4]Gillier,P., Silvestre,P., 1969- L'arachide, Mainsonneuve et Larose, Paris

[5]Mitrea, I., 1993- Utilizarea resurselor ecologice și stabilirea principalelor verigi tehnologice pentru creștere producției de arahide pe nisipurile din sudul Olteniei, teza de doctorat, ASAS București.

[6]Minchevici,I.A., Borcovschi,V.,E., 1953- Cultura plantelor oleaginoase, Editura Agrosilvică de Stat, București.

[7]Ono,Y., Ozaki,K., 1971- Studies on peg elongation of peanut plant, in "Proceedings of the Crop Science Society of Japan, vol.40,no4, Tokio.

[8]Pop, L. Și colab., 1986- Cultura alunelor de pământ, Editura Ceres, București.

[9]Rehm,S., Espig,G., 1976- Die Kulturpflanzen der Tropen und Subtropen, Verlag Eugen Elmer, Stuttgart.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION MULTIDISCIPLINARY SCIENCES AND ARTS

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

STATE REGULATION OF ECOLOGICAL SAFETY OF SUBSOIL USE IN RUSSIA

Academician Aleksandr I. Tatarkin[1]

Prof. Dr. Margarita N. Ignatieva[1]

Prof. Dr. Elena L. Andreeva[1,2]

Docent, PhD Irina G. Polyanskaya[1]

Ph.D. candidate Vera V. Yurak[1]

[1] Institute of Economics of the Ural branch of the Russian academy of sciences, **Russia**
[2] Urals state university of economics, **Russia**

ABSTRACT

The main directions of the state regulation of ecological safety of subsoil use in the present conditions of an impending global ecological crisis are defined. These directions are environmental legislation (EL), ecological monitoring (EM), ecological standardization (ES), environmental impact analysis (EIA) and state environmental review (SER), ecological certification (EC), ecological audit (EA) and state ecological monitoring of rational use and safety of works related to subsoil use (SEM). We identify the problems of institutional capacity for environmentally sustainable development of subsurface resources associated with fragmentation, inconsistency and incompleteness of the specific measures that have been set out in Russian legislation. Elimination of these problems requires the development and adoption of new formal rules. The article justifies the necessity to assess the completeness of institutional capacity based on the greening development of mineral and raw materials potential represented as a primary mineral resources and technogenic deposits. We demonstrate the need to shift from the pollution control policy to the policy aimed at the pollution prevention or, at least, pollution restraint. The research confirms the practicability of the state regulation tools development of ecological safety in the direction of substitution the strict policing and punishment system of subsoil users with policy of financial and economic rewards for those who seek to reduce the anthropogenic impact on the environment.

Keywords: state regulation, formal rules, subsoil use, ecological safety, problems, development, institutional capacity

INTRODUCTION

Aspects of increasing the efficiency of state regulation have always been paramount. Moreover, the dynamic development of the greening of social development triggers the attention to the theme of state regulation of ecological safety. The call for "a new era of environmental development, safe for the environment" has sounded at the conference in Rio de Janeiro (1992). Nowadays, all countries for the first time agreed to limit their emissions, build capacity of resilience and to take action to address climate change on the UN climate summit in Paris (2015), which indicates the formation of an effective management system to ensure ecological safety [1, 2]. The effectiveness of state regulation of ecological safety of subsoil use depends, firstly, of the availability and

extent of the implementation of environmental legal acts and, secondly, of the development and adoption of new formal rules, contributing to the elimination of formed disparities and problems in the sphere of environmentally sustainable subsoil use. Hence, the effectiveness of state regulation of ecological safety of subsoil use depends of the level of institutional capacity of subsoil use, which means according to authors the state of the institutional foundations of innovative subsoil use, in the first place, formal rules, forming the "ability to perform functions, solve problems and set and achieve objectives" [3, p 147].

Much research on the assessment of the institutional capacity of the Arctic subsoil use in Russia was made in the Institute of Economics of Ural branch of Russian academy of science. However, it did not take into account aspects of ecological safety, which indicates a certain incompleteness of the assessment [4]. Evaluation of the institutional capacity of ecological safety of subsoil use is offered to obtain by utilizing the previously developed and currently successfully tested guidelines [3]. Analysis of the basic elements of the institutional system of ecological safety of subsoil use including regulatory and legislative support, program and project support, organizational support, financial and scientific support, within the framework of state regulation in this area should be preceded by the assessment.

STATE REGULATION OF ECOLOGICAL SAFETY OF SUBSOIL USE IN RUSSIA

The basic tools of state regulation in the sphere of ecological safety of subsoil use (figure 1) include environmental legislation (EL), ecological monitoring (EM) , ecological standardization (ES), environmental impact analysis(EIA) and state environmental review (SER), ecological certification (EC), ecological audit (EA) and state ecological monitoring of rational use and safety of works related to subsoil use (SEM).

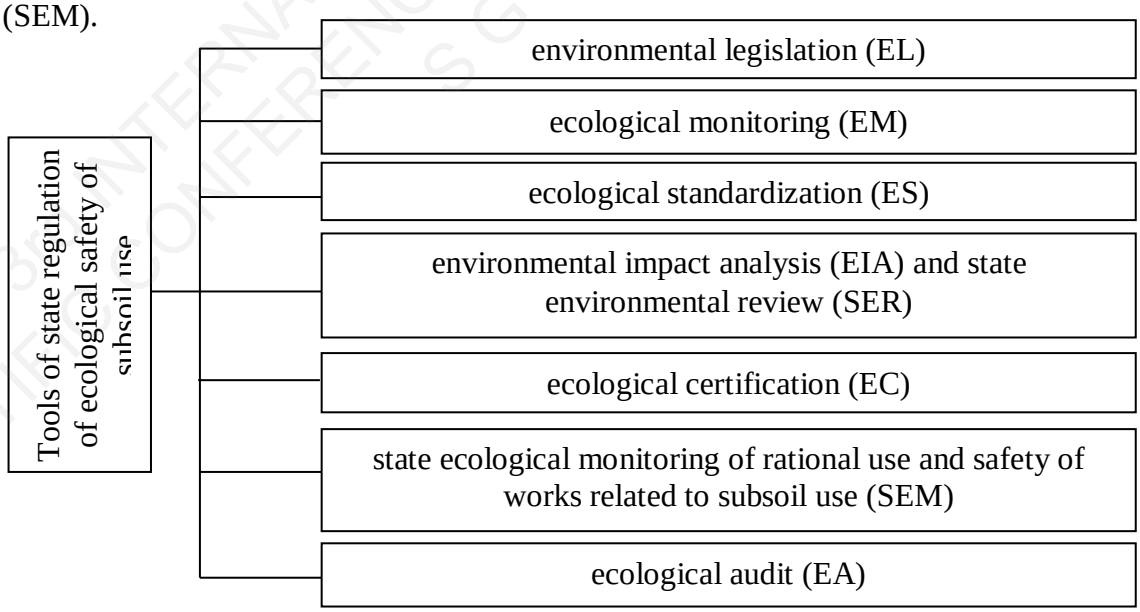


Figure 1. Tools of state regulation of ecological safety of subsoil use

Environmental legislation (EL) consists of environmental law, natural resources law and ecological norms of other branches of law. Environmental law includes Federal Law

"On protection of environment"; Federal Law "On air protection"; Federal Law "On state environmental review "; Federal Law of 24.06.1998 number 89-FL "On production and consumption waste "; Federal Law of 30.03.1999 number 52-FL "On the sanitary-epidemiological welfare of population"; Federal Law of 09.01.1996 number 3-FL "On radiation safety of the population". Natural resources law embodies Russian Law "Concerning subsurface resources"; Federal Law of 30.11.1995 number 187-FL "On the continental shelf of the Russia"; Federal Law of 17.12.1998 number 191-FL "On the exclusive economic zone of the Russia". Ecological norms of other branches of law present in the Administrative Offences Code of the Russian Federation (Chapter 8 of the Administrative Offences Code of the Russian Federation creates liability for violations of law in the field of environmental resources management); in the Criminal Code of the Russian Federation (Chapter 26 of the Criminal Code of the Russian Federation creates liability for ecological crimes); and in some of the decrees of the President of Russia, Government of Russia decrees, the normative legal acts issued by the Federal agencies of executive authority in the form of regulations, orders, rules and instructions, some departmental normative legal acts, in particular, the orders of the Ministry of Natural Resources and Environment of the Russia. The main disadvantages of, natural resources law are, firstly, that it does not fully take into account the environmental aspect, and secondly, - it requires updating and improvement. It should likewise be noted that the problems of implementation of the legal regulation mechanism of ecological safety are still open, which was confirmed by Russian President V.V. Putin in his message to the Federal Assembly of the Russia: 'We have a paradoxical situation - in fact, there are no legal mechanisms allowing to compensate for environmental damage from economic activities; Russian state lacks legal mechanisms to punish offenders who barbarically treated with nature, so we are faced with a chronic shortage of funds for environmental programs. The illusion of some economic managers is that it is possible exploiting nature make excessive profits and competitive advantage. In fact, the country obtains only a losses' [4, p. 34].

Ecological monitoring (EM) is a certain system of monitoring, evaluation, forecasting of the state of the environment and its resources; the system serves as information support of the preparation and decision-making. In Russia the activities on creation of the Unified State Environmental Monitoring System (USEMS) have been carried out since 1993, but at present special units of the observation network is reported to be inadequate. USEMS is a system of stationary and mobile monitoring stations, including posts, stations, laboratories, centers, offices and observatories.

Ecological standardization (ES) is a sat of normative legal acts utilized by the state to regulate the impact of business activities on the environment to ensure ecological safety. ES is considered as a legal institution and a function of the state regulation in the field of environmental resources management. The institution of ES remains one of the most controversial in the theory of environmental law [2, p. 231; 5]. There is an opinion that the system of ES is used in Russia only as a basis for the collection of environmental pollution payments and this is not the original purpose of this tool of state regulation. The scientific literature has repeatedly made proposals about desirability of introducing in subsoil legislation the special standards of withdrawal of subsoil assets in the context of maintenance the mineral resource security, standards of the most efficient extraction of mineral resources (instead of mineral production level). These proposed standards are a measure of the maximum agreed production level, which provide requirements of

rational use and protection of mineral resources [6, p. 244-245; 7; 8]. Subsoil legislation needs to establish specific environmental standards via the introduction of a new system of standards on the basis of the system of best available (existing) technologies BAT (Best Available Technology). This new system of standards should take into account both environmental and economic component and be aimed at the most efficient use of the whole mineral resources while ensuring requirements of environmental protection and ecological safety.

Another tool of state regulation of environmental safety of subsoil use is environmental impact analysis (EIA) and state environmental review (SER). If the significance of the EIA is amplifying (requirements for EIA are in a separate chapter now in the Federal Law "On protection of environment"), the SER in the subsoil use currently has no effective mechanisms for practical implementation because subsoil users is now effectively exempted from the need for SER after making changes in the Federal Law from November 23, 1995 № 174-FL " On state environmental review " in the part of the replacement the SER with expert examinations of planning documentations. At the same time the order of the four types of state reviews (review of mineral reserves, expert examinations of planning documentations and results of engineering survey, state environmental review, expert examination of industrial safety) established by the federal legislation are governing a large number of normative legal and instructive and methodical acts adopted at various times by different federal state governmental authorities in the absence of a single centralized control system and adequate science-based understanding of the role of state review in process of protecting the environment during the subsoil use. As a result, currently none of the above mentioned types of state reviews does not consider or take into account the ecological and legal requirements of environmental protection.

Equally important tool of state regulation of economic security of subsoil use is the state ecological monitoring of rational use and safety of works related to subsoil use (SEM). The vast majority of specialists noted the importance of the SEM as a function of the state ecological regulation pointing out its low efficiency in practice [9].

SEM aims at ensuring the reproduction of a mineral resource base its rational use and protection of mineral resources and targets to identify the violations of Russian legislation in the field of subsoil use, standards, rules and regulations in the field of geological study, rational use and protection of mineral recourses , safe operations linked with subsoil use, the rules of public accounting in subsoil use as well as the conditions of issued subsoil licenses or product sharing agreement and other civil contracts in subsoil use. There are state geological supervision (state supervision for geological study, rational use and protection of mineral recourses) and state mining supervision (state supervision for safe operations linked with subsoil use). According to subsoil legislation the principle of united state supervision is determined in the field of subsoil use. However, there is the violation of the principle in practice.

Another problem is the vagueness of the legal regulation of interaction between regional and federal authorities in the course of SEM in ecological safety of subsoil use.

In regard to ecological certification (EC), effective tool of state regulation of ecological safety of subsoil use stands the certification of quality management system of ecological environment, the assessment of compliance of environmental management system to requirements of international standard ISO 14001 QMS "Quality management system of

the ecological environment. General requirements and recommendations for use." Taking into account that the current EC for enterprises is voluntary, the state regulation of this process is very small although the effectiveness of EC is highly evaluated. According to the survey of 500 companies in France, Germany, the Netherlands and the UK more than 80% of firms believe EC is effective, 60% return on their investment within a year, and about 80% are sure of making a profit in the long term [10, p. 223].

An effective tool of state regulation of ecological safety in the circumstances of redundancy in the state ecological control bodies in Russia (a modern structure of which is shown in table 1) can be an *ecological audit (EA)*. It is an independent, comprehensive, documented assessment of the compliance with the requirements of agent of economic and other activities including standards and regulations in environment protection, the requirements of international standards and preparing process for the recommendations to improve such activities (FL "On protection of environment"). The main problem of implementation of the ecological audit in practice is the deficiency of the normative legal framework for regulation, as a result, there is no legal effect of the results of initiative ecological audit in contrast, for instance, from the results of the SER. So, legal liability regulated by environmental law arises for violation of legislation on state environmental review. It should also be noted that the results from ecological audit are not currently binding.

Table 1. The structure of agencies of executive authority in the field of ecological safety in Russia

Agencies of executive authority regulating the issues of ecological safety in Russia	
Ministry of Natural Resources and Environment	– Federal Agency for Water Resources; – Federal Agency for Forestry; – Federal Agency for Subsoil Use; – Federal Service for Hydrometeorology and Environmental Monitoring; – Federal Service for Supervision in the Sphere of Natural Resource Use
Ministry of Agriculture	– Federal Agency for Veterinary and Phytosanitary Supervision; – Federal Agency for Fishery
Government	– Federal Service for Environmental, Technological and Nuclear Supervision – Federal Service for Consumer Rights and Human Welfare Protection
Ministry of Economic Development	– Federal Service for State Registration, Cadastral Records and Cartography – Federal Agency for State Property Management
President	– Federal Security Service – Ministry of Civil Defense, Emergencies and Disaster Relief
Ministry of Industry and Trade	– Federal Agency on Technical Regulation and Metrology

CONCLUSION

All of the mentioned tools of the state regulation of ecological safety of subsoil use are the administrative tools of the state regulation of ecological safety of subsoil use characterized by lack of flexibility and excessive costs. The current challenge is to expand the scope of economic tools of the state regulation of ecological safety of subsoil use which are capable to produce substantial incentives for conserving the ecological environment.

Research and analysis of the institutional environment for assessing the level of institutional capacity of ecological safety of subsoil use on the considered areas of state regulation in conjunction with the specific tools of the institutional system will clarify the already produced assessment of the level of institutional capacity of subsoil use in Russia and will help to define the directions for further improvement of state regulation of ecological safety of subsoil use. These directions are expected to support the idea of constructing "a new era of environmental development, safe for the environment".

ACKNOWLEDGEMENTS

This article was prepared with the financial support of the grant with number 14-18-00456 RSF (Russian Science Foundation) "Justification of the geological- ecological-social- and economic approach to the development of natural-resource potential of northern poorly known areas within the investment project "Arctic regions-Central Asia".

REFERENCES

[1] Collins A., Flynn A., Wiedmann T., Barrett J. The environmental impacts of consumption at a subnational level – the ecological footprint of Cardiff / Journal of Industrial Ecology, USA, issue 10 (3) / pp. 9–24, 2006.

[2] Myers N. Environment and security / Foreign Policy, United Kingdom, issue (74) / pp. 23-41, 1993.

[3] Tatarkin A.I. Polyanskaya I.G., Ignatieva M.N., Yurak V.V. The methodological assessment of the status and prospects of institutional and innovation subsoil use in the Arctic zone / Economy of region, Russia, issue 3 (39) / pp.146-158, 2014.

[4] Tolikov V.N., Smolina E.E. Ecological Economy / Bulletin of the University of Tambov, Series: The humanities, Russia, issue 2 / pp. 34-39, 2008.

[5] Forman R.T.T. Land Mosaics: The Ecology of Landscapes and Regions / Cambridge University Press, United Kingdom, 1995, 632 p.

[6] Agafonov V.B. Legal support of environmental protection and ecological safety of the subsoil use / Moscow: Energy Rights, Russia, 2014, 231 p.

[7] Hyne N.J. Nontechnical Guide to Petroleum Geology, Exploration, Drilling and Production / 3rd ed. PennWell Corporation, USA, 2012. XXXV, 698 p.

[8] Dai F.Q., Nan L., Liu G.C., Assessment of regional ecological security based on ecological footprint and influential factors analysis: a case study of Chongqing

Municipality, China / International journal of sustainable development and world ecology, United Kingdom, issue 17 (5) / pp. 390–400, 2010.

[9] Brinchuk M.M. The role and importance of the state ecological control / Legal problems of state, municipal and other types of ecological control in Russia: Materials of the round table, Russia, (Moscow, April 9, 2008) / pp. 10-13, 2008.

[10] Anisimov A.V. Environmental management / Monograph, Russia, Rostov-on-Don: Phoenix, 2009, 348 p.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS S G E M 2 0 1 6

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

STATISTICAL ANALYSIS AND FORECASTING OF RAIL TRANSPORT ACCIDENTS IN THE CZECH REPUBLIC

MSc. Jana Motykova

Assoc. Prof. Dr. Libor Svadlenka

University of Pardubice, Jan Perner Transport Faculty, **Czech Republic**

ABSTRACT

Transport accidents are significant components of the crisis management of every transport services provider. Safety in transport has gained increasing importance over the last few years. The Transport Policy of the Czech Republic for 2014 – 2020 with the Prospect of 2050 defines the goals determining process of traffic safety development. This paper will be focused on rail transport, especially on accidents. Rail transport is an important part of the transport system in the Czech Republic because of the railway infrastructure's density.

In the monitored period 2008 – 2015 the accidents in rail transport had relatively declining trend. The aim of this article is to analyze accidents in rail transport in the Czech Republic in the period 2008 – 2015 and forecast future course for the year 2016. In the first step it will be recognized the seasonal trend of the time series of accidents in rail transport. In case that the time series will have a seasonal component, it must be cleaned of its impact. After seasonal analysis will be investigated the trend component of the time series by the growth characteristics, the chart analysis and the Theil's coefficient. If the time series would include the trend component, we should be able to forecast the accidents in rail transport for the year 2016.

Keywords: safety, accidents, rail transport, time series

INTRODUCTION

The transport is one of the tools to fulfill the needs of society. It belongs to the everyday life of all people. Railway transport is the most traditional mode of transport and it seems to be irreplaceable in the Czech Republic. There is transported half a million people and more than quarter of million tons of goods by railway every day in the Czech Republic. This is the reason why it is necessary to pay attention on safety in the rail transport and on elimination of rail transport accidents. [3], [5], [7]

§ 49 of the Railways Act defines an accident in rail transport as *"a serious accident, accident or danger in the rail transport that threatens or impairs safety, regularity and smoothness of rail transport, the safety of persons and the safe function of buildings and equipment or threatens environment."* During the period 2008 – 2015 were happened on average less than 1200 accidents per year in rail transport meaning on average 3 accidents per day. The goal of all transport services providers is to reduce incidents to the lowest possible level. [1], [10]

Statistics of accidents in rail transport are led by an infrastructure manager since 2008 in the Czech Republic. Infrastructure manager distinguishes accidents depending on the impact that event has, respectively what is the size of human and material losses. This segmentation is specified in Regulation D17 for the reporting and investigation of incidents and detailed specifications are described in the Provision D17-1 related to above mentioned Regulation D17. [8], [9]

The goal of this paper is to find out the trend of the rail accidents by the statistics methods. If the trend is find out, rail transport accidents could be predicted for the year 2016. The result of prediction can be authoritative indicator for the management of transport providers in terms of prevention of accidents.

MATERIALS AND METHODS

Infrastructure manager keeps detailed statistics about the occurrence of rail transport accidents in the Czech Republic. The statistical data about accidents in rail transport related to the period 2008 – 2015 are the base for this paper. The input data (time series) have to be adjusted of calendar and seasonal variations before the estimation of the rail accidents trend.

Adjustment of time series of calendar variations is particularly important for the reason that the data of rail transport accidents are related to different time intervals. Some months last 31 days, some 30 days and February has only 28 or 29 days. So we have to recalculate all seasons to the unitary time interval. Then the results of statistical analysis won't be misleading. This operation is called an adjustment for calendar variations and it is performed by the following Formula (1). [2], [4]

$$y_t^{(o)} = y_t \frac{\bar{k}_t}{k_t} \tag{1}$$

When the value y_t is the value of adjusting indicator in the relevant period of the year t (in our case it is the number of rail transport accidents in the relevant month and in the relevant year). The value $\bar{k}_t$ indicates the average number of calendar days in the relevant time interval of the year. And the value k_t indicates the number of calendar days in the relevant time interval of the year. [2], [4]

Consequently, it is necessary to test the time series if a seasonal component is included. A seasonal component is found out by the F-test when we test the null hypothesis H_0 = *the model doesn't include a seasonal component* beside the alternative hypothesis H_1 = *the model includes a seasonal component.* The F-test is given by the Formula (2): [2], [4], [6]

$$F = \frac{\dfrac{m\sum_{j=1}^{r}(\overline{y_{.j}} - \bar{y})^2}{r-1}}{\dfrac{SR}{(r-1)(m-1)}} \tag{2}$$

where F indicates the generally testing criterion, m refers to the number of years in the observed time series, r refers to the number of seasons in observed time series,

$\overline{y_{.j}}$ indicates the average of values in the season *j*, $\bar{y}$ indicates the average of all values in the monitored period, *SR* indicates the residual sum of squares and it is given by the Formula (3). [2], [4], [6]

$$SR = \sum_{i=1}^{m}\sum_{j=1}^{r}(y_{ij} - \bar{y})^2 - r\sum_{i=1}^{m}(\overline{y_{i.}} - \bar{y})^2 - m\sum_{j=1}^{r}(\overline{y_{.j}} - \bar{y})^2 \quad (3)$$

In Formula (3) the variable $\overline{y_{i.}}$ refers to the average of values in the year *i*, y_{ij} refers to the value in the year *i* and in the season *j*. Other variables mentioned in the Formula (3) are the same as variables defined in the Formula (2). [2], [4], [6]

The existence of a seasonal component is verified by the Formula (4): [2], [4], [6]

$$F \succ F_{1-\alpha;(r-1);(r-1)(m-1)} \quad (4)$$

The result of the generally testing criterion *F* is compared with the critical value $F_{1-\alpha;(r-1);(r-1)(m-1)}$ where α is the significance level, *(r – 1)* and *(r-1)(m-1)* are degrees of freedom. If the Formula (4) is valid i.e. the value of testing criterion *F* falls into the critical area, we should reject the null hypothesis H_0 and we should accept the alternative hypothesis H_1. Alternative hypothesis says that the model includes a seasonal component. After the rejection of the null hypothesis, it is necessary to make the seasonal adjustment of time series for the reason that a seasonal component (seasonality) could cause irrelevant results. In this case the time series was adjusted by the dimensionless seasonal index because the model has had the characteristics of the model with proportional seasonality. The trend component was divided by this seasonal index. Thus adjusted time series is applicable for estimating the trend of rail accidents. For the purpose of this paper the trend was estimated by growth characteristics, graphical representation and the Theil's coefficient. The trend estimation using the growth characteristics is based on the progress of the growth characteristics described in the Table 1. [2], [4], [6]

Table 1: The trend estimation using the growth characteristics

Growth characteristics	Progress of growth characteristics	Trend
$\bar{\Delta}_t$	Approximately constant	Line
$\bar{\Delta}_t$	Approximately increasing	Parabola
$\frac{\bar{\Delta}_t}{\bar{y}_t}$	Approximately constant	Exponential
$\log \bar{\Delta}_t$	Linearly decreasing	Modified exponential
$\log \frac{\bar{\Delta}_t}{\bar{y}_t^2}$	Linearly decreasing	S-curve
$\log \frac{\bar{\Delta}_t}{\bar{y}_t}$	Linearly decreasing	Gompertz curve

Source: [6]

The trend estimation using the graphical representation is carried out in MS Excel where the time series is putted into the graph. The trend function and the value of

reliability *R* are generated from the graph. The reliability value indicates the degree of reliability of the estimated trend function and it is defined by the interval $\langle 0;1 \rangle$. The more the value approaches 1, the more reliable trend function is. [6]

The trend estimation using the Theil's coefficient is based on the analysis of past behavior of the time series. This is extrapolation forecast of the future progress. From the analyzed part is separated part of the observations which will be extrapolated. Respectively, the separated part is tested from the ability to predict. The degree of forecasting quality is given by the discrepancy coefficient. Discrepancy coefficient is the difference between the simulated forecast and already known reality. Theil's coefficient of the discrepancy is given by the Formula (5): [2]

$$T_H^2 = \frac{\sum_{j=1}^{D} \left(y_{N+j} - \hat{P}_j \right)^2}{\sum_{j=1}^{D} y_{N+j}^2} \tag{5}$$

where *N* refers to the reduced length of the time series, *D* refers to the reduction of the time series, $\hat{P}_j$ indicates the extrapolation for the *j* seasons which were estimated by the first *N* observations of the time series. For the direct use of the Theil's coefficient is recommended the value in Formula (6). [2]

$$T_H = \sqrt{T_H^2} * 100 \tag{6}$$

The value mentioned in Formula (6) is interpreted as relative error of extrapolation given by %. If the Theil's coefficient is in the range 3 – 5 %, the mistake of the prediction will be considered as small and the researched model will be good tool for forecasting. If the Theil's coefficient is in the range 5 – 10 %, the further use of the model won't be excluded for the extrapolation. But if the Theil's coefficient is more than 10 %, the analyzed model won't be useful for a quality prediction. [2]

RESULTS

The base for the analysis of the rail transport accident were the numbers of accidents in each months of the period 2008 – 2015 that were adjusted for calendar variations. Consequently authors found out a seasonal component in the time series by the F-statistics. When the value of testing criterion *F = 2,296* were compared with the criterion value $F_{0,95;11;77} = 0,405$. The Formula (4) and the alternative hypothesis were confirmed. The time series was adjusted for the seasonal variations by the seasonal index. Thus adjusted data were used as the input data for the estimation of the rail transport accidents trend.

The trend estimation using the growth characteristics were used first of all mentioned methods. According to the procedure described above and according to the baseline Table 1, it was found that the time series could have an exponential trend because the value $\frac{\overline{\Delta_t}}{y_t}$ is in the range from *-0,07* to *0,05*. Given the relatively low volatility, this value can be described as approximately constant, as shown in Table 1. Because the

time series function could have the exponential trend, the next step is a validation of this hypothesis by the parameter estimation of the trend function given by Formula (7): [2]

$$T_t = a_0 a_1^t \tag{7}$$

where $a_1 > 0$, $t = 1, 2, \ldots, n$. Parameters a_0 and a_1 are calculated by the Formula (8) and (9). [2]

$$\log \hat{a}_0 = \frac{\sum\left(y_t^2 \log y_t\right)\sum\left(t^2 y_t^2\right) - \sum\left(ty_t^2\right)\sum\left(ty_t^2 \log y_t\right)}{\sum y_t^2 \sum\left(t^2 y_t^2\right) - \left(\sum ty_t^2\right)^2} \tag{8}$$

$$\log \hat{a}_1 = \frac{\sum\left(ty_t^2 \log y_t\right)\sum\left(y_t^2\right) - \sum\left(ty_t^2\right)\sum\left(y_t^2 \log y_t\right)}{\sum y_t^2 \sum\left(t^2 y_t^2\right) - \left(\sum ty_t^2\right)^2} \tag{9}$$

In case of this paper, values of the variables according to Formulas (8) and (9) were calculated as follows: $\log \hat{a}_0 \approx 2{,}119$ a $\log \hat{a}_1 \approx -0{,}002$. Because of the condition belongs to the Formula (7) it can be said that the time series doesn't have the exponential trend. Subsequent method for the estimation of the trend is the graphical representation executed by MS Excel is mentioned on the Figure 1.

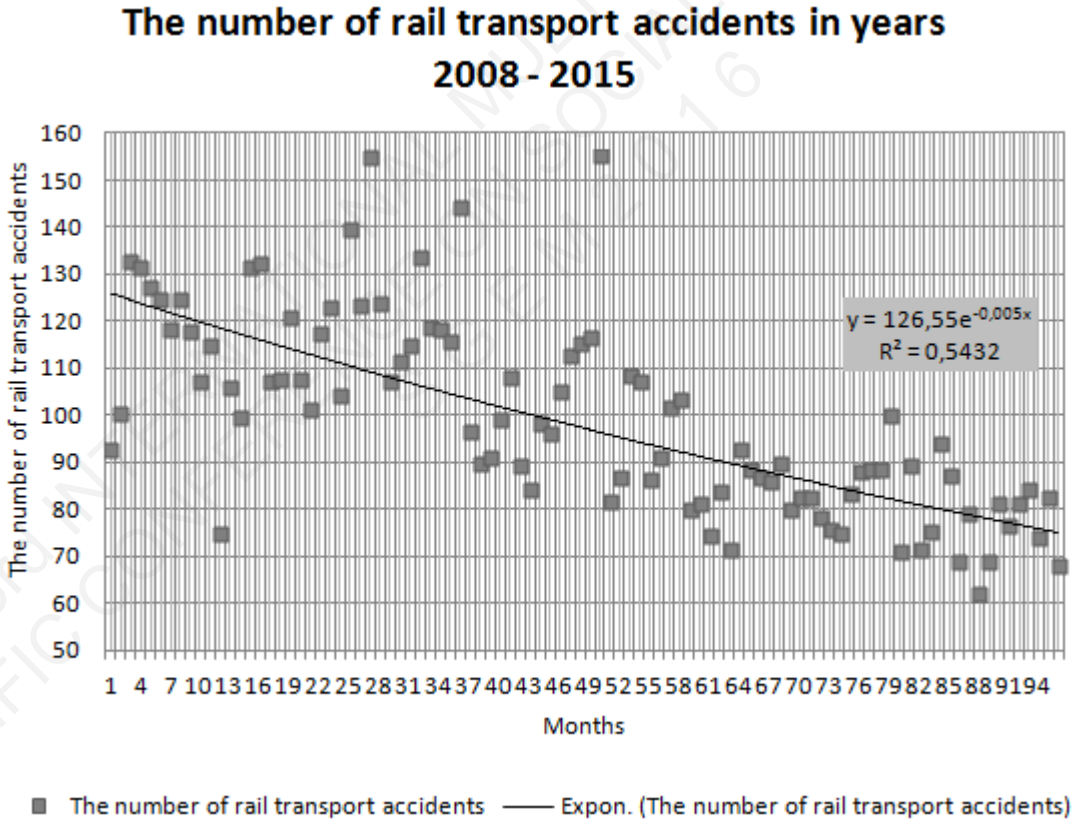


Figure 1: The number of rail transport accidents in years 2008 – 2015 [10]

The Figure 1 shows the exponential trend with the value of reliability $R^2 = 0{,}5432$. This value is nearly in a half of prescribed interval for this value. Some probability exists in this case but value of reliability doesn't confirm it at all. It is therefore appropriate to analyze the trend of rail transport accidents by least one another method. Authors of this paper chose the trend estimation using the Theil's coefficient. Authors conducted the

extrapolation of rail transport accidents for the year 2015 based on time series behavior during the years 2008 – 2014 that is mentioned on Figure 2.

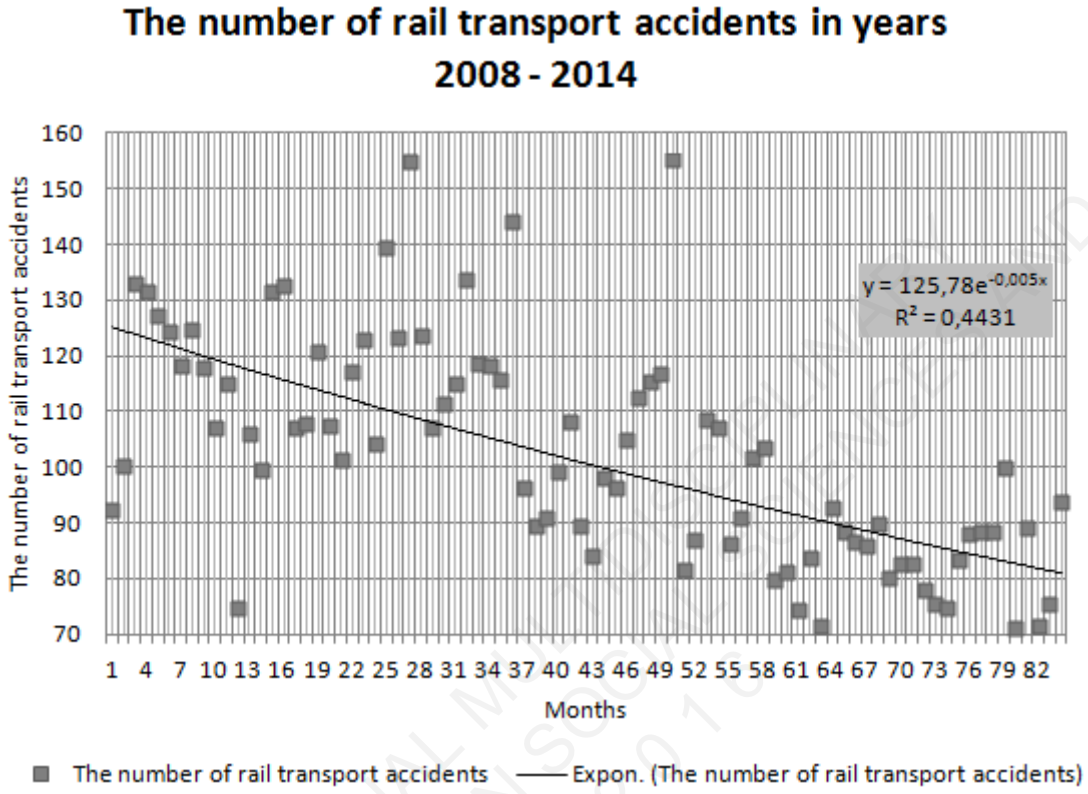


Figure 2: The number of rail transport accidents in years 2008 – 2014 [10]

The Figure 2 shows the low value of reliability R^2. It can't be clearly said that the time series of rail transport accidents from the years 2008 – 2014 has an exponential trend. The extrapolation for the year 2015 can't be clearly used. A proof of this is value of Theil's coefficient which is (according to the Formula (5)) equal to the value 0,0126. Relative error of extrapolation (according to the Formula (6)) is equal to 11,24 %. Analyzed model of rail transport accident is not useful for quality prediction according to the Theil's coefficient.

CONCLUSION

The aim of all rail transport providers is to offer and provide quality and safety service. This requires consistent statistical analysis of rail transport accidents and then rail transport accidents could be eliminated for the lowest possible level.

The goal of this paper was analyzed the rail transport accidents and found out the trend of them. The numbers of the rail transport accidents during the years 2008 – 2015 were the base of this analysis. In first step, the time series was adjusted for calendar and seasonal variations. The adjusted time series were thoroughly analyzed by three methods of mathematical statistics to the estimation of the trend.

The method of the trend estimation using the growth characteristics shows that the time series could have the exponential trend. This hypothesis was rejected during the estimation of the parameters of the trend function. The trend estimation using the

graphical representation has similar result. The exponential trend was estimated but the value of reliability was so uncertain that the exponential trend couldn't be accepted. The last analysis was the trend estimation using the Theil's coefficient. The aim of this method was extrapolation of the future values based on the last behavior of the time series. This analysis shows that this model of rail transport accidents doesn't be useful for quality prediction.

Finally it can be concluded that accidents in rail transport are so random that they can't be unambiguously predict. However, they can be analyzed in terms of the causes or of the material and human losses that cause. Then rail transport operators can prevent by different measures.

ACKNOWLEDGEMENTS

The work was created in connection with the scientific research project of the University of Pardubice SGS_2016_008. The authors are grateful for their support.

REFERENCES

[1] ČESKO. Zákon č. 266 ze dne 14. prosince 1994 o dráhách. In: *Sbírka zákonů České republiky*. 1994, p. 3041 – 3054. Available from: <http://aplikace.mvcr.cz/sbirka-zakonu/SearchResult.aspx?q=266/1994&typeLaw=zakon&what=Cislo_zakona_smlouvy> ISSN 1211 – 1244

[2] HINDLS, R., HRONOVÁ, S., NOVÁK, I. *Metody statistické analýzy pro ekonomy*. Praha: Management press, 2000. 259 p. ISBN 80-7261-013-9

[3] *Informations for transport analysis* [online]. © 2015 [cit. 2016-05-11]. Available from: <http://www.vyrocenky.cz/drazni>

[4] KUBANOVÁ, J., *Statistické metody pro ekonomickou a technickou praxi*. Bratislava: STATIS, 2008. 247 p. ISBN 978-80-85659-47-4

[5] PEŘINA, L., ZELENÝ, L., *Doprava, dopravní infrastruktura*. Praha: Vysoká škola ekonomická v Praze, 2000. 106 p. ISBN 80-245-0110-4

[6] POJKAROVÁ, K., *Ekonometrie a prognostika v dopravě.* Pardubice: Univerzita Pardubice, 2006. 97 p. ISBN 978-80-7194-868-1

[7] SŽDC. History of the railway in the Czech Republic. *SŽDC.cz* [online]. © 2009 – 2012 [cit. 2016-05-02]. Available from: http://www.szdc.cz/o-nas/zeleznice-cr/historie-zeleznice.html

[8] SŽDC. D17 Předpis pro hlášení a šetření mimořádných událostí for the reporting and investigation of accidents. *SŽDC.cz* [online]. © 2009 – 2012 [cit. 2016-05-02]. Available from: http://www.szdc.cz/dalsi-informace/dokumenty-a-predpisy/provozne-technicke.html?page=detail&docid=1%3B%2375ec707a-7b2a-4af4-8fe2-2c05aaecc6cb

SCIENTIFIC CONFERENCE ON MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL SGEM 2016

[9] SŽDC. D17 – 1 Prováděcí opatření k předpisu pro hlášení a šetření mimořádných událostí. *SŽDC.cz* [online]. © 2009 – 2012 [cit. 2016-05-02]. Available from: http://www.szdc.cz/dalsi-informace/dokumenty-a-predpisy/provozne-technicke.html?page=detail&docid=1%3B%237f8d5d59-4bea-4a70-86e8-a0717e00937b

[10] SŽDC. *Statistics of rail transport accidents in the Czech Republic in the period 2008 – 2015*

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
S G E M 2 0 1 6

STUDY OF THE EFFICIENCY OF MOTORAIL TRAINS AS A FACTOR IN TRANSPORT DEVELOPMENT

Assoc. Prof. PhD Svetla Stoilova

Technical University-Sofia, **Bulgaria**

ABSTRACT

In tourist and business transportation by trains or buses at the final destination point it is often necessary for passengers to use a car to perform their daily logistical tasks. The alternative mode of transport are motorail trains, which offer convenience for passengers to travel from door to door in their own car. Accordingly, it is very important to study the effectiveness of the organisation of motorail trains for Bulgarian railway routes along which business and tourist trips are made. Providing such services is a factor in tourist travel and transport development. The experimental research has been carried out for the Sofia-Plovdiv-Burgas railway axis. In this paper a methodology for assessing the effectiveness of the organisation of motorail trains is proposed. It comprises a few steps. In the first step, by using the AHP method, the variants of transportation by motorail trains are formed and the probabilities for stochastic variation of passengers are determined. In the second step the operating costs of transportation and financial investment for a new type of wagons are determined. The payback period has been chosen as a criterion of efficiency. In the third step a Decision Tree Analysis is performed to determine the best variant of transportation. The environmental and social benefits of the new transport technology have been determined. The results, which have been obtained, indicate that the motorail trains would be an effective technology for thatparticular railway route.

Keywords: motorail train, passengers, operating costs, AHP method, Decision Tree

INTRODUCTION

Motorail trains are a technology which allows passengers to travel from door to door in their own car. This service is also called a car shuttle train, car-carrying train or auto train. This mode of transportation is common in many countries. In Europe motorail services are available for both domestic and international transport. Some regular day and night trains include car-carrier wagons.

This paper aims to develop and propose an integrated approach for assessing the effectiveness of the organisation of motorail trains for carriage of cars and passengers on separate wagons taking into consideration multiple factors relevant for transport.

The literature studies mainly the problem of loading of vehicles onto motorail wagons. In [3, 4] the authors propose optimisation models for finding a feasible allocation of all vehicles to transportation wagons or for maximising the number of vehicles loaded on a particular loading deck. When we study the efficacy of motorail transportation it is necessary to take into account not only the operating costs but also the environmental, technological and social indicators. It is appropriate to employ methods of multi-criteria decision analysis in this case. Several methods of multi-criteria analysis such as Analytic Hierarchy Process (AHP) and Preference Ranking Organisation Method for Enrichment Evaluations (PROMETHEE) have been applied to make a decision about

Logistics and Transportation, [1, 2]. In [5] the AHP method is used for reaching the optimal decision about the mode of transportation and five factors such as cost, speed, security, punctuality and transportation capacity are compared. The needs of passengers for railway transportation are examined in [9] by using the AHP method. In these studies the researchers looked at different indicators and cases in selecting the optimal route according to specified criteria.

The novel contribution of this paper is the development of a complex methodology for assessing the effectiveness of the organisation of motorail trains by applying environmental, economic, technological and social criteria.

The proposed methodology has five steps. In the first step, by using the AHP method, the variants of transportation by motorail trains are formed and the probabilities for stochastic variation of passengers are determined. In the second step the operating costs of transportation and financial investment for a new type of wagons are determined. In the third step a Decision Tree Analysis is carried out to determine the best variant of transportation by applying the cost criterion. In the fourth step we determine the criteria for assessing the benefits of the different variants of transportation. The weights of criteria are obtained by means of the AHP Method. The prioritisation of transport schemes is made by applying the PROMETHEE Method. In the final step the Cost/Benefit method is used to choose the optimal scheme for motorail trains.

ANALYTICAL APPROACH

In the first step of methodology we have examined the following alternative transport modes of motorail trains – day, night and both types of transportation. In order to study the variation of passenger flows a scale for the increase in passengers from 0% to 30% with step of 5% has been determined. The decision approach in this phase of the methodology makes use of the AHP Method, developed in [8] to weigh the stochastic variation of passengers. The multiple pairwise comparisons have been evaluated by experts. The evaluations are based on a standardised comparison scale that is shown in Table 1.

Table 1. Comparison Scale

Definition	Intensely of importance	Reciprocal values
Equal importance	1	1
Moderate importance of one factor over another	3	1/3
Strong or essential importance	5	1/5
Very strong importance	7	1/7
Extreme importance	9	1/9
Values for intermediate comparison	2,4,6,8	1/2 ; 1/4 ; 1/6; 1/8

The AHP Method makes it possible to control the consistency of the expert judgements through the consistency ratio. Generally, if the consistency ratio is less than 0.10, the consistency of the decision-maker is considered satisfactory.

In the second step we determine the operating costs of transportation and the financial investment in new types of wagons. The operating costs for each variant of transportation of motorail trains include depreciation costs of the new type of wagons

for carrying vehicles, the costs for the movement of the train, depreciation costs of the rolling stock, the costs for salaries and social insurance of train staff, the costs for infrastructure charges. The operating costs are determined for each stochastic variation of passenger flow. The financial investment in new type of wagons is determined on the basis of the needed number of trains in the organisation of transport in the variant scheme.

The Decision Tree Analysis used to determine the best variant of transportation by means of the cost criterion is applied in third step. This is method involves a diagrammatic presentation, in the form of a tree, of various alternatives, their possible outcomes with related probabilities and their possible payoffs in a decision-making situation, [6]. The expected value (EV) of decision alternative a_i is defined as:

$$EV(a_i) = \sum_{v=1}^{V} P(b_v).R_{iv}; \quad (1)$$

where a_i – variant scheme (alternative); b_v – stochastic variation of passenger flows (states); v – number of stochastic variation of passenger flows, $v = 1,...,V$; $P(b_v)$ – probability of stochastic variations (defined by AHP Method); R_{iv} – payoff corresponding to decision alternative a_i (variant schemes) and state b_v (variation of passenger flows). In the research the payoff is expressed through the operating costs.

$$\sum_{v=1}^{V} P(b_v) = 1,\ P(b_v) \geq 0, \text{ for all } v = 1,...,V \quad (2)$$

In the fourth step the best solution, according to the benefits criterion is determined. In this step we determine the criteria to assess the benefits of the variant schemes, make use of the AHP method to define the weights of criteria, prioritise the variant schemes using the PROMETHEE method. The main criteria are divided into six groups: frequency, i.e. the number of motorail trains per day (F1); possibility for passengers to sleep during the journey (F2); possibility for passengers to enjoy their free time during the trip (F3); environmental factors (F4); preference of passengers for a day or a night trip (F5) and payback period (F6). The payback period is determined for the car transporting wagons. The environmental factors (F1) include two sub-criteria - carbon dioxide (F41) and pollutant emissions (F42). The pollutant emissions are determined by carbon oxides (CO) – sub-sub criterion (F421), nitrogen oxide emissions (NOx) – sub-sub criterion (F422), non-methane hydro carbons (NC) – sub-sub criterion (F423), exhaust particulate matter (PM) – sub-sub criterion (F424) from vehicles. The weights of the criteria are obtained by means of the AHP method.

The final step includes the selection of an optimal variant scheme by means of a Cost/Benefit ratio (r_i). The minimal cost/benefit ratio presents the optimal solution.

$$r_i = \frac{c_i}{\varphi_i} \rightarrow \min \quad (3)$$

where: c_i – normalized costs for the variant scheme *i*; φ_i – PROMETHEE score for *i* (net outranking flow) variant scheme; only the positive values of φ_i are used in the study**.** The normalized costs represent the proportion of operational costs for each of the variant schemes to the sum of the costs of all variant schemes.

EXPERIMENTAL PART AND RESULTS

The complex methodology is applied for Sofia - Plovdiv – Burgas railway line. This railway route of the Bulgarian railway network is characterised by tourist and business trips. Figure 1 shows the studied variant schemes.

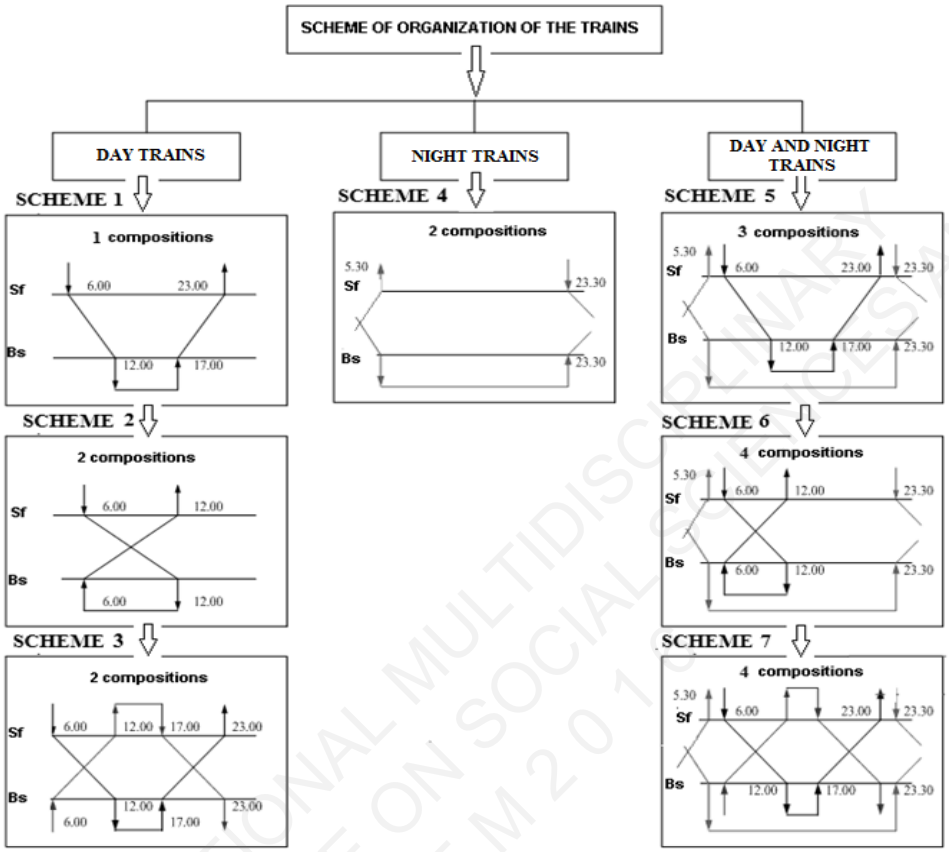


Fig.1. Variant schemes

The research includes the following alternative variant schemes: Scheme 1: one pair of motorail trains during the day, one composition used; Scheme 2: one pair of motorail trains during the day, two compositions used; Scheme 3: two pairs of motorail trains during the day, two compositions used; Scheme 4: one pair of night motorail trains, two compositions used; Scheme 5: one pair of motorail trains during the day, one pair of night motorail trains, three compositions used; Scheme 6: one pair of motorail trains during the day, one pair of night motorail trains, four compositions used; Scheme 7: two pair of motorail trains during the day, one pair of night motorail trains, four compositions used. For all variants has been assumed that there is one car transporter wagon (1DDm) in the train set. For all variants has been assumed that there are first-class wagons (A) in the train set. There is a sleeping car (WL) in the night trains. The stops of motorail trains are identical to those of the express trains. The effectiveness of the variant schemes has been assessed over a three-month period from June to August.

Table 2 shows the AHP score of the stochastic variations of passenger flows. The prioritisation of the variations is made by using the Super Decision software. The Super Decision software allows an analysis of the inconsistency (Consistency Ratio CR) of the expert scores and in this way makes it possible to measure how consistent the judgements have been. In the research the value of CR is satisfied (is smaller 0,1).

Table 2. AHP prioritisation matrix of the stochastic variations of passenger flows

Variation of passenger flows; CR=0,07								
Matrix	0%	5%	10%	15%	20%	25%	30%	Weight
0%	1	1/2	1/2	1/2	1/5	1/3	1/2	0,05
5%	2	1	1/2	1/2	1/5	1/2	2	0,08
10%	2	2	1	1/2	1/5	2	2	0,13
15%	2	2	2	1	1/3	2	2	0,16
20%	2	5	5	3	1	3	3	0,38
25%	3	2	1/2	1/2	1/3	1	2	0,12
30%	2	1/2	1/2	1/2	1/3	1/2	1	0,08

The number of wagons in the train set is changed taking into account the variation of passenger flows. A 75% occupancy of the seats is accepted in the research. The number of wagons in a motorail train is 3A and 1DDm for an increment of up to 20% in the passenger flow. The number of wagons in a motorail train is 4A and 1DDm for an increment of up to 25% in the passenger flow. The revenue was determined as the sum total of carriage fares of the passengers and cars. Table 2 presents the parameters of the variant schemes.

The weights of the stochastic variation of passenger flows are used in the Decision Tree. Figure 2 shows a segment of the Decision Tree used to determine the best variant scheme taking into account the variation of passengers. The Decision Tree Analysis is made by using Decision Tools Suite software - Precision Tree of Palisade Corporation. On the right hand side of the tree are shown the operating costs (for a period of three months) and the stochastic probabilities for each variation of passengers and each variant scheme.

Table 3 shows the prioritisation matrix and the weights of the criteria and sub-criteria. The Consistency Ratio CR is satisfied. It can be seen that the payback period criterion has the greatest weight. Second in weight is the frequency of transport criterion. The optimal scheme, according to the operating costs criterion, is variant scheme 1, i.e. one pair of motorail trains during the day, one train set used.

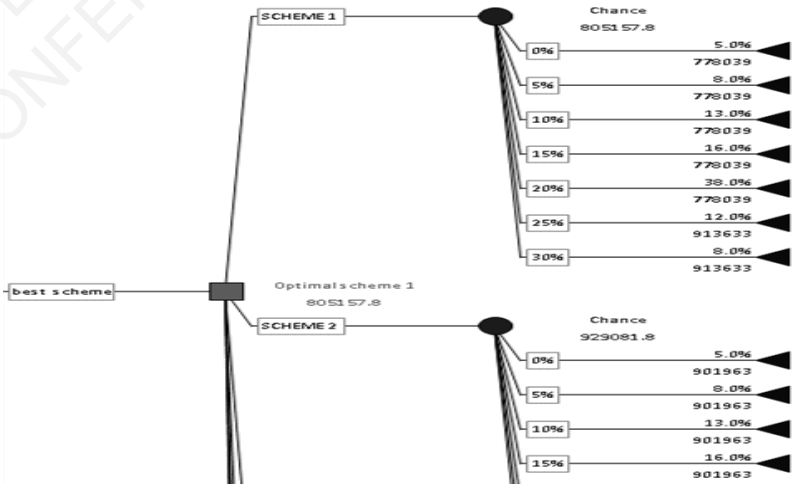


Fig.2. Segment of the Decision Tree for costs - stochastic variations of passenger flows

Table 3. AHP prioritisation matrix for the benefits criteria and sub-criteria

Main Criterion, CR=0,03	F1	F2	F3	F4	F5	F6	Weight

F1		1	2	2	1	3	1/3	0,19
F2		1/2	1	1	1/2	2	1/3	0,11
F3		1/2	1	1	1/2	2	1/3	0,11
F4		1	2	2	1	2	1	0,21
F5		1/3	1/2	1/2	1/2	1	1/3	0,07
F6		3	3	3	1	3	1	0,31
Sub – criteria, CR=0,08				F41	F42	Local Weight		Weight
CO_2			F41	1	1/2	0,34		0,07
Pollutant emissions			F42	2	1	0,66		0,14
Sub-sub-criteria, CR=0,09		F421	F422	F423	F424	Local Weight		Weight
CO	F421	1	1/3	2	1/7	0,08		0,01
NOx	F422	3	1	5	1/7	0,19		0,03
HC	F423	1/2	1/5	1	1/7	0,05		0,01
PM	F424	7	7	7	1	0,68		0,09

The results about the weights of the criteria and sub-criteria obtained by using the AHP methodology have been employed in prioritising the variant schemes by means of PROMETHEE method. Table 4 shows the values of costs and criteria F1, F2, F3, F5 and F6.

Table 4. Parameters of variant schemes

Variant	train set./day	Number and type of wagons	Cost, BGN/day	F1 Number of pairs of trains/day	F2	F3	F5	F6 years
1	1	3A,1DDm	8645	1	no	yes	0,64	3
2	2		10022	1	no	yes	0,64	7
3	2		19979	2	no	yes	0,64	4
4	2	2A,1WL,1DDm	10022	1	yes	no	0,36	10
5	3		22700	2	yes	yes	0,5	12
6	4		25422	2	yes	yes	0,5	50
7	4		38068	3	yes	yes	0,5	32
1	1	4A,1DDm	10151	1	no	yes	0,64	2
2	2		11528	1	no	yes	0,64	6
3	2		22992	2	no	yes	0,64	3
4	2	3A,1WL,1DDm	11528	1	yes	no	0,36	8
5	3		25714	2	yes	yes	0,5	8
6	4		28435	2	yes	yes	0,5	19
7	4		42588	3	yes	yes	0,5	13

The Visual PROMETHEE software [7] has been used in the research. The type of optimisation (minimum or maximum) is determined for each of criteria. The possibility to sleep during the journey (F2) criterion and possibility to enjoy free time during the trip (F3) criterion are set with ”yes” or “no”. The value of the preference of the passengers for a day or night trip (F5) criterion is determined through a survey conducted with passengers about their preferences for day or night travel. Approximately 64% of respondents prefer to travel during the day, 36% of respondents prefer to travel at night. In order to establish the values of the sub-criteria of main criterion F4 it has been assumed that an equal number of petrol and diesel cars are

loaded onto the car transporting wagon. It has also been assumed that there is an equal number of cars of Euro III and Euro IV standard. When the payback period is determined it is assumed that there are subsidies from the state for that mode of transport. Otherwise all the schemes will not be effective. Figure 3 shows the ranking of the schemes obtained with Visual PROMETHEE software. The optimal scheme according to the benefits criterion is scheme 3, i.e. two pairs of motorail trains during the day with two train sets used.

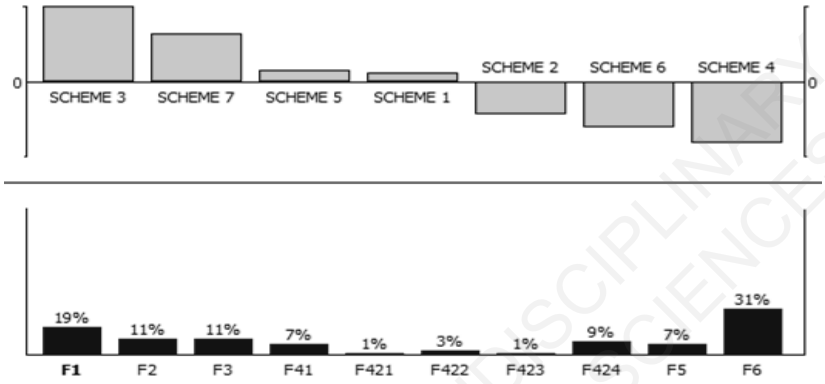


Fig.3. Ranking of train sets with Visual PROMETHEE (3A, DDm)

A careful analysis of the changes in the weight of each criterion and its impact on the results was made by using Visual PROMRTHEE. The stability intervals for the optimal decision (WSI, %) are shown in Table 5. The payback period has the smallest stability interval. The costs/benefits ratio was determined in the final step. The results are presented in Table 6. Scheme 3 is the optimal one for both train sets.

Table 5. Stability Intervals

3A,1DDm										
WSI, %	F1	F2	F3	F41	F421	F422	F423	F424	F5	F6
From,%	8,89	9,48	0	5,21	0	1,18	0	8,24	0	26,06
To,%	31,67	17,54	100	18,44	13,23	14,97	13,23	21,04	100	31,75
4A,1DDm										
From,%	14,74	10,36	0	6,22	0,17	2,18	0,17	8,24	0	25,98
To,%	32,69	18,13	100	19,31	14,10	15,84	14,10	21,04	100	31,49

Table 6. Costs/Benefits Analysis results

Variant	c_i	3A,1DDm		4A,1DDm	
		φ_i	r_i	φ_i	r_i
1	0,06	0,02	2,58	0,03	2,02
2	0,07	-0,13	-0,58	-0,12	-0,60
3	0,15	0,27	0,54	0,27	0,54
4	0,07	-0,23	-0,32	-0,23	-0,32
5	0,17	0,04	3,92	0,04	4,21
6	0,19	-0,16	-1,17	-0,17	-1,13
7	0,28	0,18	1,57	-0,23	-1,25

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION "SPACE, ECOLOGY, NANOTECHNOLOGY, SAFETY" SESAM 2014 INTERDISCIPLINARY SCIENCES AND ARTS

CONCLUSION

A complex methodology for determining the efficiency of motorail trains has been presented in this paper. Variants of the organisation of motorail trains - day, night and mixed service - have been examined for the Sofia-Plovdiv-Burgas route. The AHP method has been used to determine the weights of stochastic variation of passengers. The increase by 20% is the biggest weight of all variations (0,38). The Decision Tree method is used to determine the optimal scheme according to the operating costs criterion. The study proposes quantitative and qualitative indicators to assess the variant schemes for motorail trains. The prioritisation of the criteria made by using the AHP method shows that the payback period (0,31), the environmental factors (0,21) and the frequency of transport (0,19) have the greatest weight. The optimal scheme, according to the benefits criterion, has been determined using the PROMETHEE method. The final solution for both the operating costs and benefits criteria has been obtained through the cost/benefits ratio. The study proposes the organisation of two pairs of motorail trains during the day for Sofia-Plovdiv-Burgas railway route. The results, which have been obtained, indicate that motorail trains would be an effective technology for that particular railway route.

REFERENCES

[1] Kopytov E., Abramov D., Multiple-criteria analysis and choice of transportation alternatives in multimodal Freight transport system, Transport and Telecommunication, 13 (2), pp 148-158,2012.

[2] Kopytov E., Abramov D., Multiple-criteria choice of transportation alternatives in freight transport system for different types of cargo, Proceedings of the 13th International Conference "Reliability and Statistics in Transportation and Communication" (RelStat'13), Riga, Latvia, pp 180-187,2013.

[3] Lutter P., Werners B., Order acceptance for motorail transportation with uncertain parameters, OR Spestr, vol.37/issue 2, pp 431-456, 2015.

[4] Lutter P., Optimized load planning for motorail transportation, Computers&Operations Research, vol.68, pp 63-74, 2016.

[5] Maskeliunaite L., Sivilevicius H., Podvezko V., Research on the quality of passenger transportation by railway, Transport, vol.24/ issue 2, pp 100-112, 2009.

[6] McNamee P., Celona J., Decision Analysis for the Professional, USA: Smart Org, p.357, 2008.

[7] Moldrík P., Gurecký J., Paszek L., PROMETHEE method and sensitivity analysis in the software application for the support of decision-making, Advances in Electrical and Electronic Engineering, pp 150-153, 2010.

[8] Saaty T., Fundamentals of Decision Making and Priority Theory with the Analytic Hierarchy Process, RWS Publications, 2000.

[9] Wen H., Lin S., Performance Evaluation of Highway Passenger Transport Enterprises' Operation based on the Model of AHP-DEA, Industrial Engineering and Engineering Management, IEEE 18Th International Conference, Vol. 2, pp 811-815, 2011.

STUDY REGARDING THE CONSUMERS OF AGROTURIST PRODUCTS ACCORDING TO SOCIAL CRITERIA

Lecturer. Dr. Diana Marin[1],

Prof. Dr. Milan Stefanovic[2],

PhD. Student Csaholczi Aurelian[1]

PhD Student Daniela Ienovan[1],

Prof. Dr. Cornelia Petroman[1],

[1] Banat's University of Agricultural Sciences and Veterinary Medicine „Regele Mihai I al României" Timisoara, Faculty of Agricultural Management, **Romania**

[2] University of Kragujevac, Faculty of Engineering, **Serbia**

ABSTRACT

The consumer of agrotourism has several characteristics, he belong to a superior socio-professional category , has the desire to explore, learn and understand the systems of values, to live in nature and to achieve the mentally and physically balance necessary to overcoming the constraints and daily monotony. The consumer of agrotourist products prefer specific meals with local ingredients, traditional handicraft products, have high income and average cost per night / stay superior to the average. The consumer of agrotourism differs eloquently from other types of consumer of products through choice, experience as tourism and motivation.

Keywords: agrotourist products, consumers, social criteria

INTRODUCTION

The consumer of agrotourism (which is an **maturity tourism of alternative type)** has the following features [1,4,7]:

- belonging to the upper socio-professional categories;

- prior documentation;

- desire to discover, to know, to understand, to communicate and to live the experience of the contact with new systems of values and new populations, to live in nature, to achieve the mentally and physically balance necessary for overcoming constraints and daily monotony, to observe the nature and to live the emotions of discovering the nature, fauna and flora of other destinations [3,9];

- tourist experience and high expectations regarding the product quality and competitive advantage, tourists being always looking for uniqueness and new destinations;

- high frequency of departures on vacation (without being concentrated in the high season), with durations of leisure stays of 4-6 nights;

- manifestation of a high coefficient of elasticity to price/quality report;

- urban area of origin;

- the need of detailed information about destinations;

- high level of education and culture;

- the preference for accommodation establishments of comfort of 3-4 stars (rarely hotels), of small dimensions and managed by locals in order to enjoy of their hospitality [2,5,6];

- the preference for meals with specific local ingredients, manufactured rather traditional/artisanal than industrial [8];

- the preference for individual transport;

- the preference for individual journeys, customs, with high flexibility and adaptability degree;

- the cultural, environmental and social concerns in their daily life environment;

- the age between 30-59 years;

- high incomes and average cost per night/ leisure stay above average.

MATERIAL AND METHOD

For this scientific work we have realized studies regarding the agrotourist activity in general and consumer behavior of agrotourist services specifically, based both on the own experience as tourist and agrotourist and also on the researches from the field conducted by specialists from the country and abroad.

RESULTS AND DISCUSSIONS

The consumer of agrotourism may differ from other types of products consumers through:

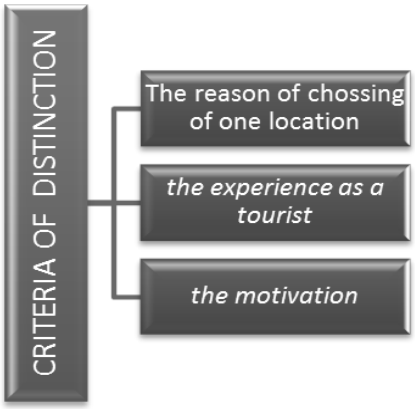


Figure 1. The main criteria of consumers' distinction of agrotourism by other types of consumers

– The choice (which caused him to choose a specific place and/or objective to visit it) depends on:

  • tourist *loyalty* to a particular type of tourism and/or to a particular place or type of place;

  • *the type of relationship* established between the tourist and the place visited.

– *the experience as a tourist* (if it is the first, second, third time when visit a certain place and/or objective).

– *the motivation* (closely conditioned by the *satisfaction)*, meaning what makes him to:

  • move to a distant place away from his own home or his own job;

  • sit in that place for shorter or longer periods of time;

  • spend small or bigger amounts of money in order to make the trip

Regardless of origin country of the tourist and of the visited country, the influence of the society on **tourist behavior** manifests itself in different ways, most of them being the object of tourism demand and motivation, and thus, the following:

- ***the tourist motivation***, determined by extrinsic socio-cultural factors (family, reference group, cultural influences, the origin environment);

- ***modern society,*** that creates the feeling of alienation from three elements from its life: community, work place and nature - the latter one causing him to look **the authentic through tourism** in:

• *authentic forms of tourism* (experiences such as niche tourism);

• *authentic places* (associated, mostly, with less developed societies or pre-modern, which can stress it if their privacy is invaded;

- ***the typology of tourists***, determined by the relationship with its origin society and by the desire to search for known or unknown elements when traveling.

We seem appropriate to determine who the **agrotourists** are.

According to the extension service of the University of Tennessee, target-audiences of agrotourism operators are:

- teenagers;

- monitoring amateurs of animal in their habitat;

- fans of outdoor activities;

- amateurs of traditional fairs and festivals;

- gardening clubs;

- families on vacation;

- local families with children;

- civic and religious groups of youth and adults;

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

- lovers of history;

- organizers birthday parties;

- persons skilled in wines field;

- hunters.

If the agrotourist farm is a very small tourist company, her manager can treat it customers individually and even develop marketing plans for each of them. If, on the contrary, agrotourist farm is large, the manager can focus on the needs of groups or on a set of preferences with general character, focusing on a single personality feature. In practice, there are situations in witch agrotourist farm is somewhere on the halfway of the road between the two categories: in this case, the marketing strategy of the manager must provide different services for different groups of agrotourists.

In order to make the right choice, the agrotourist farm manager must correctly identify market the market segments, according to the considerations of *geographic, demographic, social, behavioral and individual nature*.

According to the social criteria we can identify consumer groups of agrotourism according to *social class, personality or lifestyle*.

Social class is defined as "whole of peoples grouped in accordance with economic, historical and sociological criteria". Only two classes have the necessary means to practice agrotourism:

- families from middle-class, who have a very agitated lifestyle and who enjoy adventurous outdoor experiences;

- pensioners from upper-class, who enjoy wine tastings and who prefer relaxing holidays.

Personality is defined as "that which is proper, characteristic of each person and distinguished it as an individuality; set of moral or intellectual through witch a person distinguish; own way of being of someone".

The personality of agrotourist can be identified with the help of the five major personality factors and their constituent traits.

- ***kindly,*** factor characterized through the tendency to be more cooperative and full of compassion rather than antagonistic and suspicious of others;
- ***conscientiousness***, factor characterized through self-discipline, consistency, sense of duty (a behavior rather planned than spontaneous);
- ***opening***, factor characterized through the appreciation for art, adventure, curiosity, excitement, varied experiences, unusual ideas;
- ***extraversion,*** factor characterized by positive emotions, energy, impatience, need to seek the stimulation in the company of others;
- ***nevrozism*** (or emotional instability), factor characterized by the tendency to live unpleasant emotions such as anxiety, depression, anger, vulnerability.

The concept of ***"lifestyle"*** has three important dimensions: *values, tastes and behaviors* and specific indicators of each dimension:

- ***values*** dimension presents us the importance in our life of the following: art, welfare, religion, love, family, work, friends, spare time;

- ***tastes*** dimension shows us with what we prefer to spend our free time (Table 1);

- ***behaviors*** dimension indicates:

• how often: we listen to radio, read books, read newspapers, we watch TV;

• how often we spend time: with coworkers (outside office hours), with the "brothers"/"sisters" with friends, with relatives, with neighbors;

• how much time we spend on day: sleeping, walking, sitting at discussions;

• how often: we take lunch in a restaurant, we practice a sport.

Table 1.

Culinary tastes and culinary consumption patterns per social classes

Type of capital	**Characteristic tastes**	**High consumption**	**Small consumption**
Officials: great economic capital, relatively small cultural capital	*Taste for*: expensive and food rich in calories (heavy meals, meals with many dishes, with rare and expensive ingredients) *Meal Preparation:* long time, complicated dishes *Opposition to subordinate groups*: without economic restrictions and without changes of taste	Confectionery and pastries products, wines and appetizers, canned meat (*foie gras*), venison	Fresh meat, fruit and vegetables, restaurant meals and canteens
Professors: small economic capital, great cultural capital	*Taste for:* ascetic consume and originality, Exotic Cuisine (ethnic restaurants), populism culinary ("traditional" eating of the peasant) *Meal Preparation*: simple, lightweight, easy to prepare, with pre-prepared ingredients *Opposition to the dominant and subordinate groups*: looking at the originality at lowest prices, disapproval of rich and heavy dishes of the upper and lower classes	Bread, dairy products, sugar, canned fruit, soft drinks, dining room, ethnic restaurants	Wine and spirt drinks, expensive meats, fruits and vegetables, coffee, tea
Professionals: small economic capital, great cultural capital	*Taste for:* easy food, refined, delicate, traditional cuisine, rich in expensive products, rare *Preparation of meals*: low calories content, of fat, meals easy to prepare *Opposition to subordinate groups*: without economic constraints, replaced by the recommendation to avoid harsh	Expensive meats (lamb, veal), fruits and vegetables, fish, shellfish, appetizers	Meat can, confectionery and pastries products, sugar, non-alcoholic beverages,

	foods, fatty and to admire the delicate silhouette	drinks, meals at restaurant	meals in the cafeteria
Working class: small economic capital, great cultural capital	*Taste for*: cheap cuisine, rich in calories, rich in fats, heavy (pots)	Bread, cooked meats, milk, cheese, cheap meat (pork)	Fresh fruit and vegetables, meals at the restaurant and cafeteria, fish, shellfish
	Meal Preparation: cooked food, with long time of cooking		
	Opposition to the dominant groups: likes to eat well, drink well, to enjoy of the open and generous hospitality		

Source: after Bourdieu, în Seymour, D. (2004). The Social Construction of taste. In D. Sloan (Ed.), Culinary Taste. Consumer Behaviour in the International Restaurant Sector)

CONCLUSION

We can conclude that agrotourist is, primarily, an open person, adventurous (in a good way), curious and emotive, which has unusual ideas and who wants to share the experiences of the most diverse when is on holiday in the rural area.

According to the analysis of social variables we can see that agrotourists can be characterized as having: an occupation (often) related to the cultural industry; a high level of education; a high socio-economic status; free time

We can conclude from this detailed presentation of what means "lifestyle", that the farmer must offer to tourists who came to its farm everything that they missing in their home environment: a corral with domestic animals, for children to have direct access to a unique and beneficial learning experience and accommodation and meals for those who work hard all week to have some relaxation.

REFERENCES

[1]. Andriotis, K. & Vaughan, D.R., The Tourism Workforce and Policy. Exploring the Assumptions using Crete as the Case Study. In: Current Issues in Tourism 7 (1): 66-87, 2004

[2]. Ciolac Ramona, Necessity and perspectives of rural tourism business expansion, Lucrări Ştiinţifice Zootehnie şi Biotehnologii (Scientific Papers: Animal Science and Biotechnologies), ISSN 1221-5287, Editura Agroprint Timişoara, vol.45 (1), pp. 440-443, Romania, 2012

[3]. Momir B., Petroman I., Lile Ramona, Iancu T., Merce Iuliana, Petroman Cornelia, Marin Diana, Dumitrescu Carmen , Human rosources management in Romanian agrotourism, Journal of Biotechnology, Supplemenet Issue European Biotechnology Congress 2014, vol. 185, Supplement, ISSN 0168-1656, pag.568, 2014

[4]. Iosim Iasmina, Popescu Gabriela, Some aspects of communication strategies used in tourism, Research Journal of Agricultural Science, 47 (4), Timisoara, Romania, pp. 95-98, 2015

[5]. Petroman I., Petroman Cornelia, Agritourism and its forms, Lucrari Stiintifice Seria Agronomie, ISSN 1454-7414, vol 53, Iasi, Romania, pp. 367-369, 2010

[6]. Petroman I.M., Petroman I., Conservarea autenticităţii prin activităţi agroturistice, Editura Eurostampa Timişoara, pp. 57-58, 2013

[7]. Russell, Brittany., Agri-Tourism Workbook. Guide to Discovering New Ways to Build a Successful Agriculture Business through Direct Farm Marketing. Agri-Business Council of Oregon, 2003

[8]. Toader Cosmina Simona, Michalcewicz-Kaniowska M., Zajdel M., Tourism information centers–proof of tourism management, Lucrări Științifice Management Agricol 17 (2), 2015

[9]. Theobald W., Global Tourism – Amsterdam Elsevier Butterworth-Heinemann :131, 2005

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
S G E M 2 0 1 6

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

STUDY REGARDING THE ROLE OF THE TOURISM ORGANISATION IN PROMOTING THE AUTHENTIC AGROTOURISM

Prof. Dr. Cornelia Petroman [1]

Prof. Dr. Marius Catalin Benea [2]

PhD. Student Melania Varga[1]

PhD. Student Victoria Serban[1]

Prof. Dr. Ioan Petroman [1]

[1] Banat's University of Agricultural Sciences and Veterinary Medicine „Regele Mihai I al României" Timisoara, Faculty of Agricultural Management, **ROMANIA**

[2] Politehnica University Timisoara, Faculty Hunedoara Engineering, **ROMANIA**

ABSTRACT

Tourism organizations at central and local level have attributions to promote agrotourism and optimal solving the problems that tourist activity implies from the territory of tourist village or from the peripheryc area. The organization and promotion strategy of agrotourism in territory we consider it necessary, the creation of a partnership between tourism service providers, local authorities, economic agents providers of connexe tourism services and travel agents. In order to support the local population is necessary to develop general infrastructure and technical urban and tourist facilities, the initiation of measures to protect the natural and built environment, creation of a village associations that provide the quality of reception and authenticity of the products offered for consumption.

Keywords: tourism, organizations, promotion, tourist village

INTRODUCTION

Tourism associations at national, regional and local level have especially the role to promote tourism in general and other forms of tourism, but coverage and optimum solving of the problems involving tourism activity can be achieved only through a performant management [1,7,9,10]. **The organization of tourism associations must include both rural tourism activity, but also agrotourism, both being carried on the territory of "tourist village" or in the surrounding area of it at the level of rural area**.

In the strategy of the organization and promotion of rural tourism and agrotourism in the territory, it **is necessary for the establishment of a partnership between tourism service providers, local authorities and businesses agents' providers of services related to tourism, travel agents** [6,8]. Only through this cooperation it can be solved the major problems of the development and promotion of the authentic agrotourism and, in general, of rural tourism, in the context of socio-economic development of the rural community, with beneficial effects on local tourism [2,3]. Without an development of general infrastructure of the technical-urban and tourist endowments, of the initiation of protection measures of the natural and built

environment, it can not be speak of a competitive tourism at the level of rural locality agrotourist farm vegetal or animal [4,5].

MATERIAL AND METHOD

In order to support local population in tourism development and implicit in the organization and proper functioning of a tourist village **and of the authentic agrotourism we believe that must be** constitute a **Village Association based on adhesion, among farms offering agrotourist authentic services of farm**, but also to other legal or natural persons witch practice tourism or services related to it, to witch participate the local authority.

RESULTS AND DISCUSSIONS

Village association will be apolitical and non-profit, and will have as purpose the coordination of economic activities with agrotourist profile such as:

- animation;
- development of agrotourist farms;
- provision of services;
- promotion of authentic tourism;
- advertising;
- booking of seats at the tourist village;

The necessity that, in the development strategy of agrotourism, central pawn to be the Village Association with the involvement of municipal authority, derives from the following considerations:

- authentic agrotourism is a form of tourism in witch the man is essential and central element - the village and "tourist product" - meaning tourist offer - the offer, represents the basics elements of authentic agrotourism;

- village association and farmers can ensure the attractiveness through:

  • the authenticity of gastronomic offers and agrotourists;

  • the quality of tourists receiving;

  • the knowledge of the local natural, human and historical environment;

- the association of farmers association facilitates what can not achieve one person:

  • composition and marketing offers;

  • promoting on the market of the authentic product and of the tourist village;

- preserving and promoting local cultural and historic patrimony:

  • ethno folk;

  • cultural and historical traditions of the rural community;

- conservation and protection of the habitat:

• of the environment;

• natural, historical and art monuments;

- creation of the programs for training and retraining of association's members and conducting studies of:

• agrotourism-environment impact;

• inventory of natural and anthropogenic resources;

• agro-food marketing;

Village Associations which have as object of activity agrotourism and rural tourism can group regionally in Regional Associations who may have more mentoring role in promoting, in conditions of decentralization of authentic agrotourism activity, these activities may be:

- information on exhibitions, specialized fairs, community days;

- information regarding rural tourism and other forms of tourism, festivals of ethnic groups from the area;

- initiation of some experiences exchanges;

- guidance in promotion field, publicity of authentic agrotourist products;

We believe that local associations can group also regional in the following purposes: advertising, informative and investments.

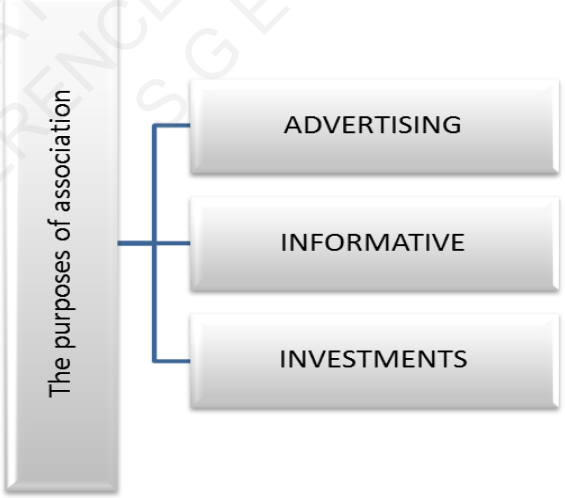


Figure 1. The purposes of association in Village Associations

It requires cooperation between associations, foundations and other institutions at national level **to encode farm agrotourism offer through "brand" or "logo" in order to be intelligible and recognizable by tourists**.

In this regard shall be taken the following measures:

- **publishing promotional materials**, promoting through the media the village associations;

- creation of a frame Guide;

• arranging leisure and entertainment in agrotourist animal and vegetable farm;

• creation of the National Bureau for Tourism;

• minimum facilities for preparing and serving breakfast and meals, in general;

• preparation of documentations for approval of spaces based on normative acts in force for approval etc.;

• arrangements ways of agrotourism farms;

• carrying advertising materials regarding authentic agrotourist product;

• signaling by icons of the tourist villages;

- organizing exhibitions in the field;

- promotion of the quality standards in peasant households that make up the tourist village;

CONCLUSION

Local tourism organizations together with the regional and national have an important role in promoting authentic agrotourism and of the agrotourist villages if there is a partnership between them having the role to contribute to the sustainable development of rural communities.

Stimulation by promoting some brands or logos of the identity of local community through Village Association, encouraging creativity and cooperation will contribute to the development of authentic agrotourism and increasing of economic efficiency of agrotourist villages by diversifying leisure activities and recreational-fun agrotourism.

By supporting the interests of village associations by the regional and national associations it can be realized an effective lobby for the promotion of authentic agrotourism and socio-economic development of local communities who have natural and anthropogenic resources unspoiled by the impact of tourists on communities and on the environment.

REFERENCES

[1]. Allerton, Catherine, Authentic housing, authentic culture?: Transforming a village into a „tourist site" on Manggarai, eastern Indonesia. Indonesia and the Malay World 31 (89), pp. 119-128, 2003

[2]. Cohen. E., Authenticity and Commoditisation in Tourism. Annals of Tourism Research 15, pp. 371-386, 1988

[3]. Ciolac Ramona, Isac Ecaterina, Tonea Elena, Hurmuzache Tabita, Sirbu Corina, Martin Simona, Agrotourism – traditional knowledge and biotechnology, "Journal of Biotechnology" of the Eurobiotech 2015 Congress, Volume 208, Supplement, Abstract Book, ISSN 0168-1656, Bukarest, Romania, pp. 62, 2015

[4]. Iosim Iasmina, Selecting best strategy in negotiation, Research Journal of Agricultural Science, 46 (4), Timisoara, Romania, pp. 103-106, 2014

[5]. Marin Diana, Research Regarding the Purchase Decision Process of Consumer of Food Products, Lucrări Științifice, Zootehnie și Biotehnologii, ISSN print 1841-9364, ISSN online 2344- 4576, ISSN-L 1841-9364, vol. 48 (1), Timisoara, Romania, pp. 328-332, 2015

[6]. Marin Diana, Study on the impact of tourism and of agrotourism on local communities, Research Journal of Agricultural Sciences, Vol. 47, Issue 4, Timisoara, Romania, pp. 160-163, 2015

[7]. Momir B., Petroman I., Lile Ramona, Iancu T., Merce Iuliana, Petroman Cornelia, Marin Diana, Dumitrescu Carmen , Human rosources management in Romanian agrotourism, Journal of Biotechnology, Supplemenet Issue European Biotechnology Congress 2014, vol. 185, Supplement, ISSN 0168-1656, pag.568, 2014

[8]. Petroman Cornelia, Petroman I.M., Peț Elena, Marin Diana, Heber Loredana, Bălan Ioana, (2010) Solution for the improvement of destination management on agrotourism farms, Agriculture and Countryside of climate Change and Recession, Vol 5/2010, Hodmezovasarhely, Ungaria 22.04.2010, ISSN 1788-53, pp. 464-467, 2010

[9]. Ryan, Susan Debord, Kristy, McClellan Krinstin, Agritourism in Pennsylvania An Industry Assessment. Harrisburg, PA: The Center for Rural Pensylvania, 2006

[10]. Stevenson, L., Commodification and Authenticity in the Traditional Music and Tourism Initiative. European Centre for the Experience Economy, 2003

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE SGEM 2016

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

SUSTAINABILITY MANAGEMENT IN THE EUROPEAN UNION COUNTRIES

Assoc. Prof. Emília Huttmanová, PhD.[1]

Assoc. Prof. Tadeusz Bąk[2]

[1]University of Prešov in Prešov, Faculty of Management, Department of Environmental Management, **Slovak Republic**

[2] State School of Technology and Economics in Jaroslaw, The Institute of Economics and Management, **Poland**

ABSTRACT

Sustainable development is generally regarded as a multidimensional concept. We meet the terms of sustainable development and sustainability in almost all spheres of life, in these days. Sustainable development could be evaluated in its main dimensions - economic, social and environmental dimension. The aim of this paper is to evaluate the management of sustainable development in the countries of the European Union using the selected sustainable and environmental indicator – Environmental Performance Index (EPI) .

Key words: Sustainability Management, Sustainable Development, EU countries, Environmental Performance Index

INTRODUCTION

The concept of sustainable development and sustainability respectively began to be used in a greater extent in the 70s, mainly because mankind began just about this time period to slowly realize that uncontrolled growth is not sustainable in the long term. This fact was based on the rapid development of production but also consumption, pollution, waste production and population growth, which were transformed into global problems. Restricted and limited non-renewable resources were becoming scarcer and mankind started to think about the question of their proper use, so that it does not jeopardize the needs of the present, nor future generations. Comprehensive definition of sustainable development first appeared in the report of the Club of Rome (1972), which states that sustainable development is a state of global equilibrium, in which the population of the Earth and the capital is maintained on more or less constant level and tendencies influencing the increase or decrease of these parameters must be kept under strict control; [6]; [4]; and others. In 1987, the Commission under the leadership of Gro Harlem Brundtland issued final report entitled "Our Common Future", which states that economic development cannot stop in any way, hope is, in contrary, in its acceleration. However, it should fundamentally change its design, development must become sustainable [13]. Economic activities in society often develop at the expense of environmental quality. The question of economic prosperity and a high quality environment is currently one of the most debatable [2], [7], [14]... It appears to be very difficult to achieve high economic growth without negative impacts on the environment, or without any negative intervention on the environment, respectively [8], [5]. Environmental quality is regarded as one of the fundamental dimensions of sustainable development [1], [3], [10], [12]…

MATERIAL AND METHODS

Maier et al. [11] states that sustainable development affects two dimensions of contexts: the time, expressing responsibility and solidarity between different generations (the human community - intergenerational responsibility), and spatial - reflecting the responsibilities and solidarity between communities of one Earth. These two dimensions together with the mutual relationship of man with the environment and the surroundings are key determinants of sustainability management. Research of the spatial dimension of sustainability is the content of this post.

The main aim of this paper is to evaluate the management of sustainable development in the countries of the EU using the selected sustainable and environmental indicator – Environmental Performance Index. The data used were obtained from the Yale Center for Environmental Law and Policy (http://epi.yale.edu) and processed using cluster analysis. The similar evaluation, by cluster analysis, was realized by Prokeinova [15].

RESULTS AND DISCUSSION

We investigated the degree of similarity of individual EU countries using the indicator Environmental Performance Index (EPI) and its selected sub-indicators. EPI currently replaces ESI (Environmetnal Sustainablity Index). EPI was created in order to help:

- recognize environmental problems
- capture trends in pollution control and natural resource management,
- identify priority environmental issues;
- identify where current policy is performing well and where they are inadequate,
- provide a basis for comparison among countries and sectors,
- find equal countries and identify leaders and lagging countries and
- identify the best measures and successful models of policy.

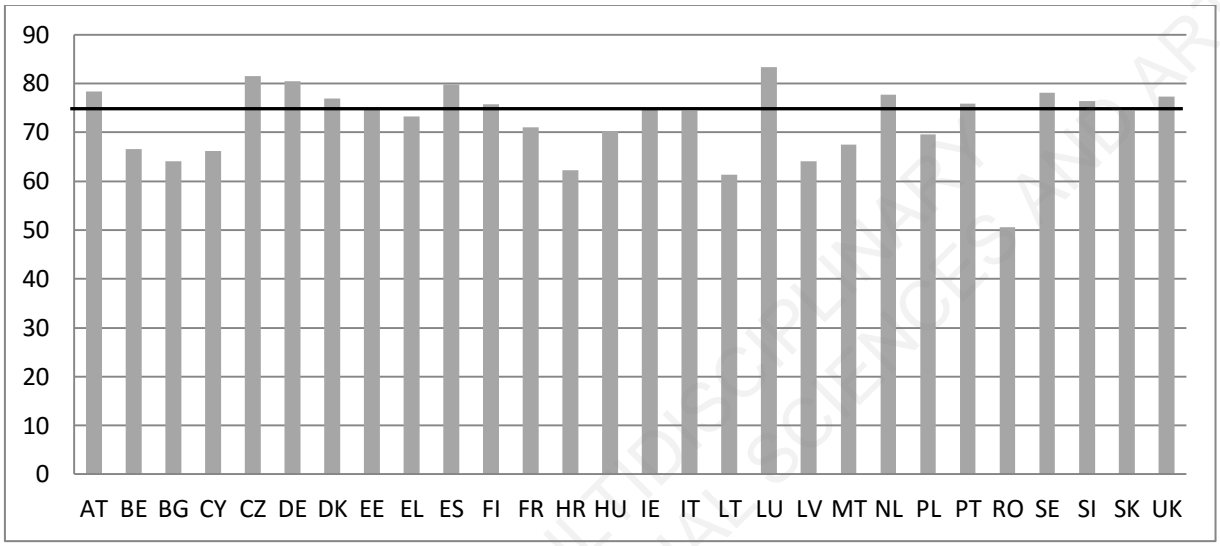
EPI is considered as one of the indicators of sustainable development. EPI also referred to as an index of environmental impact, is designed using the calculation and aggregation of selected indicators representing data in the field of the environment at the national level. These indicators are combined into nine categories, each being associated with one of the two main objectives, as shown in Table 1.

Table 1 Objectives and Categories of Environmental Performance Index

Aggregate Indicator	Objectives	Categories
Environmental Performance Index	Environmental Health (40 %)	Health Impact (33 %)
		Air Quality (33 %)
		Water and Sanitation (33 %)
	Ecosystem Vitality (60 %)	Water Resources (25 %)
		Agriculture (5 %)
		Forests (10 %)
		Fisheries (10 %)
		Biodiversity and Habitant (25 %)
		Climate and Energy (25 %)

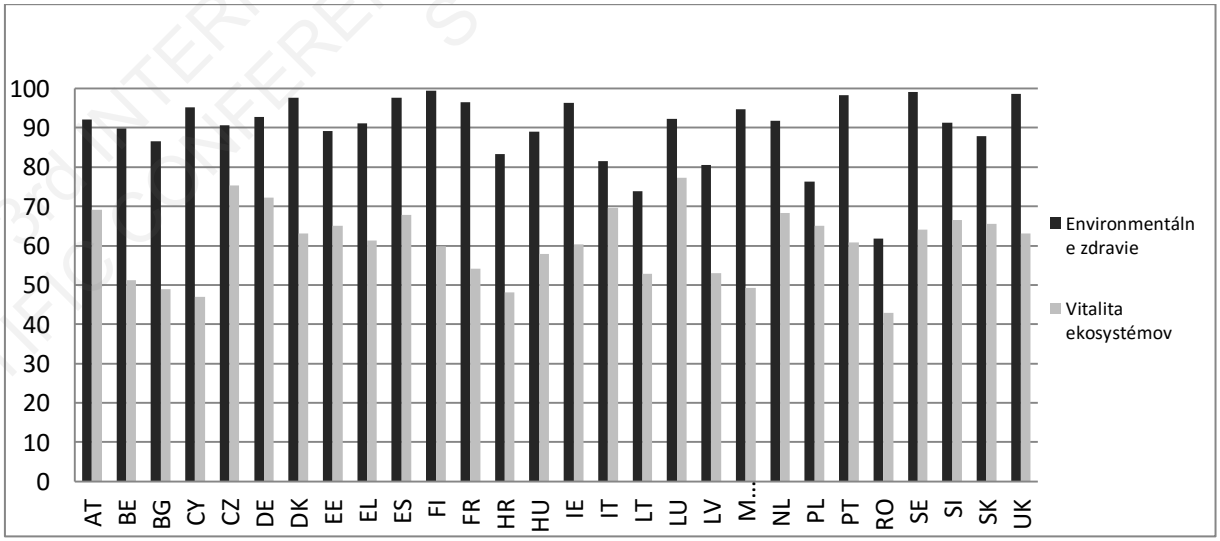
(Source: Yale Center for Environmental Law and Policy (YCELP); Dostupné na internete: http://epi.yale.edu).

EPI values are expressed on a scale from 0 to 100, where 0 is the worst value and the value of 100 expresses the best value. EPI is a dimensionless indicator, as it is not expressed in standard units of measurement. EPI values achieved in the EU-28 for the last assessment period are shown in Graph 1.



Graph 1 Achieved values of EPI in EU countries (and average value of indicator on the EU-28 level), in 2014
(Source: data of Yale Center for Environmental Law and Policy and own processing)

Graph 1 shows that the highest value of EPI and the least negative impact on the environment reaches Luxembourg, followed by the Czech Republic and Germany. From among the EU-28 countries, Romania is the farthest from the required index values.



Graph 2 Achieved value of EPI at its fundamental objectives in the EU countries in 2014
(Source: data of Yale Center for Environmental Law and Policy (YCELP) and own processing)

The assessment of each essential objectives of the index presented in Graph 2 shows that EU countries achieve better results in the category "Environmental Health" than in the category "Vitality of ecosystems". Based on the achieved values of EPI it can be stated that EU countries best eliminate the negative impacts of air quality, water, sanitation and in the area of health impacts.

By assessing partial results (Graph 2), the highest values in the category "Environmental Health" reach countries Finland and Sweden and, on the other hand, the lowest in Romania. Within assessing the goal „Ecosystem Vitality" it can be seen that the EU countries have lower values than in the previous goal, which may indicate problems with quality assurance of environment exactly in the quality of ecosystems. The highest values in the field „Ecosystem Vitality" reach Luxembourg, Czech Republic and Germany, which is also reflected in the overall evaluation of EPI. Furthest from the setpoint values in the target „Ecosystem Vitality" reached again Romania. The average value achieved in the goal of "Environmental Health" in the EU-28 is almost 90 and in the goal "Ecosystem Vitality" it is 60,7.

Slovak Republic reaches the total value of EPI at 74.45 (at the goal "Environmental Health" reaches index value of 87.9, and at the goal "Ecosystem Vitality" value of 65.5). Based on the above it can be concluded that the Slovak Republic achieves the value of EPI on the average level of the EU-28: also on the basis of its overall assessment as well as on the basis of its partial goals.

Using EPI we can monitor the level of similarity in the European Union. We carried out cluster analysis on the level of main categories of EPI (Figure 1).

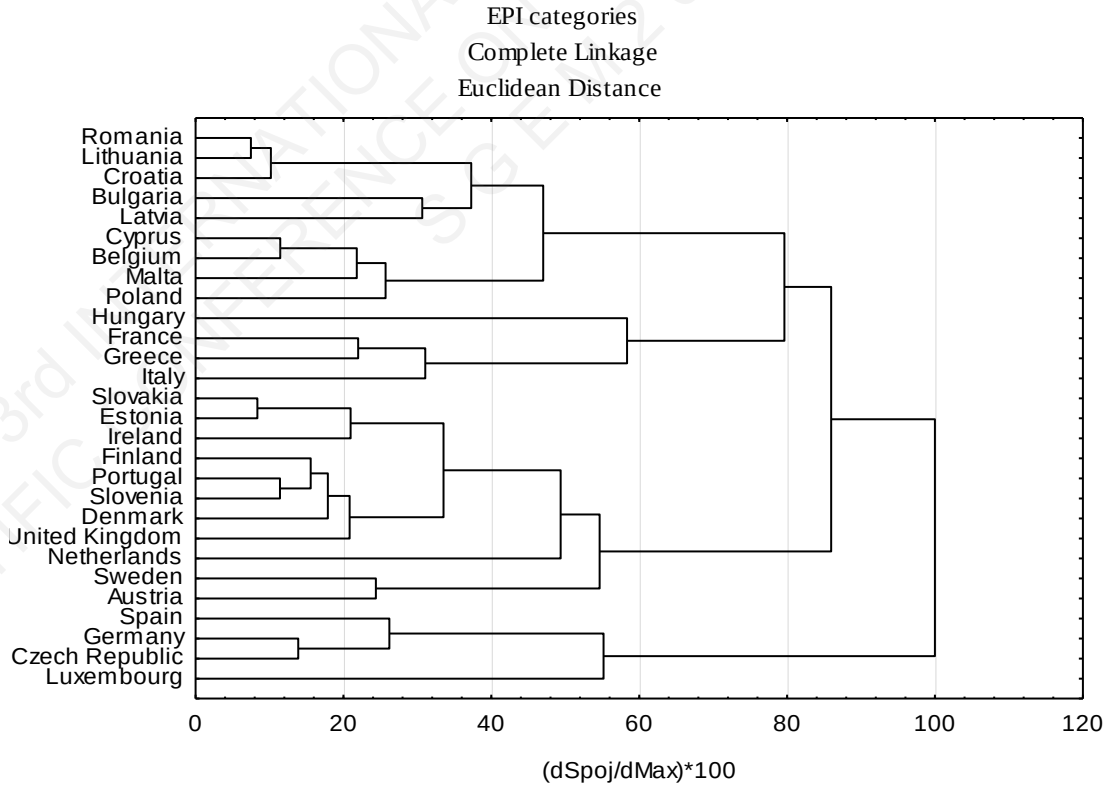


Figure 1 Dendrogram of EPI on the level of its categories in EU countries (data for 2014) (Source: own calculations)

The carried out evaluation (Figure 1) shows that within the EU there are four relatively independent groups of the countries that have achieved certain degree of similarity in environmental performance. The clusters of the countries are listed in Table 2.

Table 2 Clusters of of EU countries at its categories on the basis of EPI

The order of the clusters by EPI score	Countries	The average EPI score
1.	Spain, Germany, Czech Republic, Luxembourg	81,26
2.	Slovakia, Estonia, Ireland, Finland, Portugal, Slovenia, Denmark, United Kingdom, The Netherlands, Sweden and Austria	76,36
3.	Hungary, France, Greece, Italy	72,24
4.	Romania, Lithuania, Croatia, Bulgaria, Latvia, Cyprus, Belgium, Malta, Poland	63,54

(Source: own research)

From the results of performed analysis is obvious that the best results in terms of quality of environment, is achieved by countries: Spain, Germany, Czech Republic and Luxembourg; while the lowest quality of environment is achieved by countries: Hungary, Lithuania, Croatia, Bulgaria, Latvia, Cyprus, Belgium, Malta and Poland. Slovakia in this assessment shows a high degree of similarity with Estonia.

CONCLUSION

Dimensions of economy and ecology often stand opposite each other and development of one of them is done often at the expense of the other. It is therefore necessary to look for ways to develop economic life without harming the environment, which is a prerequisite for sustainable development.

Acceptance of the environment as an indispensable dimension of sustainable development is a prerequisite for the proper management of sustainability (also at European level). Management of sustainability, however, is also one of the ways to stimulate a wide range of activities towards a more efficient and competitive economy [9]. Environmental quality is one of the key areas of sustainable development. Based on the analysis carried out, it can be stated that the quality of the environment in the EU is relatively heterogeneous.

Based on the achieved similarities of individual countries, there can be formulated also similar objectives in the field of sustainable development and it is possible to use similar tools to their achievement - thus adapt the management of sustainability in each country based on their results in the various dimensions of sustainable development as well as other specifications.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS

ACKNOWLEDGEMENT

This article is supported by project KEGA n. 032PU-4/2014 „Príprava študijných materiálov pre program Environmentálny manažment v 1. stupni štúdia a nadväzného študijného programu Environmentálny manažment“.

BIBLIOGRAPHY

[1] ADAMIŠIN, P. Ekonomické prístupy k udržateľnému rozvoju. In: *Teoretické aspekty prierezových ekonomík IV : zborník vedeckých prác*. Bratislava: Vydavateľstvo Ekonóm, 2007. s. 4-8. ISBN 978-80-225-2472-8.

[2] ADAMIŠIN, P., TEJ, J. The analysis of the economic efficiency of regions on the level of NUTS III and on the proportion of municipial taxation. In: *Polish journal of management studies.* Vol. 5 (2012), s. 60-77. ISSN 2081-7452.

[3] ADAMIŠIN, P., VAVREK, R. Analysis of the links between selected socio-economic indicators and waste management at the regional level in the Slovak republic. In: *5th Central European conference in regional science: conference proceedings.* Košice : Technical university of Košice. p. 1 – 9. 2015. ISBN 978-80-553-2015-1.Available to internet: http://www3.ekf.tuke.sk/cers/files/zbornik2014/PDF/Adamisin.pdf

[4] BLEWITT, J. *Understanding Sustainable Development*. London and New York: Routledge, Tailor & Francis Group. 2008. ISBN 978-0-415-70782-4.

[5] CHOVANCOVÁ, J. Environmental management systems - incentives and barriers of implementation in Slovak enterprises. In: *Ecology and environmental protection, environmental legislation, multiratelar relations and funding opportunities : ecology, economics, education and legislation. Vol. 2 : conference proceedings : 15th international multidisciplinary scientific geoconferences SGEM 201.* Sofia : STEF92 Technology, 2015. p. 205 – 211. ISBN 978-619-7105-40-7.

[6] DEMO, M., HRONEC, O., TÓTHOVÁ, M. a kol., *Udržateľný rozvoj : život v medziach únosnej kapacity biosféry*. Nitra: SPU v Nitre, 2007. ISBN 978-80-8069-826-3.

[7] FAZEKAŠOVÁ, D. *Trvalo udržateľné využívanie pôdy : vymedzenie a hodnotenie indikátorov a parametrov vývoja pôdy*. Prešov : Fakulta humanitných a prírodných vied PU. 2003. 77 s. ISBN 80-8068-228-3

[8] HRONEC, O. a kol. *Prírodné zdroje*. Košice: Royal Unicorn, 2000. ISBN 80-968128-7-4.

[9] HUTTMANOVÁ, E. *Analytický pohľad na manažment udržateľnosti rozvoja krajín Európskej únie v kontexte globálnych zmien*. Habilitačná práca. Prešov: PU v Prešove, 2015. 217 s.

[10] LAČNÝ, M. Environmentálna, sociálna a ekonomická oblasť spoločenskej zodpovednosti podnikov. *In: Folia oecologica 7. Prírodné vedy.* Roč. 54, č. 7 (2012), s. 55-65. ISSN 1338-080X.

[11] MAIER, K. a kol. *Udržitelný rozvoj území*. Praha: Grada Publishing, 2012. ISBN 978-80-247-4198-7.

[12] MAJERNÍK M., CHOVANCOVÁ, J., NAQIB, D., ENAYAT, D. *Environmental and health impact assessment of development strategies*. Düsseldorgf : Albersdruck GmbH & Co. KG, 2015. 148 p. ISBN 978-3-00-050052-7.

[13] MOLDAN, B. *Podmanená planéta*. Praha: Univerzita Karlova v Praze, Nakladatelství Karolinum, 2009. ISBN 978-80-246-1580-6.

[14] PRČÍK, M., KOTRLA, M. Environmental and socio-economic aspect of growing Miscanthus genotypes. In: *Scientific papers*. Vol. 13, iss. 1 (2013), s. 201-204. ISSN 2247-3527.

[15] PROKEINOVÁ, R. Analýza európskych krajín z hľadiska trvalo udržateľného rozvoja použitím kvantitatívnych metód. In: „*International scientific days 2006 Faculty of Economic and Management SAU in Nitra "Competitivness in the EU – Challenge for the V4 countries"*.[online] Nitra: SPU, 2006. [cit. 2014-04-10]. s. 1449 – 1454. Dostupné na internete: http://www.slpk.sk/eldo/2006/025_06/sekcia7/s7_prokeinova_renata_11.pdf

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
S G E M 2 0 1 6

SUSTAINABILITY OF GOVERNMENTS DEBT

Peter Bad'o,

Masaryk University**, Czech Republic**

ABSTRACT

The main objective of this paper is to analyse the government debt sustainability and stabilization in a small open economy. Sustainability of government´s debt is one of the key priorities of almost every country. Under ideal conditions, government´s debt should be sustainable at all times. For that reason, government should use debt stabilization tools to sustain the government debt or at least maintain it at acceptable level. Selection of appropriate stabilization tools depends on many different factors. Used research methods are systematization and generalization of the scientific literature and the qualitative and quantitative analysis of the primary and secondary data. At the end of the paper is brief review of the main results and findings concerning debt sustainability and stabilization in a small open economy.

Keywords: debt, debt management, sustainability

JEL Classification: H63, H12

AMS Classification: 62-07

1 INTRODUCTION

The importance of stabile public finance is most likely imperative for most of the world countries. This is getting obvious mainly in the recent years. Scientific literature brings no consensus to what are the government's sustainable criteria and presumptions for sustainable government debt. Different authors provide various concepts of government debt sustainability, for example see: [3], [7], [8], [9], [10], [11], [13], [14], etc.

We could observe that in many cases there was a violation of sustainability of government debt in the short run period and in some cases the sustainability of debt was non-existent. Because of the recession aftermath several debt stabilization tools were needed to be applied. Even several changes in government strategy of debt

sustainability were necessary in order to improve the long term indebtedness situation of some countries.

2 LITERATURE OVERVIEW

If we want to stabilize the government debt, first we need to select the appropriate stabilization tools for the government debt. But in above mentioned literature, there are several different approaches to this problem.

In this chapter will be mentioned several main concepts for government debt sustainability. These approaches are based on the previous researches of many authors. For example: [1], [2], [4], [5], [6], [8], [12], [14], [15], etc.

The most general idea of government debt is the whole sum of unpaid government debts, most often specified as the amount of money or more concretely as a ratio to the GDP.

Another approach is, if we can consider the sustainability of government debt to be solvent. Respectively, if the government is solvent than we take the sustainability of the government debt to be solvent as well. The main issue with this approach is that quite extensive analysis must be done in order to back up these results. Also this concept is considered to be fairly abstract and hard to express, mainly, because evaluation of the solvency and the reasoning behind this concept is complicated on its own. Moreover, even that sometimes, there is not a given time period, only a long run period should be considered.

Different concept is about evaluation of the debt burden. Sustain of government debt is based on non-increasing debt, which would be induced by debt burden. Basic ratio would be used to calculate the level of debt burden. Evaluation methods are, in this case, quite specific and again, also a long run time period should be considered here. However, someone could say that the governments borrowing policy is not considered sustainable, if during time, the debt level would has significantly increased or such increase would be expected in the future to come. But, more accurate thing to say would be, that government debt management policy is not sustainable, if in the near future would be an uncontrollable increase in debt level, which would be noticed by the government, but that government would be unable to meet its debt obligations. In

consequence of already mentioned, simulation methods and forecasting would be needed in this concept.

The third concept is quite similar to the debt burden concept, but it takes into consideration the level of debenture and dynamics of debenture over time. In this case, the government debt is considered sustainable, if the government can control the variation of the debenture level. Several simulations as well as stress tests should be used for this type of evaluation method for government debt sustainability.

The next approach for calculation of government debt sustainability is budget limitations. Debt level is sustainable, if obligations, borrowing etc. does not exceed the economy increase.

For the last method we can consider the usage and the effectiveness of the borrowed funds. This effectiveness can be measured with many different specific indicators, but the reasoning behind the indicators must be concrete.

3 METHODS AND DATA

Various methods are used to obtain different part of the research. However, holistic approach was used to ensure the consistence of the research. Generalization and systematization of the scientific literature was used to analyze particularities of small open economies. These methods were also used to identify particularities used for different debt stabilizations tools and management. Qualitative analysis of the primary and the secondary data is made.

3.1 Data

This research is applied to the study of Czech Republic economy in time period of 1995 – 2014. This time period was selected because of the availability of high quality data, also we have the opportunity to compare the situation before and after the crisis as well as observe the development of GDP and sustainability of the debt, from the foundation of sovereign state. These data were obtained from the database of Eurostat.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

4 RESULTS

In the following section are the results of the conducted research. The results of the research are based on the outcome of the research, which was performed accordingly with the mentioned methods and limitations.

Analysis of the particularities of the government debt borrowing strategy showed that, the main prerequisites for successful stabilization of the government debt, is implementation of balanced budget and sustainability in finance policy. Also important is constant monitoring of the debt level, capabilities of debt managers, possible opportunities for structural reforms and effective usage of borrowed funds. In context of the research, the large advantage of the Czech Republic is the usage of own national currency and having less independent monetary policy as others small economy countries within the Eurozone. On the other hand, common singularity of small open economies is its volatility to the global changes in economy.

Results of the conducted research also showed, that the government stabilization tools can be divided into two main groups. Stabilization tools with preventing capabilities such as control of borrowed cost, restructuring of the government debt etc. and tools with moderating effect such as fiscal policy, adjustment of borrowing limits etc.

Empirical results showed that the Czech Republic debt stabilization tools are reasonable effective and so far based on principles of sustainable borrowing. During recent global crises the debt to GDP ratio was in year 2009 increased by 16 percentage points, but in the following years it has decreased to 2 percentage points in year 2013 and in year 2014 we could observe decrease by almost 1,5 percentage points in debt to GDP ratio. Interestingly, largest increase in debt to GDP ratio was in years 2000-2002, were average increase was 25 percentage points and in year 2002, the increase was 44,53 percentage points. These record numbers are, however, afflicted by large floods, which in those years affected the Czech Republic. Average increase in GDP before year 2009, before global financial crisis, was 3,4 percentage points, according to the Maastricht criteria. After the year 2009, the change in GDP is almost zero, but the negative trend is slightly dominating, as you can see in figure 1.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

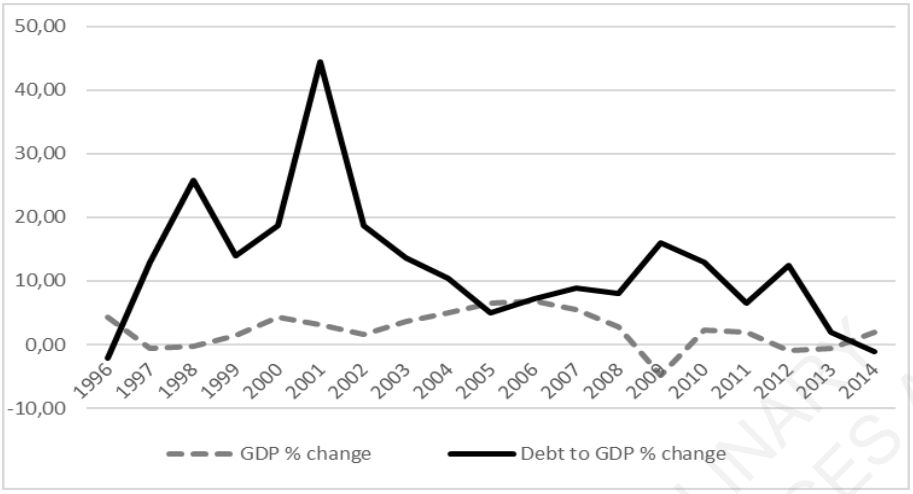


Figure 1 Percent change in debt to GDP ratio and in GDP in years 1996-2014

Research also showed, that in short run period, the government debt is not stable, mainly because of debt management cost and higher borrowing cost. Both are typical for small open economies.

5 CONCLUSION

In this paper are discussed several main concepts of government debt sustainability. In comparison with other authors, previous result and own expectations, the results are satisfactory. This paper followed a previous research and will work as a base for a further research of government debt and relationship with economic growth. The focus of government debt stabilization policy and strategy in small open economy should be placed in prevention against long term violation of balanced budget. Also, reserved borrowing strategy should be considered as a prerequisite for sustainable debt management for small open economy. Furthermore, adaptation of government debt management stabilization policy should be made to adapt for the specific requirements of the economic environment of the country, in order to achieve long term stability of government debt. This statement could be generalized even for large open economies, not only for small open economies.

After these results, I want to continue with this research in greater scale. I am planning to expend this research to include ten most and ten least indebted countries of European Union and to investigate the relationship between government's debt and economic growth.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016 3rd INTERNATIONAL MULTIDISCIPLINARY

ACKNOWLEDGEMENTS:

This paper was created within a specific research *Macroeconomic analysis of the behaviour of the economy and economic policy using quantitative methods* marked ***MUNI/A/1049/2015***.

REFERENCES

[1] Aspromourgos, T.: *Keynes, Lerner and the Question of Public Debt: History of political economy*. Duke Univ. Press, Vol. 46. p. 409-433, 2014.
[2] Barkbu, B. et al.: *Financial crises and the multilateral response: What the historical record shows.* Journal of International Economics, 88, p.422-435, 2012.
[3] Bordo, M.D., et al.: *Foreign currency debt, financial crises and economic growth: A long-run view.* Journal of international Money and Finance, 29, p.642-665, 2010.
[4] Campa, J.M.: *Fiscal Challenges in the Euro Zone.* Asian Economic Policy Review, 7, p.180-197, 2012.
[5] Chen, S.-W.: *Current account deficits and sustainability: Evidence from the OECD countries.* Economic modelling, 28, p. 1455-1464, 2011.
[6] Davidson, P.: *Post-Keynesian Theory and a Policy for Managing Financial Market Instability and its Relevance to the Great Recession.* International Economics Journal Turkish Economic Association, 1, p. 1-24, 2012.
[7] Faraglia, E. et al.: *The Impact of Debt Levels and Debt Maturity on Inflation.* Economic Journal, 123, p. F164-F192, 2013.
[8] Hajdenberg, A. & Romeu, R.: *Parameter Estimate Uncertainty in Probabilistic Debt Sustainability Analysis.* IMF Staff Papers, 57, p.61-83, 2010.
[9] Checherita, C. & Rother, P.: *The impact of high and growing government debt on economic growth: An empirical investigation for the euro area.* European Central Bank: Working Paper Series No. 1237, 2010.
[10] Lejour, Lukkenzen, and Veenedaal.: *Sustainability of government debt in the EU.* Netherlands Bureau for Economic Policy Analysis, 2010.
[11] Liliko, A. Holmse, E., and Sameen, H.: *Controlling Spending and Government Deficits: Lessons from History and International Experience.* Policy Exchange, 2009.
[12] Sopek, P.: *The effect of the financial crisis on Croatia´s primary budget deficit and public debt.* Financial Theory and Practice, 33, p. 273-298, 2009.
[13] Teica, R. A.: *Analysis of the public debt sustainability in the Economic and Monetary Union.* International conference about emerging markets queries in finance and business, 3, p. 1081-1087, 2012.
[14] Uctum, M. & Wickens, M.: *Debt and Deficit Ceiling, and Sustainability of Fiscal Policy: and Intertemporal Analysis.* Oxford Bulletin of Economics and Statistics, 62, p. 197-222, 2000.
[15] Von Wijnbergen, S. & France, A.: *Assessing Debt Sustainability in a Stochastic Environment: 200 Years of Dutch debt and Deficit management.* Economist – Nederland, 160, p. 219-236, 2012.

SUSTAINABLE TOURISM DEVELOPMENT AS THE BASIS OF ARCTIC LANDSCAPE CONSERVATION (CASE OF UST-LENSKIY PROTECTED AREA) IN THE REPUBLIC SAKHA (YAKUTIA), RUSSIA

Elena Totonova[1, 2]
Sébastien Gadal [2, 3]

[1] Institute of modern languages and International studies,
[2] North-Eastern Federal University, **Russia**
[3]Aix-Marseille Université, France

Abstract: Tourism natural resources are the basis for the development of the sustainable touristic activities in the North; defining the characteristics and specifies of the development of regional tourism and the implementations of touristic infrastructures. One of the types of tourist resources are the landscapes, which play a leading role in the development of ecological, adventure, scientific tourism, as well as hunting and fishing. With the introduction of eco-tourism, new landscapes are used in the tourism turnover. Eco-tourism rapidly developing across the world. Rapid growing demand for recreation, which is determined by the growth of urban population and their interest in the nature, contributes to the development of eco-tourism in the Arctic. As a result, the environmental factor is becoming an economic category: the conservation of environmental features and "natural" environment (stability criterion) becomes economically viable. In the Republic of Sakha (Yakutia), as well as throughout Russia, are rapidly developing a network of protected areas at three levels: Federal, regional and local. The purpose of this work is to study the development of ecological tourism in the State Natural Reserve "Ust-Lensky" of the Republic of Sakha (Yakutia), created in 1986 to preserve and study the arctic natural environment of the Lena River delta. This research is supported by the Russian Scientific Foundation program "Land Ontology: Semantics, Semiotics and Geographic Modelling". Landscape analysis allows to create a classification of the types of ecotourism according of the landscape's characteristics and territorial resources. The most suitable places were identified for eco-touristic environmental practices in the Reserve of "Ust-Lensky" with the creation of tours for cruise-ship tourists especially equipped for ecological trails, animal watching and scientific tourism. The implementation of the sustainable development of the natural reserve is necessary to establish a set of measures tourist infrastructure. With the development of eco-tourism, the interests of local authorities is focusing in the social development, as well as reserve's to improve the quality of services.

Keywords: Arctic, Russia, tourism, landscapes, reserves.

Introduction

Over the recent decades regions of the North with their picturesque landscapes and unique nature have become the focus of growing tourist activity. The tourist markets of the developed nations see a shift in consumer pattern towards more active forms of recreation. The share of active tourism keeps growing with extreme and exotic tours to faraway, "unexplored" destinations become more and more popular.

Certain geopolitical processes, growth of currency rate against Russian ruble, and a number of other reasons have led to the increasing popularity of domestic tourism. Current world economy situation resulted in the growing attraction of Russian holiday-makers to the distant and less-known areas of the country. Hence, the northern regions began to offer exclusive tourist routes which became particularly attractive (given their considerable cost) in the context of global tourist market development.

Tourist resources form the basis of tourist product; they define the course of regional tourism development as well as the investment priorities. Landscapes are one of such resources. Landscapes determine the progress of eco-tourism, adventure tourism, research tourism as well as tourism focused on hunting and fishing. As new forms of tourisms appear, new resources are capacitated by the growing industry, and system of landscapes is one of them [5].

The system of natural reserves is swiftly being developed in the Sakha Republic (Yakutia) as well as in Russian in general. There are three levels of such reserves: federal, regional and municipal. Yakutia's vast territory and preserved largely influenced the push in 1994 the set up of a natural reserves system (Ytyk Kere sirder). The republic's reserve system (officially given the status of national heritage) is presented by 2 federal reserves, 125 republican-level SPNTs and 95 municipal ones. The Artctic coast of the republic is part of the SPNT system as well. The SPNTs are of unique environmental, research, cultural and recreational value where land use is completely or partially banned. Doubtlessly, the development of SPNTs is a new form of landscape and environment preservation.

Thus, the Republic is capable of offering quite a variety of adventure/extreme tourism possibilities on the Russian market. Therefore grows the relevance of detailed analysis of market specifics and potential growth perspectives against the urge to minimize negative outcomes and high costs of territorial development.

1. Tourist resources of the Arctic

Arctic coast of Yakutia is of unique environmental, climatic, historical, cultural and economic significance. When studying the specifics of cultural and economic development of Yakutia's Arctic regions one cannot but notice a drastic differentiation among these regions. The Anabarsky, Allaikhovsky, Bulunsky, Nizhnekolymsky, Ust-Yansky regions are based on reindeer-herding, hunting, cage fur-farming and fishing. All of them are to some degree characterized by selective natural resources, focal manufacturing, a marked economic disproportion decreasing the production effectiveness. For instance, both Allaikhovsky and Nizhnekolymsky regions predominantly practice traditional use of land (reindeer herding and fishing) with complete absence of manufacture, which affects the economy of both [3].

In given situation service industry is viewed as the key to small-busyness development, particularly tourism which has the potential of leading to progress. Tourism has a potential of entrepreneurial attraction without large-scale investments (unlike manufacturing, for example) and is number one industry in terms of job

creation. Given the overall potential and present under-development of tourism it is particularly relevant to focus on the investment in the sphere.

Over the recent period due to air-transportation becoming more and more expensive the Republic sees growth of domestic tourism. To compare, only 5-6 years ago Yakutian tourist companies mostly specified in outbound tourism, whence today domestic routes to the regions of the Republic develop rapidly. Among the most popular ones are Lena pillars cruises, fishing and hunting trips, "Pole of cold", research tours to SPNTs (national parks, Ust-Lena reserve).

Domestic tourism development capacitates new types of natural landscapes. Landscape formation is a historical process, characterized by successive chronological formation. That is why the preset-day Arctic landscapes represent one of the stages of geological systems' evolution. Therefore, preservation of the Arctic landscapes is not only crucial in terms of lithologic base research, but also in terms of their future preservation.

Arctic regions of the Republic Sakha (Yakutia) form an arctic-tundra area of even lands which consists of mountainous regions in its south-eastern part and takes up a wide strip of coastal part in the North of the Republic. Bulunsky region treated within the frame of the given analysis as a sample object of tourist development study serves as the Arctic "gate" of the Republic (river port, sea port and airport). All of the island and northern part of the coastal area is occupied by the arctic deserts (little-developed territories with sharply continental climate and solid permafrost with frozen soil depth as thick as 500m). Geographic zones of arctic deserts are sharply pronounced here – tundra and northern taiga. Even land is presented by lacustrine-alluvial plains with northern taiga landscapes, dominating lakes and marshy lands [1].

Today's coasts of East-Siberian and Laptev seas washing the Bulunsky region mostly consist of arenaceous-argillous soft sediments containing a large amount of ice. When the latter thawed fossils of pre-historic animals were discovered: of mammoths, woolly rhinoceros, muskoxen and horses. In 1799 a local hunter named Osip Shumakhov came upon the first known mammoth fossils. The tusks were bought by the St. Petersburg Kunstkamera for 8600 rubles. Waters of Lena concave the banks and gradually erode the ancient isles of the East-Siberian and Laptev seas with average speed of up to 6 meters per year. Researcher believe that the isles were once part of the ancient Arctide plain. When ice wedges thaw, the cone-shaped forms – baijarakhs - grow on the cliff slopes [1]. Thermokarst processes lead to formation of large lakes.

One of the natural monuments of the Arctic is the ancient Stolb (Pilla) island, growing 114m high straight from the water on the delta edge. It is a residual mountain formed by the ancient carbonates around 400 mln years old. Beginning from the Taas Ary Lake, the picturesque cliffy banks of Tuora-Sis-Lenskaya pipe stretch over kilometers. The banks are oddly shaped as fortresses, Tourette's, columns, bridges, coves and some more fantastic forms. All these unique landscapes are not only focus of research interest; they are equally attractive to tourists. Also, several archeological sites on the new Stone Age were discovered on the banks of Lena. The sites contain everyday life objects from the period, such as stone arrow-heads and axes.

Culture and lifestyle of the indigenous peoples is worth special mentioning. Cultural tourism includes all its types aimed at discovery and education. These programs are based in the introduction and study of cultural and natural heritage in all its diversity. Tourism development promotes preservation of local cultures and traditional lifestyles. Products of such ethnographic tours are oriented at educating visitors on the traditional lifestyle, handicraft, ethnic cuisine, and traditional land use. [7]. To promote visits a combination of various types of tourism is practiced (cultural and eco-tourism). The tours dwell on busy activity schedule and low-cost housing. These tours are popular among both international and domestic visitors [3].

Bulunsky region offers bird-watching in Lena delta (89 bird species), individual tours with helicopter delivery, raft fishing on the rivers, individual hunting tours, cruises, ethnographic tours. Sports hunting and fishing tours are offered by "Yakutia" National Travel Company, as well as by companies "Arctic-Travel" and "Satal". Very perspective form of tourism is cruises carried by "Gostinitsy ALROSA"/ "ALROSA Hotels" company. The "Mikhail Svetlov" cruise-ship tours offer a round trip Yakutsk-Tiksi-Yakutsk (14 days/13 night) and include stops at Kyusyur and Tiksi (Neielovo). The average cost of the cruise is 80 000 rubles package which includes excursions on each stop-over along the rout. "Gostinitsy ALROSA" estimates that provided infrastructural tourism development and capital improvement of Tiksi, the annual tourist flow would reach 500 persons per navigational season. [10; 12].

2. Arctic reserves – Ust-Lensky federal natural reserve

Eco-tourism is one of the world's fastest developing spheres. Growth of the Arctic eco-tourism is promoted by rapidly increasing demand for nature recreation, determined by growing urban population with its keen interest in preserved environment. As a result the eco-factor is becoming an economic category: sustaining clean environment (a sign of sustainability) becomes economically profitable. Nature preservation as well as preservation of culture, traditions, lifestyle of indigenous peoples is the basis for stable growth of tourist sphere. Eco-tourism opens new perspectives of the territories' economic development.

The stretch of SPNTs in the lower reaches of Lena (73.6 000 square km.) makes up 33% of the Bulunsky region area or 2.4 % of the territory of the Republic. Primary aim of eco-tourism development in SPNTs is promotion and sharing the knowledge on environmental problems, nature preservation and protection. It is here where eco-tourism becomes a powerful educational tool of eco-tourism and natural heritage value information [8].

The largest federal natural reserve Ust-Lensky (Bulunsky region) was established in 1986 with focus on preservation and research of natural systems of Lena, one of the world's largest rivers. The reserve is location in the river delta and in the northernmost tip of the Kharaulakhsky ridge. It contains unique elements of natural zones from polar deserts, De-Long glacier islands in the north to forest-tundra in the south. The reserve is divided into to segments: "Deltovy" (Lena delta, part of the Laptev Sea basin) and "Sokol" (northern part of the Verkhoyandk mountain system and Lena river) [1].

Here under special protection are breeding populations of wild reindeer, Laptev walrus, bighorn, narwhal, spawning sites of whitefish, mass nesting grounds of migratory water-fowl. In order to conduct the research and monitoring of biological resources in Lena delta the "Lena – Nordenscheld" International biological station was established in 1995. The station is part of the world biosphere reserves system (89 bird species) [1].

A number of tourist routes specializing in introduction to the Arctic nature are offered; among them are boating and rafting, hiking and skiing tours. Primary tourist measure in the protected territories is registry of the number of visitors (both organized and independent ones); the data, however, the Ust-Lensky reserve only presents as part of its official activity report. As a result a segment of statistic data on tourist visits to the reserve remains unaccounted by the Republic [4].

According to the data presented by Research department of the Ust-Lena reserve [2] until 2014 24 eco-trails were registered. Over 2009-2012 the reserve was visited by 590 tourists, 172 of them international. Due to the absence of systematic account of visitation the data only shows the approximate number of independent tourists. This data is of little interest or significance in respect to the service quality on the part of the reserve.

Unfortunately, the Ust-Lena reserve tourist activity is still in its infancy. Both administration and staff realize the positive role of eco-tourism within the republican frame of the sphere and the interest it presents as an Arctic territory rich in biological and landscape diversity. There is a certain level of disagreement between the supporters of eco-tourism development and those who are protective of the reserve and view the industry as a negative force in terms of preservation activity. All the while the reserve development is never considered from regional viewpoint which could result in an agreement and account for the interests of all sides: the reserve, the local population, the local administration and the republic. Each of the sides seems to be in parallel existence and as a rule the local people's interest in preserving their native lands is never considered [4].

Remoteness of the territory, weak road infrastructure and material resources of the park, as well as limited staff of the Research department present quite a challenge to effective implementation of methodological guidelines on the development of eco- and introductory tourism. Weak technical facilitation of the seasonal inspection and guards, lack of off-road transport during the interim seasons also slow down the development of tourist industry.

Today's challenges facing tourism development in the reserve are following:

1. cost of transportation services, under-developed infrastructure;
2. lack of qualified specialists in the sphere of eco-tourism;
3. conducting the research activity and effective monitoring in the reserve;
4. lack of agreement among the sides interested.

SCIENTIFIC 3rd INTERNATIONAL MULTIDISCIPLINARY CONFERENCE 16-22 2016 SOCIAL SCIENCES AND ARTS

Therefore the main obstacle facing the effective development of the Ust-Lena federal SPNT is the need to strengthen the material and technical resources (for instance building and sustainable maintenance of guards, new equipment). In order to implement the development plan a whole set of measures with focus on structural changes in material and technical resources, improvement of tourist infrastructure as well as a management plan capable of pushing the development of eco-tourism in Bulunsky region are needed [4].

Natural reserve is capable of producing a set of eco-tourism products and to offer its services. All the while tourism development should be aimed at preserving the best of what is available for the local population and singling out issues that need to be addressed. For instance both the federal government and local administration are interested in social improvement and attracting investment to infrastructure, while the reserve is interested in improvement and renovation of service quality. When it comes to an SPNT tourism development must be accompanied by strict monitoring and observations and taking into the account the reserve's carrying capacity. Thus, the following tasks of the reserve's prospective development are the primary ones:

- establishing the mechanisms of charging as per visit to the reserve;
- establishing the "state – private" partnership system aimed at developing alternative income source for local population and promoting new jobs;
- planning, monitoring and development of research-based approach to tourism development.

Tourism development in the nature reserve depends largely on the systemic approach to planning and management of the process. The plan should contain the expected (aimed) state of the reserve as well as the most effective and practical ways of achieving the aim. In a way a plan of tourism development based on the territory of a natural reserve is required for maximizing the outcome and minimizing the costs.

ACKNOWLEDGEMENTS

The research was carried out as part of RSF No 15-18-20047 "Ontology of the Landscape: Semantics, Semiotics and Geographical modeling".

CONCLUSION

The conducted expedition showed that the forms of eco-tourism most suitable for the nature-preservation agenda of the "Ust-Lensky" reserve are: cruises along the equipped eco-trails, animal watching and research tourism. In order to improve information and guidance of the visitors a system of indicators is being installed along the reserve's border; development of camping sites is planned. Sustainable development of nature reserve requires a set of measures aimed at the improvement of material and technical resources as well as tourist infrastructure. Tourism development must consider the perspective of local authorities (who might be interested in social improvement) and the preserve itself (in terms of service improvement). Tourist development on the territory of natural reserve must be accompanied by observation and monitoring, accounting for the carrying capacity of the reserve. Availability of diverse landscapes is of great tourist value. Landscape as a type of tourist resource presents a

basis for building the territorial product, tourist development and Arctic's sustainable development.

Thus, a natural reserve is capable of developing environmentally-friendly tourist products and offering its services. Tourism meanwhile should be aimed at preserving the best of what is available for the local population and singling out the problem areas. For instance, the federal government and local authorities are interested in social development, attracting investment in infrastructure, while the reserve's interests are improvement and further development of services. Tourism development on the territory of natural reserve must be accompanied by strict monitoring from environmental researchers and while taking into account the carrying capability of the reserve.

Any forms of regulated tourism are the most suitable type of economic activity for the protected territories of the Arctic, their unique system of landscapes which is capable of being profitable. Therefore, tourist development in a natural reserve depends on the systemic approach to planning and management. The plan should be based on the perspective state of the reserving the future on the one hand, and practical ways of achieving this aim. A plan of tourism development on the protected territory is required for maximizing the benefits and minimizing the costs.

REFERENCES

[1] Гуков А.Ю. Усть-Ленский заповедник: 25 лет природоохранной деятельности // Заповедники Российской Арктики: проблемы и пути решения. Материалы Всероссийской научно-практической конференции, посвященной 25-летию Государственного природного заповедника «Усть-Ленский» (п. Тикси Республики Саха (Якутия), декабрь 2010 г. М., 2010. Стр. 3-13. / *Gukov A.Y. Ust-Lenskiy zapovednik: 25 let prirodookhrannoi deiatelnosty// Zapovedniki Rossiyskoi Arktiki: problemy i puti resheniya. M.,2010. Ss. 3-13*/ Russian Arctic reserves: problems and ways of soving them. In: Proceedings from the conference (Tiksi, Republic Sakha (Yakutia), Dec. 2010. Pp. 3-13

[2] Отчет о результатах деятельности федерального государственного бюджетного учреждения, находящего в ведении Министерства природных ресурсов и экологии Российской Федерации. Государственный природный заповедник «Усть-Ленский». П. Тикси, Булунский район, Республика Саха (Якутия). 2014 г. / *Otchet of rezultatakh deiatelnosti federalnogo gosudarstvennogo budjetnogo uchrejdeniya, nakhodyashegosya v vedenii Ministerstva prirodnykh resursov i ekologii RF. Gosudarstvennyi prirodnyi zapovednik "Ust-Lensky". Tiksi, Bulunsky raion, Resp. Sakha (Yakutia)/* Report on the activity of the federal budget institution under the jurisdiction of the RF Ministry of natural resources and environmental protection. Federal nature reserve "Ust-Lensky". Tiksi, Bulunsky region, Republic Sakha (Yakutia).

[3] Тотонова Е.Е. Арктические районы Республики Саха (Якутия) и возможности адаптации к рынку // Концепт. – 2014. – № 09 (сентябрь). – ART 14249. – URL: http://e-koncept.ru/2014/14249.htm. – Гос. рег. Эл No ФС 77-49965. – ISSN 2304-120X./*Totonova E.E. Arkticheskie raiony Respubliki Sakha (Yakutia) i vozmozhnosti adaptatsii k rynku// Koncept. – 2014. – #9 (sentiabr). – ART 14249. – URL: http://e-koncept.ru/2014/14249.htm - State reg.El.No FS 77-49965.- ISSN 2304-120X/*

Totonova E.E. Arctic regions of Republic Sakha (Yakutia) and market adjustment perspectives // Concept. – 2014. – #9 (September). - ART 14249. – URL: http://e-koncept.ru/2014/14249.htm. - State reg. el. No FS 77-49965. – ISSN 2304-120X.

[4] Тотонова Е.Е. Использование опыта развития национальных парков северных территорий Канады в Республике Саха (Якутия) / qje.su/regionalnaya-ekonomika-i-razvitie/ispolzovanie-opyta-razvitiya-natsionalnyh-parkov-severnyh-territorij-kanady-v-respublike-saha-yakutiya / Totonova E.E. Implementing the experience of developing national parks in the Canada's Northern territories in Republic Sakha (Yakuia).

[5] Тотонова Е.Е. Опыт развития туризма на Севере Канады : монография / Е. Е. Тотонова. – Якутск : Изд-во Якут. госуниверситета, 2009. – 194 с. / *Totonova E.E. Opyt razvitiya turizma na Severe Kanady: monografiya. – Yakutsk: Izd-vo Yakut. Gosuniversiteta, 2009. - 194s. /*Totonova E.E. Tourism development in Northern Canada: Monograph. – Yakutsk: Yakutsk State Univ. Publishing House , 2009. – 194p.

[6] Тотонова Е.Е. Опыт развития туризма северных территорий Канады и возможности его использования в России» // Экономика и управление. – 2015. - №9. С. 21-25. */Totonova E.E. Opyt razvitiya turizma severnnykh territoriy Kanady i vozmozhnosti iego ispolzovania v Rossii//Eknonmika i upravlenie. – 2015. - #9. S. 21-25./* Totonova E.E. Tourist development in Canada's Northern territories and prospects of its implementation in Russia//Economy and management. – 2015. - # 9. Pp. 21-25.

[7] Тотонова Е.Е., Слепцов С.Ю. Современные особенности пространственного развития арктических районов Республики Саха (Якутия) // Экономика и управление. 2014. №2. Стр. 19-23./ *Totonova E.E., Sleptsov S.Y. Sovremennyie osobennosti prostranstvennogo razvitiya arkticheskikh raionov Respubliki Sakha (Yakutia)// Ekonomika i upravlenie. 2014. # 2. Str. 19-23/* Totonova E.E., Sleptsov S.Y. Modern characteristics of the Republic Sakha (Yakutia) Arctic regions' spatial development//Ekonomika i upravlenie. 2014. # 2. Str. 19-23.

[8] Шимова О.С. Основы устойчивого туризма / О.С. Шимова. – Минск: Новое знание; М.: ИНФРА-М, 2013. – 190 с. / *Shimova O.S Osnovy ustoichivogo turizma / O.S. Shimova. – Minsk: Novoie znaniye; M: INFRA-M, 2013. – 190 s./* Shimova O.S. Basics of sustainable development in tourist sphere/O.S. Shimova. – Minsk: Novoie znanie; Moscow: INFRA-M, 2013. – 190p.

[9] URL:http://www.ustlensky.ru

[10] URL:http://www.sakha.gov.ru

[11] URL:http://www.nature.ykt.ru

[12] URL:http://www.goyakutia.com

SWOT ANALISYS OF BANAT AND TIMIS AGROTOURISM SECTOR

Prof. Dr. Ioan Petroman[1]

PhD Student Codruţa Suciu[1]

Prof. Dr. Marius Cătălin Benea[2]

PhD Student Rodica Bolocan[1]

Lecturer dr. Diana Marin[1]

[1] Banat's University of Agricultural Sciences and Veterinary Medicine „Regele Mihai I al României" Timisoara, Faculty of Agricultural Management, **Romania**

[2] Politehnica University Timisoara, Faculty Hunedoara Engineering, **Romania**

ABSTRACT

In order to highlight the strengths, weaknesses, opportunities and risks from Banat and Timis agrotourism sector from Western area of Romania we have resorted to an economic analysis of the share of agrotourism, rural tourism, of related services, of trade and historical-cultural resources from this area. As strengths we noted the high degree of processing and diversity of the tourism sector, the existence of a large variety of local raw materials, qualified labor force, but also weaknesses as the lack of an stimulative system for companies from tourism field, the insufficient development of the infrastructure designed to support economic activities, poor quality management and low entrepreneurial training. In terms of agrotourism and rural tourism as strengths we found the ability to communicate in other international languages, the existence of special rural recreation areas, nature mostly well preserved and unpolluted.

Keywords: agrotourism, Banat, SWOT analisys

INTRODUCTION

The term **agrotourism** has appeared in the 90s in order to describe ***any type of activity based on the relationship between agriculture and tourism***.

Currently, the term designates, in United States of America, a concept older than 100 years, from the late nineteenth century, when city visit their relatives or friends from the countryside in search of tranquility and of an cleaner air [1,3].

This practice has become more popular in the following decades, periods of time historical marked [4,7,8]:

- in the '20s, along with the appearance of the automobile and with the development of engineering industry;

- in the 30s, when people felt the pressure created by the biggest economic crisis until then;
- in the 40s, when townspeople tried to escape from the stress created by the war and of the traces left by the war;
- in the 60s and 70s, thanks to those who had the nostalgia of country life and of all that it meant;
- in the 80s and 90s due to the popularization of agrotourist activities.

This picture of **agrotourism** - as it was practiced over time - would allow us **to conclude that all Romanians who go, currently, at the end of the week, to the countryside, practice agrotourism** - only that to those visits at the country lack the other ingredients of **agrotourism** which are presented in detail below[2,5].

In the few decades since it is practiced, **agrotourism**, found still in search of its own identity, has known many names and definitions that have, all, in common, **the rural** [6].

It is not easy to define **agrotourism** because it still missing the appropriate generic model. The definition of **agrotourism** and of the other types of tourism related, in a way or another, **by the practicing of tourism in rural area** – **agrarian tourism, agricultural tourism, tourism at the farm, tourism in village, tourism in the countryside and rural tourism** - still make the subject of many debates in the specialty literature. Unfortunately, as in case of all development realities, it has not been reached, so far, to a firmly consensus. Most definitions presented below tend to focus on **the types of activity that visitors practice in rural area**. This approach has allowed the labeling of several different types of **"rural" tourism**.

MATERIAL AND METHOD

Through this scientific approach I did make a SWOT analysis at the County level in order to establish the strengths, weaknesses, opportunities and risks of practicing this type of niche tourism. SWOT analysis of the agrotourism sector from Banat region of Timis County was made from economic point of view, of the share of agrotourism, rural tourism, of services and commerce and of the cultural-historical resources.

RESULTS AND DISCUSSIONS

Analyzing from **economic** point of view we find the following:

Strong points

- the development of new economy, with high degree of processing and the diversity of the tourism sector;

- diversification of the areas of activity of manufacturing and tourism companies, appearing niche forms of tourism;

- the existence of a variety of local raw materials that can be used in the tourism activity;

- the existence of an infrastructure to support economic activity;

- labor force qualified in tourism, the existence of specialized tourism faculties from the area;

- the large share of SMEs in employment;

- special geographical location, resources and, road, rail, air and river infrastructure;

- multicultural tradition (nations) in the practice of tourism.

From the weaknesses of SWOT analysis we distinguish:

- the absence of a stimulatory system in order to creation of SMEs in niche tourism (rural, agrotourism, ecotourism);

- traffic infrastructure underdeveloped in areas with villages with agrotourist vocations;

- the insufficiency of the utilities necessary to conduct holiday villages in rural area with tourist vocation;

- the lack of a correlation between the demand and supply of labor force;

- the inexistence of an adequate information system witch highlight tourist destinations with vocation in rural area for agrotourism and rural tourism;

- the management of a poor quality and low entrepreneurial training;

- low level of the demand on domestic market;

Opportunities for the development of agrotourism in the analyzed area:

- cross-border cooperation with specialized units;

- creating programs for training and managerial improvement of workers from tourism;

- tourist and agrotourist market niches;

- the participation in the Danube - Mures - Cris - Tisa Euro region and West Region;

- the growth potential of tourist and agrotourist rural market, through the development of infrastructure;

- travel agencies in rural areas.

Threats and risks:

- excessive taxation, in the development of tourist activity;

- unqualified labor force;

- the inexistence of an research infrastructure performance in tourism;

- the risk of unsuitable to quality standards from services;

2. From agrotourism and rural tourism can be identified:

Among the strong points we mention:

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION 3rd MULTIDISCIPLINARY SGEM 2016

- the ability to communicate in other languages (English, French, German) of the inhabitants but also of other languages: Hungarian, Serbian, Bulgarian;

- the existence of outstanding urban and rural recreational areas;

- the existence of wooden churches, historic monuments, natural reserves (Faget area);

- the existence of some catering facilities and services diversified;

- nature largely well preserved and unpolluted;

- customs, traditions and crafts with multiple ethnic cultural influences that attract tourists from abroad;

- the hospitality of the population;

- geothermal and mineral resources;

Weaknesses from agrotourism and rural tourism are:

- poor quality of tourist services supply, especially leisure;

- progressive degradation of cultural and artistic heritage;

- not modernized roads;

- insufficient urban infrastructure in agrotourist areas;

- insufficient promotion of local attractions and of the programs and activities of tourist interest;

- insufficiency of organizations of tourism promotion;

- lack of information and of tourist maps;

- lack of infrastructure for access to some tourist objectives;

- the lack of garbage collection services in rural and tourist areas;

- lack of recreation areas arranged in wooded areas;

- unknowing the communication techniques of those involved in rural tourism;

- insufficient promotion of resources and of the opportunities of tourist services.

Opportunities:

- construction of the highway link with the EU;

- developing cross-border cooperation in tourism field;

- development of a quality material base in business tourism and farm agrotourism;

- the existence of professional training and development programs in tourism field;

- the existence of some programs and specialized structures in promotion field and tourist information;

- the existence of higher education in the field;

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY SGEM 2016

- the improvement of the access to tourist objectives through upgrading and building roads, asphalting the road to Triplex Confinium to those three borders;

- the possibility of practicing forest-tourism, ecotourism, authentic agrotourism;

- high cultural tourism potential, due to existing natural and entrophic resources.

Threats:

- strong competition from neighboring countries regarding farm agrotourism (Hungary, Serbia);

- increasing prices due to strengthening of the national currency against major currencies;

- taxation and excessive bureaucracy;

- lack of imagination and innovation in services field relating to tourism activity and leisure;

- climate change - periods of fine weather are becoming rarer and less in duration compared to the rainy periods or excessively hot or too cold;

- the offers of county's tourism products are not internationally competitive (few authentic souvenirs);

- prejudices against local supply;

- reduced purchasing power of the internal market.

3. In terms of **services and commerce we have identified**:

As strengths:

- the appearance of large shopping centers;

- the appearance of some units for youth (computer clubs, discos, recreational beach areas);

- strong development of the private sector in commerce and services;

- large number of foreign investors in the field of services and commerce;

- improved public catering services;

- diversified banking and financial services;

- developed information services;

Among the weaknesses we mention:

- poor quality of public administration services;

- modest quality of rural facilities (parks, recreational areas and entertainment, playgrounds for children, street furniture, traffic signs);

- modest quality and low density of catering establishments located along the main traffic routes;

- the concentration of the main services in municipalities in the detriment of small towns and rural localities, especially from hilly and mountainous areas;

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION 3rd INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

- lack of infrastructure to offer quality services, especially in rural area;

- poor quality services in public catering in rural area;

- financial-banking services less accessible in rural area.

Threats and opportunities in terms of services and commerce:

- increasing the demand for professional services;

- the development of e-commerce with tourist services (lack of opportunities for payment card at agrotourist farm);

- the existence of some professional training programs in the field;

- the creation of joint ventures firms or wholly foreign capital in the field of services;

- funding opportunities of some projects that create necessary infrastructures for the development of commerce and services.

- relatively low demand for services in rural area;

- excessive increase of cost of services;

- difficulties of adapting to EU quality standards;

- reduced purchasing power of the population for agrotourist services.

4. In terms of cultural history we find:

Strong points:

- the existence of some cultural institutions (libraries, theaters, memorials, museums, ecclesiastical settlements, historical monuments, natural, trade routes);

- the existence of multi-ethnic cultural traditions (artisan crafts, music, ports traditional folk theater, gastronomy, pastoral);

- cultural traditions, historical, ethnic and old folk and religious.

Weaknesses:

- limited access of the population to cultural activities, in rural areas;

- weak promotion of actions with cultural character in rural areas.

Opportunities:

- the support of local government and attract of some funds for regional development and diversification in the development and diversification of cultural activities, agrotouristic rural and of farm authentic.

Threats:

- insufficiency of financial resources for promotion of traditional culture, habits;

- declining of youth interest for entertainment and rural cultural activities.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY SGEM 2016

CONCLUSION

Cultural and historical resources, the biodiversity of the area have influence on regional and local tourism activities, contributing to the appearance of some tourist destinations with vocation in this multicultural area as it is the Banat's territory in general and Timis in particular.

Among the strengths in terms of agrotourism and rural tourism to note is there is the existence of a good road infrastructure, well preserved and unpolluted nature, traditions, customs, multiple cultural influences and hospitality.

From cultural and historical point of view as strengths of the area analyzed, Banat territory and Timis are the cultural institutions well distributed in the territory, the cultural traditions of Germans, Hungarians, Serbs, Croats ethnics, the existence of some folk area, pastoral activities and specific gastronomy.

REFERENCES

[1]. Beeton, S., *Community Development Through Tourism*. Collingwood, Australia: Landlinks Press, 2006

[2]. Blacka, A., P. Couture, C. Coli, J. Dooley, A. Hankins, A. Lastovica, B. Mihálik, C. Reed, M. Uysal., *Agri-Tourism*. Communications and Marketing, College of Agriculture and Life Sciences, Virginia Polytechnic Institute and State University, 2009

[3]. Iosim Iasmina, Popescu Gabriela, Some aspects of communication strategies used in tourism, Research Journal of Agricultural Science, 47 (4), Timisoara, Romania, pp. 95-98, 2015

[4]. Mantecón, A., Huete, Raquel. (2007). The Role of Authenticity in Tourism Planning: Empirical Findings from Southeast Spain. *Tourism 55 (3)*: 323-333

[5]. Marin Diana, Petroman Cornelia, Petroman I., Ciolac Ramona, Balan Ioana, Study regarding rural guest-houses and agri-tourist household's number and percent in the total number of tourist establishments in Romania, Lucrări ştiinţifice seria Agronomie ISSN 1454-7414, vol. 52 (2), Iasi, Romania, p.469-472, 2009

[6]. Petroman Cornelia, Petroman I., Orbei Dora, Popescu Gabriela, Activities generating new jobs in the rural area, Conference: 2nd International Scientific Conference on Rural Development, Procedeengs: GlobaIisation and integration challenges to rural Development in Eastern and Central Europe, I .S.B.N. 1822-3230, Vol II, Book 1, pag. 218-220, Kaunas Lituania, 2005

[7]. Petroman Cornelia, Matiuţi A., Bălan Ioana, Palade S., .Lala V., Territory arrangement methods for the practicing of hunting tourism, Lucrări ştiinţifice Management Agricol, , ISSN 1453-1410, Seria 1, vol XI (4) , Timişoara, Romania, pp. 130-134, 2009

[8]. Steiner, C. J., Reisinger, Yvette. (2006). Understanding Existential Authenticity. *Annals of Tourism Research 33 (2)*: 299-318

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

TATARSTAN TOURISM WITHOUT TURKEY: ECONOMIC IMPLICATIONS OF RUSSIA'S SANCTIONS

Prof. Dr. Vladimir A. Rubtzov
Assist. Prof. Bautista E.H.
Assoc. Prof. Dr. Niyaz K. Gabdrakhmanov

Kazan Federal University, **Russia**

ABSTRACT

The Republic of Tatarstan has enjoyed tremendous trade links with the principal business hub of Turkey like Ankara, Istanbul and other regions. Tatarstan which is considered of the largest economies of Russia and Turkey have enjoyed burgeoning trade ties in recent years despite disagreements on a number of political issues from Moscow's annexation of Crimea from Ukraine to the more than four-year old civil war in Syria. But the friendly relation between two countries fall in danger apart when Turkish air force shot down a Russian Sukhoi Su-24M bomber aircraft on the border of Syria by claiming that the plane had crossed its territory though Russian authority denied the claim. Moscow imposed economic sanctions against Ankara when Turkey leadership refused to make official apology demanding by Russian government. Economic sanction imposed by Russian authority against Turkey by the consequences of downing of a Russian aircraft could affect the economy of Turkey in different ways, i.e. food, transport, education and specially tourism industry. Because of the sanction unlike other Russian regions, the republic of Tatarstan's tourism business faced immediate negative effects from all direction. Though primary effects of the incident still seems to be limited and just in one way but secondary effects proved to be more dangerous for both of countries economy.

Keywords: Russia, Turkey , Tatarstan, Tourism, sanctions.

I. INTRODUCTION

Turkish Republic is a main strategic partner of Tatarstan Republic, communication between these regions annually and affect different sectors of society, including tourism[1,2]. For many years, Tatarstan stakes on development of Tatarstan-Turkish economic relations, focusing on ethnic and religious affinity. The Republic has a signed cooperation agreement with 7 separate provinces of Turkey[3].

Turkey has invested in Tatarstan's economy about $ 1.5 billion. According to the Tatarstan Investment Development Agency (TIDA), Turkey's share in the total volume of foreign investments in the Republic of Tatarstan is about 25%. In analytical data of Service of State statistics of Tatarstan Republic, Turkey among the partner countries takes the 12-th place in the sphere of trade relations with the region. Total trade turnover in January-September between Tatarstan and Turkey amounted to $ 264.1 million, in which $ 162.1 million accounted for export and $ 102 million for import[4,5,6].

Now in the Republic of about 280 joint Turkish-Tatarstan enterprises and projects. Thus, Turkey occupies a leading place in terms of commercial organizations with foreign capital participation registered on the territory of the Republic of Tatarstan.

Also the regions unite sustainable cultural ties. Tatarstan and Turkey successfully cooperate within the framework of IRCICA, TURKSOY and several other organizations.

The Republic of Tatarstan and Turkey have signed an agreement for cooperation in sensible areas, i.e. education (2001), from that year the flow of students was increasing around 5% per year until 2014, Most of the Turkish students came to Kazan and at the same time Tatarstan students had studied at major universities of Ankara, Istanbul and Izmir[7,15].

Celebration of Sabantuy and the Day of Culture of the Republic of Tatarstan have become a tradition in Turkey. Turkish filmmakers annually take part in the work of the Kazan International Festival of Muslim cinema. In Istanbul has opened a exhibition Centre of traditional arts and cultures of the peoples of the Republic of Tatarstan in the museum complex Turkic peoples "Topkapi".

Economic relationships between Turkey and Tatarstan offer much potential in the fields of trade and investments. Signed a Protocol on cooperation between the Council of municipalities and the Union of municipalities of the Turkic world. The twin cities of Kazan: Eskisehir, Istanbul, Antalya, Ankara. Four more cities of Tatarstan have twinning with Turkish cities.

Tourism is one of the priority directions for development of the Republic of Tatarstan, and Turkey is one of the main markets for the promotion of the tourist product of the RT. It takes the first place in the number of arrivals in Tatarstan[8]. The majority of Tatarstan tourists in turn to travel to Turkey. Tourism between regions has been developing for a long time. Their representatives meet annually at business forums and trade fairs, signed a number of agreements on joint tourism development. For example, in January 2015 year Republic of Tatarstan took part in the exhibition "East Mediterranean International Tourism and Travel Exhibition" (EMITT-2015), which was held in Istanbul.

Public policy in relations between Turkey and Russia.

Russian President signed the decree No.583, published on 1 December 2015, imposing the following restrictions and sanctions against Turkey. [10,11,16]:

- A ban on imports of certain foodstuffs (mainly fruits, vegetables and poultry) from Turkey, as well as certain works and services (in effect from 1 January 2016);
- From 2016 employers under Russian territory are banned from employing Turkish nationals inside Russian Federation, employment that is to effect on December 31th of 2015 is not affected and qualifies for renewal.
- A curb on future economic activities of Turkish firms in Russia, although these measures appear to be carefully chosen not to affect current construction activities;
- A ban on charter flights between Russia and Turkey, with advice to Russian tour firms not to sell any Turkey holidays to Russian citizens to guarantee aviation safety;

- A major reduction in the number of international road transport permits for Turkish companies (from 8,000 in 2015 to 2,000 in 2016), Safety control in Russian waters and seaports in the Azov-Black Sea basin to be tightened;
- The suspension with immediate effect of bilateral economic cooperation programs and commissions between the two countries;
- The suspension of visa-free regime for Turkish citizens travelling to Russia.

On the site of the Rostourism December 30, 2015 has been posted the order about "Exception information about tour operators from a Single Federal Register of tour operators". In the list of 19 companies (including very large), under the jurisdiction of Turkey[12].

II. Tourist Frames: relevant Facts

There are two main relevant facts.

1. People who travel to Kazan from Turkey
2. People who travel to Turkey from Kazan.

With regard to the impact of sanctions by Russia against Turkey on tourism in Tatarstan can be mentioned a few areas.

Firstly, they affect inbound tourism of Tatarstan. Leaders in the number of tourists arriving to the Republic of Turkey are (fig. 1). 14 968 tourists from Turkey visited Tatarstan in 2015. This situation persisted for many years, and is annually marked positive dynamics of the number of arrivals in this direction[11,12]. Accordingly, after the imposition of sanctions against Turkey number of trips decreases markedly. Thus, before the Tatarstan challenged changes to existing priority markets and seek to attract more tourists from other countries.

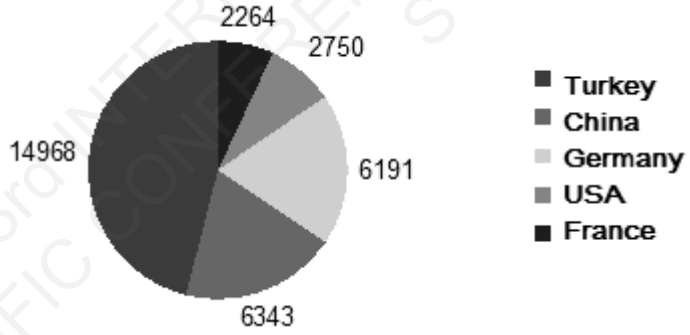


Figure 1. Tourism industry of Tatarstan showing the tourist flows from different part of the world (2015).

Secondly, after the imposition of sanctions, as a tourists from across Russia and Tatarstan in particular, are undergoing financial losses from choice of place of rest that would have combined affordable price and quality. As you can see from the dynamics of tourist departures from RT (see fig. 2), each year a large number of people of Tatarstan choose their place of rest it is Turkey. Every week from Kazan to Antalya and Istanbul flew more than 20 Charter flights. Not only in Russia Turkish Republic occupies for several years a leading position among the tourist destinations.

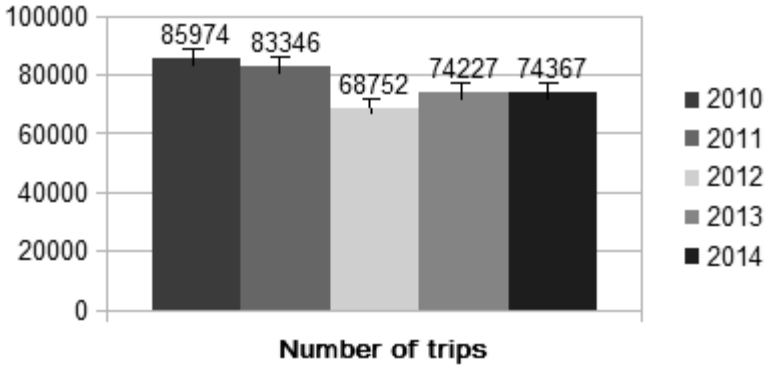


Figure 2. The number of tourist from Russia in Turkey.

The third moment of the impact of sanctions on tourism is a violation of ties in the training of professionals of tourism and hospitality industry. Representatives of Governments, tourist companies, hoteliers of Turkish Republic and the Republic of Tatarstan exchanged experience during annual meetings, trainings and development programmes. The last such meeting was held in Kazan on 14 April 18, 2015 year. Also, many universities of Tatarstan, leading training professionals of hotel business and tourism, conducted practical training students Turkish-based hotels and travel companies[13,14].

III. CONCLUSION

After the outbreak of the conflict Russia with Turkey because of the downed fighter November 24, 2015 and subsequent sanctions the Kremlin against Ankara Tatarstan really ended up in ambiguous situations, as they affect the main partner of the Republic.

In the end of year 2015, proportion of Turkish interest in the tourism sector was around 1-3% of visitors, that's why we couldn't see a significant change in the distribution of tourist flows, because the sanctions were imposing not in the tourist season [17]. But the 2016 season picture could change markedly. The negative impact of tourism business could suffer some extant and probably have to be rebuilt in other markets.

The main tourist season in Turkey is end of April-September. If the restriction will last in this period of time, then of course it will be a tremendous loss and damage for companies and travel agencies. Approximately 70% of all flow of mass tourism of Russia is Turkey. Therefore, the small agency that sell tours only in Egypt and Turkey, just suspend its work and closed.

Before the tourist business raises we need to consider options for alternative directions in outbound tourism and attracting tourist flows from other countries (the main market here could be China, which now ranks second in the number of arrivals in the Republic of Tatarstan)[15]. Although the obviously negative effects of the imposition of sanctions, Tatarstan has opportunities to develop domestic tourism industry, but for this purpose it is necessary to improve the level of service and infrastructure.

REFERENCES

[1.] 1."The Economist: "Turkey in the Balkans: The good old days?"". Retrieved 5 November2011.

[2.] 2.Douglas Arthur Howard. The History of Turkey. Greenwood Publishing Group. pp. xiv–xx. ISBN 978-0-313-30708-9. Retrieved 2 April 2013.

[3.] Baser, Bahar (2015). Diasporas and Homeland Conflicts: A Comparative Perspective. Ashgate Publishing. p. 63. ISBN 1472425626.

[4.] 4."The Political Economy of the Media in Turkey: A Sectoral Analysis" (PDF).tesev.org.tr. Retrieved 18 February 2015.

[5.] 5."TÜRKİYE İŞ BANKASI BİNASI". envanter.gov.tr. Retrieved 18 February 2015.

[6.] 6.State Committee on Tourism of the Republic of Tatarstan. Official website. Available at: http://tourism.tatarstan.ru/

[7.] 7.Federal State Statistics Service in Russia. Official statistics. Available at: http://www.gks.ru/

[8.] 8. Federal Agency for Tourism in Russia. Official website. Available at: http://www.russiatourism.ru/

[9.] 9.Presidential Executive Order No. 583 “On measures to ensure the national security of the Russian Federation and the protection of Russian citizens from criminal and other unlawful acts, and on special economic measures with regards to the Republic of Turkey,” dated November 28, 2015.

[10.] 10."Syria: Saudi-Turkish alliance backs 'Conquest Army' rebels to defeat Bashar al-Assad".International Business Times. 7 May 2015.

[11.] 11.Resolution of the Russian Government No. 1457 «On approving a list of specific works that cannot be performed in Russia by organisations under Turkish jurisdiction, as well as by organisations controlled by Turkish citizens and (or) organisations under Turkish jurisdiction, from 1 January 2016», dated December 29. 2015.

[12.] 12.Rostourism order “Exception information about tour operators from a Single Federal Register of Touroperators" №569-Pr-15 dated December 30, 2015

[13.] 13.Turkey spent $7.6 billion hosting 2.2 million Syrian refugees, says deputy PM".Euronews. September 2015. Retrieved 24 September 2015.

[14.] 14."Turkey: From regional to global player". dw.de. Retrieved 18 February 2015.

[15.] 15. Bagautdinova, N.G., E.E. Chernov, E.M. Pudovik, and O.V. Pratchenko. "Potential of Tourism Development in the Republic of Tatarstan", Mediterranean Journal of Social

[16.] Sciences, 2014.

[17.] 16. Economic implications of Russia’s sanctions against turkey. (2015, December 7). Retrieved March 27, 2016, from http://www.ebrd.com/news/2015/economic-implications-of-russias-sanctions-against-turkey.html

[18.] 17. Bagautdinova, N.G., M.V. Panasyuk, I.R. Gafurov, and D.H. Shaiheeva. "The Interaction between the State and Small Business in Russian Regions", Mediterranean Journal of Social Sciences, 2014.

[19.]

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

TAX COLLECTION AND ECONOMIC GROWTH: OECD PANEL STUDY

Ing. Petr Zimčík

Ing. Mgr. Vlastimil Reichel

Faculty of Economics and Administration, Masaryk University, **Czech Republic**

ABSTRACT

Tax policy ensures a collection of necessary funds for governments to operate. Taxes also represent an obligation for citizens and companies inside an economy. The aim of this paper is to examine possible effects of individual tax categories on real economic growth in 32 OECD Member States. This research uses annual data from time period 1995-2014 and focuses on main tax categories such as direct taxes, indirect taxes and social security contribution and also to more specific tax classes. These fiscal variables are added into an augmented endogenous growth model with physical and human capital approximation together with control variables. We use multiple panel estimation methods to ensure robustness of results such as pooled, weighted, fixed-effects and dynamic panel estimator. Analysis in this paper contributes to relevant empirical literature. Our result shows a persistent negative effect of social security contribution on economic growth in all regressions. There is also a positive tendency of property tax to boost GDP growth.

Keywords: economic growth, OECD, panel estimation, tax classification, taxation.

INTRODUCTION

Developed countries had a sound macroeconomic performance in time before the economic crisis after 2008. This breakpoint across countries caused that the situation has started to worsen. A rise in unemployment was visible in this period. That also induced a pressure on the government budgets. High deficits and severe debt accumulation became reality at that point and are still present nowadays. This put policy makers into an unenviable position. They could use set of tools typical for fiscal policy to deal with deficits and to ensure fiscal stability. However in time of depression any insensitive changes can negatively influence already dropped economic output. Policy makers thus should choose carefully, which tool to use for this situation and through which channel to exert it.

One probable channel is tax collection. Tax revenues represent a dominant source of government income. Changes in taxation can uplift overall earnings from tax collection but it can also cause negative impacts on sensitive components of GDP like private consumption and investment. Duration of these changes can also have an effect on process of fiscal adjustments.

For this very reason careful setting of fiscal policy must be taken under consideration. To stimulate the long-term economic growth a trade-off between growth-enhancing public expenditure and adequate tax structure (distribution of revenue by type of tax) must be found. Different types of taxes and expenditures have various effects on the economic activity of country. Finding an ideal mix of these macroeconomic quantities which would solve fiscal imbalances and wouldn´t damage the economic growth should be the priority for every responsible and forward-looking policy makers.

One must be able to recognize impacts of individual taxes to achieve this mix. Identification of these impacts was the main motivation to conduct this research. The aim of this paper is to examine possible effects of individual tax categories on a real economic growth in 32 OECD Member States. We distinguished main categories of taxes on direct, indirect taxes and social security contribution. We also used OECD tax classification, which is explained in methodology section of this paper.

TAXES AND ECONOMIC GROWTH – LITERATURE REVIEW

The relationship between taxation (or fiscal policy in general) and economic growth is a subject of many theoretical and empirical articles and studies. Studying effects of taxation on the economic growth has two approaches. Exogenous growth model shows that tax policy cannot affect steady-state and therefore the long term growth. It is built on premise that key components of growth, labor or technological progress are determined outside the system and not influence by taxation. Endogenous growth model pioneered by Barro[3], on the other side, shows that change in economic productivity can originated from within the system. Barro[3] distinguished two types of taxes. Distortionary and non-distortionary ones with one important difference, that distortionary taxes can affect investment´s decisions of an economic subject. He also predicted negative or neutral effects of taxation based on type of taxes.

This theoretical classification contributed to better analysis of public finances impact on the economic growth in many empirical works such as Kneller et al.[10] or Bleaney et al.[6]. Distortionary taxes indicated significant adverse effects on economic growth. Decrease of distortionary taxes (drop of one percentage point) should promote GDP growth rate by 0.1-0.2 percentage point based on their estimates. Changes of non-distortionary taxes do not statistically influence economic growth rate in their study.

Another empirical analysis of taxation effects on the growth, can be seen in Fölster and Henrekson [9]. They described a negative correlation between these two variables, which wasn´t robust. More recent studies showed robust and significant results. Bergh and Karlsson [4] estimated effects of total taxation in OECD countries for periods 1970-1995 and also for the extended period of 1970-2005. For former period an increase in total taxation of 1 percentage point (pp) evoked decrease in growth rate by 0.11 percentage point and 0.10 for the latter period.

Afonso and Furceri [1] used a panel regression for both EU and OECD member states. They also studied composition of taxation and its overall effect. In all regressions the effects were robust and negative. Results for both OECD and EU countries were similar. The estimates showed one pp. increase in taxes downturn GDP growth rate by 0.12 pp.

Not all researchers have found negative tendencies of tax increase. Colombier [7] has worked with a new regression estimator and fiscal variables. He has found either insignificant or small but positive effect of taxation on per capita growth rate. His results were subject of some critique. Bergh and Öhrn [5] re-estimated his results with same data but also added different control variables to test robustness. Use of the control variables changed results entirely. New obtained results indicated significant negative correlation between overall tax quota and the economic growth.

All previous studies examined effects of overall taxation. Other researchers focused on effects of individual tax categories such as income tax, value added tax, property taxes and others. Arnold [2] checked effects of individual types of taxes on GDP per capita. He used panel of 21 OECD countries in his analysis and found out that income taxes in general were accompanied with lower economic growth than taxes on property and production taxes. His analysis enabled him to create a ranking of taxes in view of economic growth. Property tax, especially recurrent tax on immovable property, had most growth-friendly effects. Production taxes followed by personal income taxes indicated adverse effects. Corporate taxes had according to Arnold [2] the strongest negative effects on GDP per capita.

In this paper we also examine effects of individual tax categories using following methodology.

METHODOLOGY AND DATA

We follow methodology in Bergh and Öhr [5] and other similar papers. From endogenous model of growth and adding fiscal variables, which approximate tax burden in economy, and control variables used in Berg and Öhr [5], we get a final econometric equation. It´s form of:

$$g_{i,t} = \alpha_i \sum_{i=1}^{k} \beta_i Y_{i,t} + \gamma_j X_{j,t} + u_{i,t}, \quad (1)$$

where $g_{i,t}$ represents annual GDP growth, $Y_{i,t}$ are non-fiscal control variables and $X_{j,t}$ is approximation of tax burden. β_i and γ_j are respected coefficients of variables.

Annual data from period 1995-2014 are used for our analysis. We examined 32 OECD member states.[1] Our dataset consists of fiscal variables, control variables and approximation of human and physical capital. Definition of each variable is visible in Table 1. Fiscal variables are total government expenditures. Revenue side is distinguished on individual tax categories based on OECD.[2]

We use these categories in first set of regression and you can see results in Table 2. For next set of regressions we aggregated tax categories into three brackets - direct, indirect taxes and social security contribution (SSC). SSC corresponds with 2000 category, direct taxes are 1000+3000+4000 and finally indirect taxes are product taxes only. All data originate from OECD statistics except of human capital index, which originate from PENN World Table 8.1 [8].[3] Dependent variable is annual real GDP growth rate. All fiscal variables are also lagged by one period (year). Reason for this is delay in fiscal policy implementation and effectiveness.

We use four different estimators in our research to ensure robust result. Namely they are pooled ordinary least square (OLS), weighted least square (WLS), fixed effects estimator (FE) and Arellano-Bond dynamic estimator, which originate from generalized method of moments (GMM). Every estimator has different assumptions. FE estimator counts with heterogeneity among individuals, which we can safely recognize, when

[1] From all 34 OECD members only Chile and Mexico are omitted due to data unavailability.

[2] Available [online] http://www.oecd.org/tax/tax-policy/revenue-statistics-methodology-guide-and-classification-system.htm

[3] http://www.rug.nl/research/ggdc/data/pwt/pwt-8.1

individuals are different nations. Arellano-Bond estimator uses lagged dependent and independent variables as instruments. That is reason why only GMM has lagged GDP growth rate as independent variable.

Before we could conduct our estimation, we had to check for data stationarity. We used ADF test to reject hypothesis of unit-root presence. Only variables, in which we could not reject a null hypothesis, were all fiscal variables and approximations of human and physical capital HumCap and GFCap respectively. We transformed these variables into their first differences. Additional testing confirmed that this procedure dealt with non-stationarity issues.[4]

Table 1 – Variables description

Variable:	**Description:**
GFCap	Gross fixed capital formation growth rate in %
HumCap	Index of human capital
Unemployment	Annual unemployment rate in %
CPI	Consumer prices all items (change against previous year) in %
Popgrowth	Annual growth rate of population in %
GovExp	Total government expenditure in relation to a nominal GDP in %
1000	Income and profit taxes in relation to a nominal GDP in %
2000	Social security contribution in relation to a nominal GDP in %
3000	Payroll and workforce taxes in relation to a nominal GDP in %
4000	Property taxes in relation to a nominal GDP in %
5000	Product taxes (VAT included) in relation to a nominal GDP in %

Source: Author

EMPIRICAL RESULTS

In Table 2 you can see our estimation results for individual tax categories. From macroeconomic theory we presumed positive effects of physical and human capital on economic growth rate. In our result both approximation have positive and significant coefficients. Also control variables have assumed effects - negative for unemployment and positive for population growth, which was expected while using overall real GDP growth rate as a dependent variable.

We primary focus on fiscal variables especially individual tax categories in our research. In Table 2 we can see that increase in SSC and payroll and workforce taxes has delayed adverse effect on real GDP growth rate. Property tax indicates a significant positive effect on economic growth but only in GMM estimator.

Table 2 – Impacts of individual tax categories[5]

[4] Transformed variables have „d_" marking before them. You can see it in Tables 2 and 3.

[5] In parenthesis are listed appropriate t-statistics to each variable. Number of stars next to coefficient represents significance level. For (*) it´s significance level 10%, for (**) it is 5% and for (***) it´s 1%. For GMM there is not

Estimator	OLS	WLS	FE	GMM
Const	1.67***	1.57***	3.19***	-0.16***
	(4.17)	(7.01)	(6.52)	(-3.50)
GDP growth (-1)				-0.02
				(-0.28)
d_GF Capital	1.10***	1.22***	1.01***	0.94***
	(5.33)	(15.87)	(4.69)	(7.31)
d_Human Cap	15.04*	17.72***	30.14***	-19.90
	(1.72)	(2.94)	(3.40)	(-0.53)
d_Expenditures (-1)	0.03	-0.01	0.05	0.12***
	(0.71)	(-0.31)	(1.31)	(5.32)
Unemployment	-0.03	-0.04**	-0.15***	-0.20**
	(-0.55)	(-1.98)	(-2.87)	(-2.40)
CPI	0.23***	0.21***	0.07	-0.04
	(3.74)	(4.84)	(1.30)	(-0.71)
Pop growth	0.51**	0.45***	-0.13	0.23
	(2.31)	(3.30)	(-0.47)	(0.26)
d_1000 (-1)	-0.12	-0.15	-0.02	-0.15
	(-0.90)	(-1.41)	(-0.13)	(-1.11)
d_2000 (SSC) (-1)	-0.58**	-0.41*	-0.74***	-0.62**
	(-2.18)	(-1.68)	(-3.07)	(-2.02)
d_3000 (-1)	-1.07**	-0.96	-0.95***	-3.53**
	(-2.15)	(-1.40)	(-2.70)	(-2.18)
d_4000 (-1)	0.60	0.84	1.31	4.48**
	(0.61)	(1.48)	(1.44)	(2.18)
d_5000 (-1)	-0.26	-0.17	-0.01	0.10
	(-0.76)	(-0.86)	(-0.04)	(0.46)
R^2	0.34	0.45	0.49	23.34
F-statistic	25.77	40.66	11.37	-
Number of obs.	541	541	541	509
D-W	1.49	1.49	1.84	-

Source: Author´s calculation

We can also comment on robustness of these results. From overall statistics you can see that most efficient estimators are FE and GMM. Both OLS and WLS have lower coefficient of determination and also value of Durbin-Watson statistic is relatively low, which could mean possible autocorrelation. Value of R^2 in GMM is actually J-statistics, which show that used instruments are valid.

We also distinguished impacts of more aggregate tax categories as mentioned in methodology chapter. Results of these estimates are in Table 3. Control variables and physical and human capital approximation have similar coefficients as in Table 2. There is also evidence from GMM that increase in total government expenditures could positively stimulate economic growth. In other estimators no such relationship was found.

Table 3 – Impacts of aggregate tax categories

Estimator	OLS	WLS	FE	GMM

available coefficient of determination but rather J-statistics. This applies also for data in Table 3.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

Const	1.64***	1.55***	3.17***	-0.16***
	(4.12)	(6,93)	(6.38)	(-3.73)
GDP growth (-1)				-0.11
				(-1.42)
d_GF Capital	1.11***	1.25***	1.03***	1.12***
	(5.42)	(16.61)	(4.81)	(9.86)
d_Human Cap	15.13*	17.99***	30.15***	-67.03*
	(1.73)	(2.98)	(3.41)	(-1.70)
d_Expenditures (-1)	0.02	-0.01	0.04	0.09***
	(0.57)	(-0.29)	(1.10)	(4.31)
Unemployment	-0.03	-0.04*	-0.15***	-0.14**
	(-0.52)	(-1.89)	(-2.77)	(-2.33)
CPI	0.23 ***	0.22***	0.08	0.07
	(3.75)	(5.02)	(1.37)	(1.37)
Pop growth	0.52**	0.45***	-0.12	0.60
	(2.33)	(3.31)	(-0.44)	(0.79)
d_Direct (-1)	-0.11	-0.12	0.03	0.01
	(-0.84)	(-1.14)	(0.21)	(0.06)
d_Indirect (-1)	-0.24	-0.10	0.02	0.04
	(-0.70)	(-0.52)	(0.07)	(0.19)
d_SSC (-1)	-0.48*	-0.31	-0.64**	-0.49*
	(-1.83)	(-1.31)	(-2.53)	(-1.86)
R^2	0.33	0.44	0.48	24.76
F-statistic	31.17	49.07	11.70	-
Number of obs.	541	541	541	509
D-W	1.48	1.48	1.82	-

Source: Author´s calculation

Use of aggregate fiscal data and division on direct/indirect taxes and SSC did not provide better results. In Table 3 you can see that all coefficients for direct and indirect taxes are statistically insignificant. Only statistically significant results are obtained for SSC. If we consider results in both Tables 2 and 3 we can state that we found significant negative correlation between annual economic growth and rise in SSC revenue. Coefficients show that increase in SSC by 1 pp. induces drop in economic growth rate between 0.49-0.74 pp.

We can also see a strong and negative correlation of payroll and workforce taxes (3000), which is statistically significant in both FE and GMM estimator. Coefficient for this type of taxes is between -0.95 and -3.53.

CONCLUSION

The aim of this paper was to examine possible effects of individual tax categories on a real economic growth in 32 OECD Member States. We used annual data in period 1995-2014 from OECD Statistics and PENN World Table. OECD tax classification was our inspiration for tax categories division. We also checked effects of aggregate tax distribution in form of direct/indirect taxes and social security contribution.

Four different types of estimators were exerted in order to get robust results. In first set of regressions only SSC and payroll and workforce taxes showed significant results. One pp. increase in SSC induce a decline in economic activity by 0.49-0.74 pp. Same increase in payroll and workforce taxes had even stronger negative effects up to 3.53 pp.

This could provide some information for policy-makers. Further increase in these types of taxation can negatively reflect on real GDP growth rate in developed economies.

There was also visible a positive effect of property tax in a regression using GMM estimator. When we tried aggregate division only SSC had significant results, while direct and indirect taxes did not show any significant effects. This issue will be addressed in a future research.

ACKNOWLEDGEMENTS

This work was supported by funding of specific research at Faculty of Economics and Administration - project MUNI/A/1055/2015. This support is gratefully acknowledged.

REFERENCES

[1] Afonso, A., Furceri, D.Government Size, Composition, Volatility and Economic Growth [Working paper No. 849]. ECB, 2008.

[2] Arnold, J. Do Tax Structures Affect Aggregate Economic Growth?: Empirical Evidencefrom a Panel of OECD Countries, OECD Economics Department WorkingPapers, No. 643, OECD Publishing.

[3] Barro, R. Government Spending in a Simple Model of Endogenous Growth. Journal of Political Economy, vol. 98, (1990), pp 103–125.

[4] Bergh, A., Karlsson, M. Government Size and Growth: Accounting for Economic Freedom and Globalization. Public Choice, vol. 142, (2010), pp 195-213.

[5] Bergh, A., Öhrn, N. Growth Effects of Fiscal Policies: A critical Appraisal of Colombier´s (2009) Study. IFN Working Paper No. 865 (2011).

[6] Bleaney, M., Gemell, N., and Kneller, R. Testing the Endogenous Growth Model: Public Expenditure, Taxation, and Growth over the Long Run. The Canadian Journey of Economics, vol. 34, (2001), pp 36-57.

[7] Colombier, C. Growth Effects of Fiscal Policies: An Application of Robust Modified M-Estimator. Applied Economics, vol. 41, (2009), pp 899-912.

[8] Feenstra, Robert C., Inklaar R. and Timmer M. P. The Next Generation of the Penn World Table. American Economic Review, vol. 105, pp 3150-3182.

[9] Fölster, S., Henrekson, M. Growth effects of government expenditure and taxation in rich countries. European Economic Review, vol. 45, (2001), pp 1501–1520.

[10] Kneller, R., Bleaney, M., and Gemell, N. Fiscal Policy and growth: evidence from OECD countries. Journal of Public Economics, vol. 74, (1999), pp 171-190.

SCIENTIFIC CONFERENCE INTERNATIONAL MULTIDISCIPLINARY

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE (IN)EFFICIENCY OF QUANTITATIVE EASING POLICIES TO STIMULATE THE AGGREGATE DEMAND

PhD Candidate Vlad Nerau,
PhD Candidate Ioan – Lucian Alexa,

Bucharest University of Economic Studies**, Romania**

ABSTRACT

The Neo-Keynesian solution to reignite the economic engines is the stimulation of the aggregated demand. This was the general solution adopted after the economic crisis from 2007 both in the USA by the Federal Reserve as well as in the Euro Area by the European Central Bank through quantitative easing. The purpose of this paper is to identify the correlation between the impact of this measures and the degree of income inequality and in a broader sense with social polarization. The main hypothesis from which the research begins is that the persons belonging to the top of social hierarchy have a lower marginal propensity to consume than the persons from the bottom of this hierarchy, bearing on the capacity of monetary policies to stimulate the aggregate demand. Also this paper aims to account for the consequences of austerity measures on the unemployment ratio and income inequalities. We used a moving correlation window between monetary mass (M3) and final consumption expenditure of households for Euro Area and PIIGS countries and observed that adopting austerity measures in the PIIGS countries lead desynchronization between the growth of monetary mass and the growth of consumption.

Keywords: Quantitative Easing, Income Inequality, Aggregate Demand

INTRODUCTION

During the last economic crisis, the level of income and wealth inequality has increased, not only in developing countries, but also for developed countries as well. Our analysis will focus on the European Union, where the top 10% of households are owning over 60% of the wealth and the lower half of the social hierarchy are owning only 5% of that wealth as professor Thomas Piketty argues [1]. We also pay special attention to the bottom 10% of the households which has a negative owning rate (about -5%), meaning that they are in debt. One must also bear in mind that inequalities are measured as a *stock* index (the wealth distribution) and a *flow* index (the income distribution).

From a macroeconomic perspective such wealth and income inequality could matter, because households with different levels of wealth and income will respond differently to the same aggregate demand shock and even more, policies for that shock absorption will have different impact on the households. Microeconomic studies (Kaplan & Violante, 2011 [2] and Carroll, Slacalek, & Tokuoka, 2014 [3]) have found that the impact of a one-time shock on the annual marginal propensity to consume (from

now on, wrote as MPC) is substantially larger on low – income / low – wealth households than for high – income / high – wealth households. In the actual macroeconomic context where high heterogeneity of income/ wealth distribution is observed, computing an aggregate fiscal shock or an aggregate demand shock is not sufficient for understanding the shock effect on spending. The effect will depend on how the shock is distributed across different categories of households with different MPC's.

We considered that the MPC's should be calculated using the heterogeneous – agents model of Krusell and Smith [4]. We chose this type of model because of one of its core hypothesis "*it has a heterogeneous population structure where consumers differ in wealth and face idiosyncratic income shocks against which they cannot fully insure*". By introducing this hypothesis, we get a better correlation between the theoretical framework of representative -agent and the empirical observations, meaning that we have a better representation of how reality works. Because this paper purpose is not to question the methodology used to estimate the MPC's, but to underline the connection between austerity measures, income polarization, consumption contraction and quantitative easing measures, we adopted the coefficients used by the McKinsey Global Institute (2016) [5] for each quintile.

According to McKinsey Global Institute, the first quintile (richest 20%) has a MPC of 13%, the second quintile 21-27%, the middle quintile has a MPC between 38% and 50%, and the bottom 40% of population has a MPC close to 60%.

The main focus of the neo-liberal agenda is the economic growth. However, there are some factors that can seriously affect the growth, one of them being a high public debt to GDP ratio. After the economic crisis, most of the EU countries had high public debt ratios, and ample fiscal consolidation measures (*austerity*) were recommended for most of them, as part of the excessive deficit procedure (EDP), regardless of other country specific macroeconomic context. Empirical evidence shows that austerity measures generates substantial supply side costs for economic growth and further more affect also the aggregated demand, especially through the unemployment channel. This can be observed as drops in the GDP following the fiscal consolidation periods rather than the anticipated expansion. Ball et. al. (2013) [6] found that a consolidation of 1 percent in GDP will result in an increase of 0,6 percentage points of the long term unemployment rate, as well as a cumulated increase of 1,5 points in Gini coefficient over a period of eight years.

PERSPECTIVES ON CONSUMPTION AND AGGREGATE DEMAND

The distributional effects of fiscal consolidation have a high impact on the functioning of the economy as a whole, especially due the fact that policy measures apply the same to all the households, not considering any heterogeneity of the consumers. Thus, in order to analyze the impact of any stimuli on growth through the

aggregated demand must consider the structure and source of consumption growth. As shown by Ball et. al. (2013), the fiscal consolidation leads to an increase in income polarization, thus affecting the later expansionary policies, especially the quantitative easing.

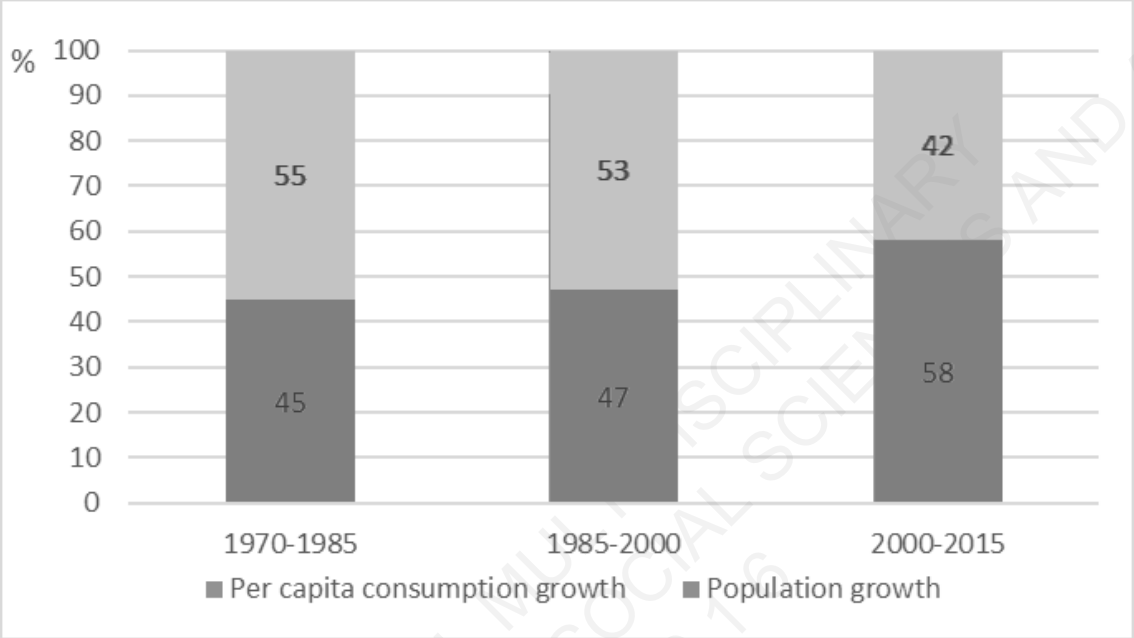


Figure 1. The source of consumption growth

Source: World Bank; McKinsey Global Institute

One can observe from figure 1 that per capita consumption has become the main source of consumption growth thus meaning that consumption increase will depend heavily on each individual spending more. Even though the evolution of prices of consumer goods and services matter, more important is the distribution of income and that is because not all consumers spend the same amount of their income.

One of the main causes of consumption reduction was the growth of unemployment, especially as an effect of the austerity measures. This can be well observed in the countries that need to perform the most intense fiscal consolidation programs, especially PIIGS.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

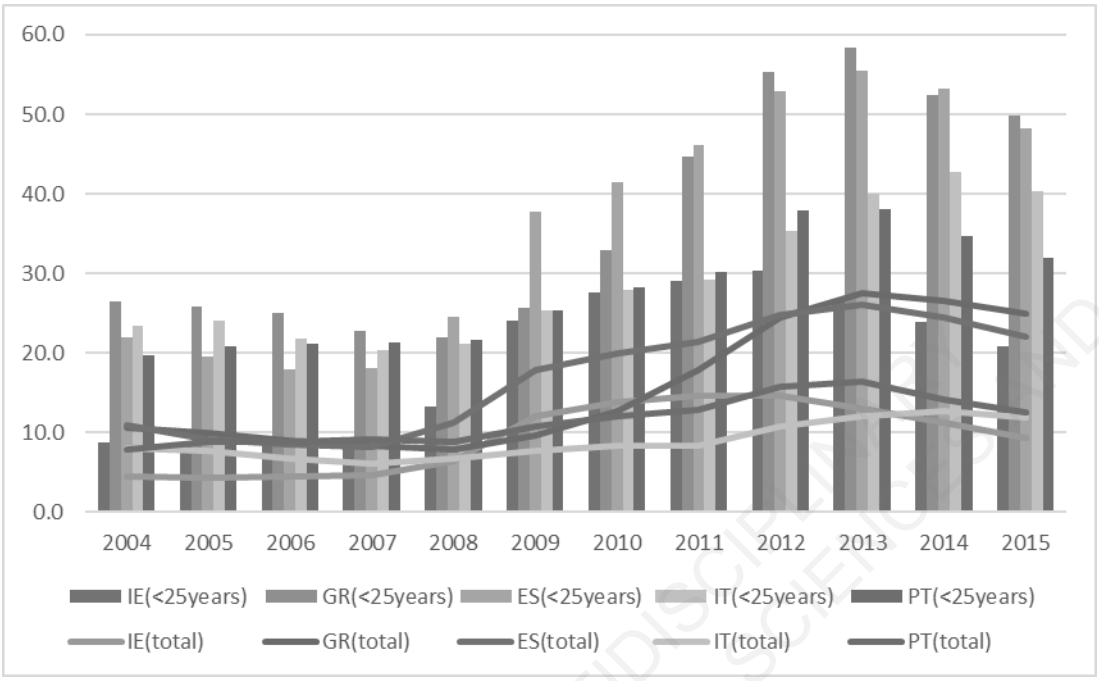


Figure 2: Under 25 (bars) and total (lines) unemployment in PIIGS countries.

Source: Eurostat

The most affected by austerity measures, as it can be observed in figure 2, was the population below 25 years, which, in some countries (Greece and Spain) more than 50% of the active population of the respective age category was unemployed. One fact that can be observed is a sharp increase in unemployment for most of the PIIGS countries starting 2010-2011 as shown in C.-F. Lee et al. (2013) [7]. Another important aspect is that the austerity measures, especially the reduction of public investments, besides a rise in unemployment, also affected the potential growth. This also affected the natural rate of unemployment.

As Keynesian consumption theory and empirical evidences accentuate, higher income/wealth households are inclined to save a higher share of their income (over 80% of their income for the richest quintile), compared with the last two quintiles which are spending almost 60% of their income. Redistribution can play a very important role in boosting the aggregate consumption and aggregate demand by transferring income from high-income to low-income households. However, a generalized rise in inequality within most countries can be observed and austerity measures contributed negatively to the income polarization, as emphasized by Era Dabla-Norris et al (2015) [8]. Even though the income polarization in PIIGS countries was higher before the crisis than the Euro Area average, the fiscal consolidation that followed afterwards led to a further increase in this polarization for most of the countries.

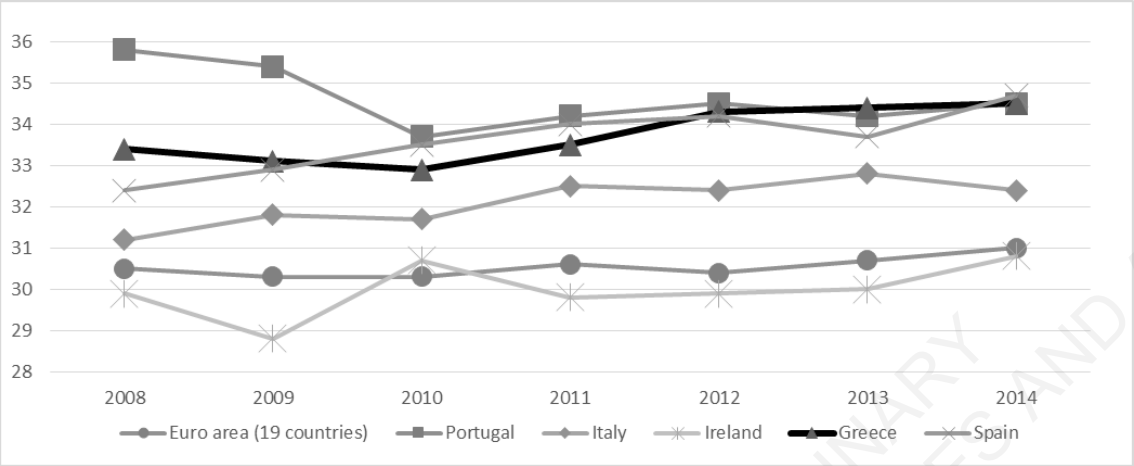


Figure 3. GINI coefficient for Euro Area and PIIGS countries

Source: Eurostat

WHY DOES INCOME POLARIZATION MATTER!

After the economic crisis, countries recovered at different paces, accordingly to their macroeconomic environment, and most of them tried to compensate the fiscal austerity with an expansionary monetary policy. Stated simply, the logic behind quantitative easing is to put more money in the market in order to stimulate consumption and investments. Thus, it should be observed a positive correlation between the expansion of monetary mass and the expansion of final expenditure. Indeed, in the Euro Area after a period of slackness between 2010 and 2014, the final expenditure for consumption resumed its trend following the growth of monetary mass, there is no contradiction between theory and empirical evidences here. On the other hand, for the countries with severe fiscal consolidation, namely PIIGS, as can be observed from figure 4 final consumption expenditure never reached the level before austerity measures. From this countries, Greece was the first to adopt austerity measures, in May 2010, when The Prime Minister sealed a deal with the EU and the IMF. In Spain the austerity began with the RDL (Real Decreto-Ley – Royal Decree-Law) 8/2010, providing for wage cuts in the public sector. Italy imposed the first austerity measures in July 2011, with an increase in healthcare fees, cuts to regional subsidies, family tax benefits and the pension of high earners. Ireland adopted austerity measure in the late 2011 with all public servants' pay cut by at least 5% and social welfare reduced. The situation is similar in Portugal where in May 2011 the government adopted a range of austerity measures, including a 5% pay cut for top earners in the public sector, a VAT rise of 1% and income tax hikes for high-earners.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION "MULTIDISCIPLINARY SCIENCES AND ARTS SGEM 2016"

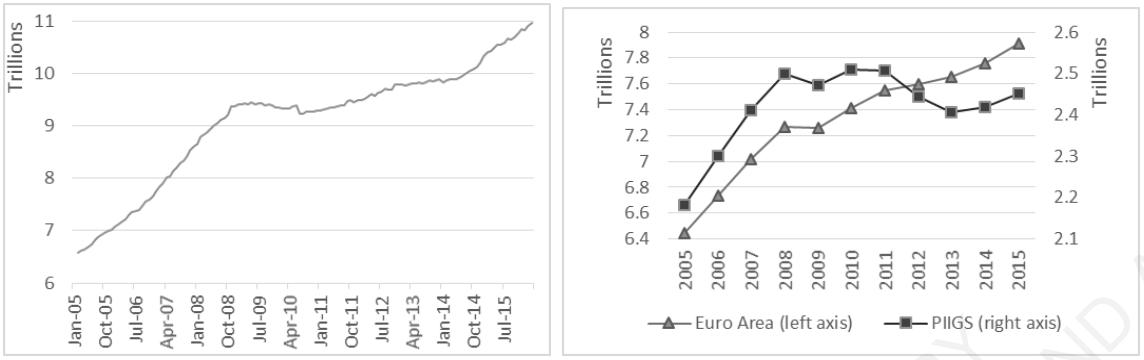


Figure 4. Evolution of monetary mass (M3) and final consumption expenditure in the Euro Area and PIIGS countries.
Source: Eurostat, European Central Bank

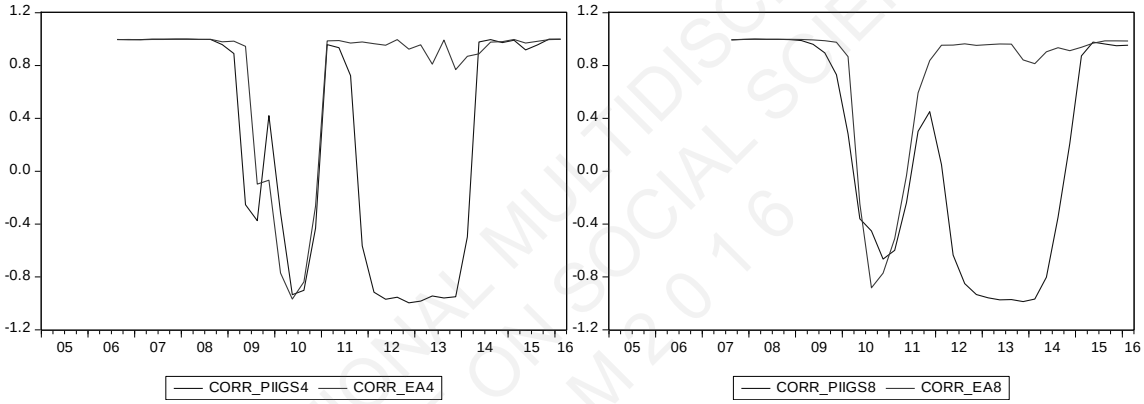


Figure 5. Moving correlation window between monetary mass (M3) and final consumption expenditure of households for Euro Area and PIIGS countries (4 quarters window – left, 8 quarters windows – right)

Source: Own calculation based on Eurostat and European Central Bank data

As one can observe from figure 5, until the beginning of 2011, a strong positive correlation between the growth of monetary mass and the growth of households' consumption exists, meaning that monetary policy instruments were still efficient in stimulating the aggregated demand. Since the adoption of the measures stipulated in the austerity package, the relation for the PIIGS countries has inverted. The quantitative easing effects in boosting the aggregate demand became almost null, and those countries' economies entered a vicious circle. Through the standardized measure imposed to all the PIIGS countries (namely, the fiscal consolidation) the relation between aggregate demand – unemployment ratio – income inequalities became bidirectional, and the situation for all those indexes got worse.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

CONCLUSIONS

As observed from figure 4, quantitative easing had a positive impact on the consumption for the Euro Area in general, even though the monetary mass had increased by approximately 17% from the end of 2010 since until the end of 2015 while the expenditure for final consumption increased by only 6,7% for the same period. The main conclusion of this paper is that countries which endorsed massive fiscal consolidation, especially the PIIGS, haven't benefited from the effects of quantitative easing, rendering monetary policy inefficient for stimulating the aggregated demand. The effects of austerity measures, best observed through hikes of unemployment and hikes of inequalities, especially, income inequalities, are the main causes why consumption for the PIIGS never reached the pre-crisis level.

Asymmetric shocks suffered by the core of Euro Area and the periphery forced the monetary policy to remain pro-cyclical for some of the countries, especially for those with intense fiscal consolidation programs. The only way for the PIIGS to boost their level of competitiveness, in the absence of their independency of monetary policy is through structural reforms. Some of the reforms meant to counterbalance pro-cyclical results lead to an even higher economic contraction, leading to more unemployment and higher income inequalities, thus feeding a vicious circle that can only be overcome with proper redistributive measures that will reduce income asymmetries.

REFERENCES

[1] Piketty T. - Capital in the 21st Century, Publishing house Litera, Romania, 2015

[2] Kaplan G., and Violante G. L. - A Model of the Consumption Response to Fiscal Stimulus Payments, NBER Working Paper Number W17338, 2011

[3] Carroll C., Slacalek S and Tokuoka K. - The distribution of wealth and the marginal propensity to consume, European Central Bank working paper number 1655, March 2014;

[4] Krusell P. and Smith A.A. - Quantitative Macroeconomic Models with Heterogeneous Agents, http://aida.wss.yale.edu/smith/paper15.pdf , 2006

[5] McKinsey Global Institute – Urban World: The Global Consumer to Watch, April 2016

[6] Ball L., Furceri D., Leigh D. and Loungani P. - The Distributional Effects of Fiscal Austerity," UN-DESA Working Paper 129 (New York: United Nations), 2013,

[7] Lee C.F. et al. - Asymmetric behavior of unemployment rates: Evidence from the quantile covariate unit root test - Japan and the World Economy 28,

[8] Dabla-Norris E. et al. - Causes and consequences of income inequality*:* A global perspective, IMF staff discussion note number 15/13, 2015

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE ANALYSIS OF PERCEIVED ENVIRONMENTAL UNCERTAINTY AS A DEPENDANT VARIABLE

Dr. Eva Švandová

Michal Jirásek

Masaryk University, Faculty of Economics and Administration, **The Czech Republic**

ABSTRACT

The business environment is a crucial aspect of managerial decision-making from the viewpoint of most organizational theories (e.g. strategic management, industrial organization, contingency theory). The environment can be perceived as a multidimensional construct composed of several dimensions like uncertainty, dynamics, complexity and heterogeneity. In scientific studies, environmental uncertainty is one of the frequently cited and further analysed dimensions. It not only represents an intervening variable, but also a variable influencing business performance in the form of both primary performance measures, like revenues or profits, and secondary measures, including innovation output. Thus the measurement of environmental uncertainty becomes important not only from a scientific study point of view, but also from the business perspective, because the perceived dynamics of the environment influence managerial decision making. The aim of this study is to verify the factors influencing the level of perceived environmental attributes. With this verification, the predicted influence of these factors on the perception of the environment can be eliminated. Perceived measure, therefore, mirrors reality. The influencing factors involved in the model are the age of the business, the size of the company, competitive pressure, the economic situation of the company, features of the industrial market structure and finally the industry itself. The hypotheses are tested using a sample of 228 multinational subsidiary companies active in the Czech Republic. The results indicate that uncertainty is not influenced by the features of a company such as age and size, but mainly by the economic situation of the company. The market structure influences perceived uncertainty, but the direction of the impact is not definite. Based on these results, we suppose that perceived environmental uncertainty is influenced marginally by market structure and it cannot be considered to be a good estimate of industry uncertainty. A bivariate analysis and regression analysis were used to test the hypotheses.

Keywords: perceived uncertainty, dynamics, measurement, environment, entry barriers

INTRODUCTION

The business environment plays a crucial role in business decision making from the viewpoint of most organizational theories (e.g. strategic management, industrial organization, contingency theory). Environmental aspects are fundamental not only for entrepreneurial orientation and strategic orientation, but also for innovativeness [1]. An uncertain or dynamic environment must be accompanied by the innovative activity of enterprises [2].

Duncan [3] defines environment as a complex of physical and social factors affecting the decision-making of business units, namely inside and outside of the company. For the purposes of this study, environment is understood as anything surrounding the company and influencing its activities. The external environment can be viewed from two basic perspectives - task environment and general environment. Task environment is composed of the groups external to the enterprise and includes customers, competitors, suppliers and technology [3] [4]. Dynamism expresses the extent of change in environmental elements and their unpredictability [3]. Synonyms like turbulence, rate of change and rate of unpredictability are used for dynamics. Munificence is connected to the availability of resources supporting the growth of the company and complexity represents heterogeneity and the range of environmental factors influencing the company. Jaworski and Kohli [4] link these two perspectives together and talks about the dynamics of technology, customers and the intensity of competition.

These dimensions are closely connected to the uncertainty of the environment [3][5]. Environmental uncertainty is characterised by a lack of clarity in information, the lengthy timespan of feedback and the general uncertainty of causal relationships [5]. These attributes have to be measured to demonstrate their relationship with other business matters. Different researchers work with different measures, which can be basically divided into two groups: a) objective measures which are derived independently of the observer and b) subjective measures which are perceived by members of the organization or key informants [6]. Lawrence and Lorsch [5] and Duncan [3] measured environment uncertainty on the basis of perceived measures. To test the validity of their uncertainty constructs, objective measures of the environment were used, especially the volatility of the environment measured by the variance in sales and profits [7][8]. The dynamics of the industry is acquired as an average volatility (standard deviation) weighted by the share of each company on the total revenues or profit. The results of these validity studies are controversial as the correlation between perceived metrics and objective metrics is very low. This is why Milikine [9] states that it is necessary to differentiate perceived attributes of the environment from objective measures. Their substance is different.

Perceived attributes of the environment are supposedly influenced by other variables such as individual characteristics [10]. Perceived environmental uncertainty is influenced by the size of the company, industry and the type of environment [11]. Porter states that "the key aspect of a firm's environment is the industry in which it competes. We would assume that the industry characteristics strongly influence the alignment options available to the firm.

The importance of industry and its structure is closely interconnected with the theory of industrial organization (I-O), which is a component of microeconomics theory. The environment is described by the objective parameters of market (industry) structure. I-O theory and the measurement of the market power of companies is the basis for many methods of a firm’s dominant position appraisal and structure-conduct-performance approach. The fundamental parameters provided are market power, entry barriers (differentiation included) and vertical integration. An indicator of market concentration is calculated to stipulate the company’s market power. The Herfindahl-Hirschman index (HHI) is a commonly accepted measure of market concentration. The HHI is calculated from the market share of each firm competing in the market. It is influenced by the revenues and the number of enterprises in the market. Factors which act as industry

entry barriers can be derived from the index of entry barriers [12]. Entry barriers are influenced by the difference in observed profit and profit predicted for the industry. The index is affected by the level of capital needed to enter the market (creating a distribution network, the network of customers, building a warehouse, acquiring licences etc.), the number of the companies entering the market over a particular period and the diversity of the product sold. Environmental competitiveness refers to the degree of competition reflected in the number of competitors [13]. To conclude, the market structure is influenced by the number of enterprises entering into the market and remaining in the market, and the change to the revenues and profits of each industry.

PROBLEM STATEMENT

The enterprises show different innovation performance with regard to the industry in which they are active. The industry itself characterises the external environment of the individual company and signifies the differences in the innovation performance of an individual company. The differences in innovation performance are given by three basic circumstances – demand, technological opportunity and appropriability conditions [14]. These circumstances are represented especially by the objective conditions connected to the specific market structure. The market structure is determined by the number of enterprises working in the industry, which is followed by entry barriers and the attractiveness of the industry generated by the profitability of the industry. On the other hand, performance is not only connected with market structure but also strategic behaviour, as has been confirmed by many researchers. Strategic behaviour is closely associated with the decision making of managers. We suppose that market structure influences perception of the managers and their decisions. The purpose of this study is to identify the factors influencing the level of perceived environmental attributes. The influencing factors involved in the analysis are the features of the industrial market structure and the industry itself, competitive pressure, the economic situation of the company, and finally the age of the business and the size of the company. To meet the study's objective, eight hypotheses are defined and tested.

H1: Lower industry entry barriers influences perceived environmental uncertainty and dynamics by enterprises.

H2: Higher market concentration within the industry is represented by the lower perceived environmental uncertainty and dynamics by the enterprises. (H2)

H3: The higher the intensity of competition in the industry, the higher the uncertainty of the company.

H4: Higher industry profitability attracts other companies to enter the market and so supports the growth of the uncertainty and dynamics

H5: The level of perceived environmental uncertainty and dynamics is influenced by the industry.

H6: Enterprises with a strong economic position are less predisposed to perceiving environmental uncertainty or dynamics as high.

H7: Older and larger companies are more experienced with slack resources at their disposal and so do not perceive environmental uncertainty.

SCIENTIFIC CONFERENCE OF INTERDISCIPLINARY INNOVATIVE TRENDS IN SOCIAL SCIENCES AND ARTS

H8: Volatility of the revenues (objective measure) positively correlates to the perceived dynamics of the environment.

METHODS AND PROCEDURE

Data for testing the hypotheses was obtained from a survey of supranational companies in the Czech Republic carried out by the Centre of Research into the Competitiveness of the Czech Economy at the Faculty of Economics and Administration in 2010 and 2011. Data was gathered using a questionnaire for 335 companies from 24 industries in 2011. To test the hypotheses, the sample of 228 companies was used from 19 industries so that at least 2 respondents represent the industry. The surveyed companies were foreign companies active in the Czech Republic employing more than 50 employees. The responses were given by company managers who were aware of the complex functioning of the enterprises.

In this study perceived environmental uncertainty is represented by three dimensions – competition, customers and suppliers (x62a, x62b, x62c) and was measured on a 10-grade scale (value 1 denotes low uncertainty, value 10 denotes high uncertainty). In addition to perceived environmental uncertainty, perceived environmental dynamics was also surveyed. The dimensions and scale are the same as in the case of uncertainty (x63a, x63b, x63c). A strong correlation between perceived uncertainty and dynamics was confirmed.

Figure 1: Relationship between perceived dynamics and uncertainty

		x6.3a	x6.3b	x6.3c
x6.2a	Correlation Coefficient	**0.55**	**0.36**	**0.23**
	Sig. (2-tailed)	0.00	0.00	0.00
	N	223.00	223.00	223.00
x6.2b	Correlation Coefficient	**0.30**	**0.50**	**0.33**
	Sig. (2-tailed)	0.00	0.00	0.00
	N	222.00	223.00	223.00
x6.2c	Correlation Coefficient	**0.23**	**0.23**	**0.35**
	Sig. (2-tailed)	0.00	0.00	0.00
	N	221.00	222.00	223.00

Two artificial variables – uncertainty (x1) and dynamics (x2)- were created utilizing a principal component analysis (the suitability of the analysis was tested using Bartlett's test significance and value of KMO). The dynamics of the company was measured by the index of revenues and profit volatility during 2009 and 2011. Volatility measures are represented by the coefficient of variation of sales over some years and the coefficient of variation of earnings before interest and taxes over the past years. The results for each firm are weighted by corporate sales, and the mean of the coefficient values is then calculated for the whole industry [8]

The variables of market structure reach a maximum of 18 values respectively to the industry they belong to (the sample consists of the enterprises from 18 industries). Entry barriers and the risk of new competitors are expressed *by the percentage change in newly entering companies between 2009 and 2011 (i1)* (recoded into three categories, industry with 1 - decreasing number, 2 stable number and 3- increasing number of

newly entering companies) Further entry barriers and the risk of new competitors is expressed by the *profit (EBIT) (i2*) and *total revenues per company in 2010 (i3) and how they changed in 2009 and 2011(i2_change, i3_change)* (change calculated as *Revenues2011/Revenues2012-1* or revenues replaced by EBIT*)*

Market concentration is operationalized as the difference *between change in revenues and change in number of enterprises in the industry in 2009 and 2011 (i4)* (recoded into two categories, industry with 1 = decrease in market concentration and 2= industries with increase in market concentration).The logic of this indicator is as follows - if the change in revenue is higher than the change in the number of the enterprises, then the revenues are divided into a smaller number of companies and the market concentration increases. The intensity of competition is expressed by the number of companies in the market (i5) and the percentage share of newly entering companies on the total number of enterprises (i6). Industrial factors are also represented by industry itself (i7).

The economic situation of the company is shown by several measures. The first group of measures is connected to the financial situation of the company measured traditionally by the return on assets and return on sales in 2010 (ROS, ROA). The second group contained measures of the economic power of the company expressed by the percentage of total revenues and total assets of the company on the revenues and assets of the whole industry (epower_assets_2010, epower_revenus_2010). The third group is composed of the measures expressing the growth of the company during 2009 and 2010) (growth in revenues, EBIT and total assets) and the growth of the company in comparison with the competitors. The success of the company is relative. This is why the company growth rate is compared to the industry growth rate and the difference between company growth rate and industry growth rate of the industry is calculated. The age of the company is calculated from the year of the company's establishment. The size of the company is expressed by the number of employees and the amount of total assets in 2010.

The basic methods used for testing the hypotheses were the ANOVA procedure for testing the relationship between market characteristics and perceived environmental attributes, and the Pearson correlation coefficient for testing the relationship between the characteristics of the company and perceived environmental attributes. The results which meet the required significance level up to 0.1 are displayed.

RESULTS

The analysis of the relationship between market structure and perceived environment attributes provided the following results. Industries with a decreasing number of newly entering companies perceive the dynamics of the customer environment as lower. We used the ANOVA procedure to test the statistical significance of the difference in the variance of the answers (Sig=0.014).

Figure 2: Difference in perceived dynamic based on newly entering enterprises

i1_change in newly entering enterprises	X6.2b_Perceived dynamics customers		
	Mean	N	Std. Deviation
decreasing number	4.77	53	1.997
stable	5.13	15	1.807
increasing number	5.68	153	1.962

The value of the revenues (i2) or the profit (i3) of the industry in 2010 and how they changed in 2009 and 2011 influenced perceived environmental uncertainty (confirmed by the ANOVA procedure with a statistical significance of 0.012). The relationship is not linear as was confirmed by the Bonferroni ad hoc test. The change in revenues and profit was recoded into two categories – growing and decreasing industries. The difference in the means of these two groups was tested by a t-test. The result is that the growth in industry profit contributes to a positive growth in perceived environmental dynamics (statistical sig. of t-test=0.075). If the industrial financial indicators decrease, the dynamics is perceived as lower. Hypotheses H1 and H4 are validated with limitations, especially concerning uncertainty.

Concentration measured by the ratio of revenue growth to number of enterprises growth does not influence environmentally perceived environmental uncertainty. Perceived dynamics decreases if the growth of revenues is lower than the number of companies, meaning the market concentration decreases. Hypothesis H2 is valid in connection with the dynamics of the environment in all the dimensions of the environment.

Figure 3: Relation between dynamics and market concentration

	Mean – perceived environmental dynamics		
T-test	Competit(Sig=0.089)	Customers(Sig=0.075)	Suppliers(Sig=0.054)
market conc. decrease	5.11	5.23	4.72
market conc.growth	5.59	5.70	5.16

The analysis of competition intensity produces results which support Hypothesis H3. Perceived environmental uncertainty is influenced by the competition pressure measured by the ratio of newly entering to total number of enterprises in each industry. The relationship was verified by a t-test procedure and the variable was recoded into two groups for this purpose – industries with a lower than 5% share of newly entering companies, and industries with a higher share of newly entering enterprises at more than 5%. The number of enterprises reflects uncertainty in customer environment, the direction of the effect is disputable. (The statistical significance of the ANOVA procedure equals 0.018).

Figure 4: New companies per company in the industry related to uncertainty

T-test, sig=0.009		industries with lower than 5% share of newly entering	industries with higher than 5% share of newly entering
x63b_uncertaint y_customers	Mean	5.41	6.22
	N	160	64

The economic situation of the company represented by the return on assets and return on sales corresponds with perceived uncertainty especially in the customer environment. The increase of return on sales (Pears. Cor.= -0.119, Sig=0.09, N=206) or return on assets (ROA Pears. Cor=-0.134, Sig.=0.054, N=206) leads to lower uncertainty in demand. The higher the share of the company on the total revenues produced by the whole industry, the lower the perceived uncertainty in competition dimension (Pears.cor.=-0.135, Sig=0.049, N=213). If the absolute indicator (EBIT) grows, the perceived uncertainty grows too (Pears. Cor. = 0.121, Sig=0.095, N=191). The level in the gap of revenues and profit between industry and company does not influence the perceived attributes of the environment. Hypothesis H6 is not supported, because the

relationship between the absolute indicators of the economic situation and perceived uncertainty is the inverse of that which was supposed. The market power of a company correlates to uncertainty as was predicted.

The age of the company and the number of employees are not significant for the perception of uncertainty or dynamics. Surprisingly, the size of the company, measured by the total assets, correlates positively with the dynamics of the environment (Pears. Cor.= 0.129, Sig=0.06, N=218). Hypothesis H7 is not supported.

The relationship between dynamics, measured by the volatility of financial metrics, and perceived dynamics is negative. The relationship between company revenue dynamics and perceived environmental dynamics was supported, but the direction of the impact was reversed. The results were the same for the competitor environmental dimension (Pears-= -0.205, Sig.=0.002, N=2016), and for the competitors environmental (Pears-=-0.146, Sig=0.032, N=216). The growth of revenue dynamics (volatility of the revenues) negatively correlates with the perceived dynamics of the environment as well as with perceived uncertainty (Pears.=-0.183, Sig.=0.043, N=214). Hypothesis H8 is not supported. Validity of perceived dynamics concept should be tested in future.

CONCLUSION

Perceived environmental uncertainty is influenced in particular by the economic situation of the company and the intensity of competition, as was predicted in the proposed hypotheses. Enterprises and their perceptions are greatly influenced by the development of revenues and profits. The market structure influences in particular the perceived dynamics of the environment.

The intensity of the competition is the only indicator of the market structure with a significant influence over the perceived environment. This indicator should be monitored by managers. The market structure is described by the competition intensity [15].

The perceived attributes of the environment are strongly influenced by the economic situation of the company in comparison with the competitors (revenues, profit, ROS, ROA). Interpreting this fact can be complicated because of the problem of causality. The question is, if profit, the level of revenues, ROA and ROS are not influenced by the attributes of the environment themselves. The higher the economic power of the company, the less the environment is perceived as uncertain. The age of the company and the size of the company are not factors which influence the perceived environmental attributes. Surprisingly, the size of the company expressed by the level of total assets correlates positively with uncertainty. This is opposite to the direction of the effect which had been predicted.

ACKNOWLEDGEMENTS

The paper was supported by the Masaryk University research project: Innovation capability as the basis for measurement of organizational innovation performance.

REFERENCES

[1] Aldrich, H. E. Organizations and environments. New Jersey : Prentice-Hall, 1979;

[2] Freel, M. S. Perceived Environmental Uncertainty and Innovation in Small Firms. Small Bus. Econ. 25, 49–64, 2005;

[3] Duncan, R. B. Characteristics of Organizational Environments and Perceived Environmental Uncertainty. Adm. Sci. Q. 17, pp 313–327, 1972;

[4] Jaworski, B. J. & Kohli, A. K. Market Orientation: Antecedents and Consequences. Journal of Marketing 53, 1993;

[5] Lawrence, P., Lorsch, J. Organization and Environment, Homewood, Ill.: Irwin, 1967;

[6] Dess, G. G. & Origer, N. K. Environment, Structure, and Consensus in Strategy Formulation: A Conceptual Integration. Acad. Manage. Rev. 12, pp 313–330, 1987;

[7] Downey, H. K. & Slocum, J. W. Uncertainty: Measures, Research, and Sources of Variation. The Academy of Management Journal 562, 1975;

[8] Tosi, H., Aldag, R. & Storey, R. On the Measurement of the Environment: An Assessment of the Lawrence and Lorsch Environmental Uncertainty Subscale. Adm. Sci. Q. 18, pp 27–36, 1973;

[9] Milliken, F. J. Three Types of Perceived Uncertainty About the Environment: State, Effect, and Response Uncertainty. Acad. Manage. Rev. 12, pp 133–143, 1987;

[10] Hall, D. T. & Mansfield, R. Organizational and Individual Response to External Stress. Adm. Sci. Q. 16, pp 533–547, 1971;

[11] Kourteli, L. Scanning the business external environment for information: Evidence from Greece. Inf. Res. 11, 17p., 2005;

[12] Orr, D. An Index of Entry Barriers and Its Application to the Market Structure Performance Relationship. J. Ind. Econ. 23, 39, 1974;

[13] Miller, D. The Structural and Environmental Correlates of Business Strategy. Strateg. Manag. J. 8, pp 55–76, 1987;

[14] Cohen, W. m. (1) & Levin, R. c. (2). Chapter 18 Empirical studies of innovation and market structure. 2, 1989;

[15] Urban, J. Teorie národního hospodářství. 3. vyd. Praha : Wolters Kluwer ČR, a. s., 2011, pp 530.

SCIENTIFIC CONFERENCE SGEM 2016 INTERNATIONAL MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS

THE ANALYSIS OF THE EFFECTIVENESS OF METHODS OF EVALUATING PERFORMANCE OF EMPLOYEES ACCENTING STREAMLINING OVERALL PERFORMANCE MANAGEMENT PROCESS

Mgr. Nella Svetozarovova, PhD.

University of Prešov in Prešov, Faculty of management, Department of management, **Slovakia**

ABSTRACT

Employee performance evaluation belongs to one of the most important evaluation tools in the context of human resource management practices. Performance evaluation requires a systematic approach, and the choice of optimal method tailored to business needs is often a very complex task, as there are many available options, which are repeating to a greater extent. Each method has its advantages and disadvantages, so the management should carefully evaluate which appraisal method they choose in order to achieve the objectives set by the business. In business practice it is a common phenomenon to combine different methods of performance appraisal. The present paper defines issues of performance evaluation, points to the established methods of performance evaluation, parallel to the requirements and criteria imposed on a successful system of performance evaluation. The paper presents findings and results of the analysis of the effectiveness of methods of evaluating performance of employees accenting streamlining overall performance management process, as well as increase in business competitiveness on the market. According the above mentioned main aim is to analyze the methods of performance evaluation from the viewpoint of a degree of importance of requirements/criteria put on these methods.

Keywords: performance, evaluation methods, performance evaluation, requirements

INTRODUCTION

Performance evaluation is a key component of human resource management. It can be also identified as an essential part of performance monitoring, particularly in terms of the efficient use of labour and well-being of a business entity across the vertical management of the given entity. Businesses gradually focus their attention on the development of their employees and their potential. Performance evaluation is linked with the remuneration of employees and their education and professional development. Employee performance can be measured by various indicators, either simpler or more complex ones, both representing different types of evaluation methods. Based on these methods we can point to the effectiveness of the performance of each employee and thus his/ her contribution to the business entity. Papers will be reproduced exactly as submitted and will not be edited in any way. Abbreviations should be kept to a minimum. Use of standard abbreviations is acceptable. Place special or unusual abbreviations in parentheses after the full term for the first time it appears. Linguistic accuracy is the responsibility of the authors. New modern concepts of performance appraisal in organizations have, paradoxically, their origins in the traditional system. However, the new concepts are based on the assumption that a company is efficient when it can achieve pre-defined strategic objectives [1]. Choosing appraisal methods

means to determine the procedures for working with the criteria as well as the conditions under which they are to be used. The literature states and describes a variety of appraisal methods, some of which are still divided into different variants [2]. In other words, an attempt to find an optimal appraisal concept has led to the development of a plethora of different methods that can be used to appraise the performance of an employee, which classification presents the paper.

1 Current state of knowledge of the analysed issue

Various authors agree that each method requires different evaluators since each type of evaluator has its own character traits and predispositions [3], [4], [5]. Therefore it is only appropriate to use multi-source performance evaluation methods. The authors further agree that the scale for performance evaluation is broad, and can be basically divided into objective and subjective evaluation. Objective performance evaluation may feature an indicator depended on conditions that are not the same for each employee (one employee may have more favourable conditions that the other) [6].

After determining the key performance evaluation indicators matrix evaluators should determine monitoring, recording and evaluation procedures (conditions for their application and use). For these purposes evaluators need appropriate performance evaluation methods in order to improve performance of individuals as well as the business entity itself. However, no method is perfect, each of them has certain advantages and disadvantages, states [7].

Performance evaluation methods often use a classification based on criteria of varied nature. From the point of view of a temporal nature the evaluation should mainly focus on three periods - the past (past performances evaluation), present (present performance evaluation) and future (aimed at achieving future performance) [3]. The main focus should, however, remain the future as it is the most important. Performance evaluation methods focused on the past and future were for the first time described by Werther and Davis [7]. Further we classify the methods according to their timing and distinguishes between methods focusing on the work already done (past performance) and methods focusing on the future while identifying development opportunities for employees [8].

Author Duda analyses advantages and disadvantages of performance evaluation methods. He states that the advantage of methods focusing on the past lies in the fact that they deal with work already carried out and are therefore relatively measurable. However, the disadvantage of this method is the impossibility of influencing the outcome of the evaluation. Methods focusing on the future allow employees to influence their performance in real time [9].

Based on thorough analysis Venclová et al. proposed four categories of performance appraisal methods: [10]

- traditional and modern methods,
- target-oriented methods or performance-oriented methods and opinion methods,
- scaling and descriptive methods,
- comparative, evaluation, descriptive and behavioural methods.

The relevant literature provides two most common and popular groups according to the complexity of the evaluation criteria: [11]

- absolute standard methods;
- relative standard methods;

The relative standard method focuses on the nature of the appraisal: [12]

- comparative methods;
- behavioural methods
- observational/ assessment methods;

Various authors provide classification of methods according to the three parameters, namely (1) Measurement of the properties - input (2) Measurement of behavior - the process, (3) Measurement of results – output. Furthermore, she classifies methods in terms of the time factor [13], [14].

Werther and Davis also classifies methods using the time factor - whether a method focuses on past or future performances / focus on work already carried out or work that is planned to be carried out [7].

Although there are several studies that used the aforementioned type of categorization (Roche et al, 2007; Goffin et al, 1996; Jelley & Goffin, 2001; Nathan & Alexander, 1988; Wagner & Goffin, 1997; Heneman, 1986) overall performance appraisal cannot fit only to one of the categories because the methods in one category may have different characteristics in terms of errors that are associated with the performance appraisal criteria [11].

2 Objectives and methods

Following the formulation of the research project aimed at analysing performance evaluation methods taking into account statistically significant differences in performance evaluation methods in relation to the identified set of selected criteria. The research sample consisted of a set of small, medium and large businesses operating in the Slovak Republic. The selection criteria were as follows: number of employees or size of a business entity and the type of their equity, i.e. whether a business is a multinational group or a business acting locally. The research sample consisted of 203 businesses. The research made use of basic descriptive statistics. In order to test the relationship between the methods and criteria laid down therein it is necessary to determine the strength of association of row and column variables in the pivot table using contingency factors. Pivot table is an interactive table that is used to quickly summarize large amounts of data. By rearranging rows and columns we can view different summaries of the source data, filter data by displaying different pages or view details of the areas that interest us. For our testing purposes we used Cramer's contingency coefficient V (1946), which is the most appropriate measure of association between two nominal variables. It takes values from 0 (no correlation) to 1 (perfect relationship). When interpreting contingent coefficient in psychological research we can use Cohen's (1988) scale. Correlation lower than 0.1 is trivial, correlation ranging between 0.1 and 0.3 is considered to be small, 0.3 and 0.5 is medium and correlation greater than 0.5 is considered to be large.

3 Sample description and the basic evaluation of primary data

In order to carry out a comparative analysis of the effectiveness of performance evaluation methods in relation to increasing organizational efficiency we formulated the following hypothesis:

H1: There is a statistically significant association between performance evaluation methods and a degree of importance of requirements/criteria put on these methods.

In order to assess the effectiveness of different methods and on the basis of analysed theoretical assumptions we have specified a set of requirements/ criteria which have to be met by these methods. The final set consisted of five criteria, namely: Objectivity, accuracy and reliability, feedback, focus on remuneration, the incentive effect. Cramer's contingency coefficient V in the table below shows no strong (above 0.5) correlation between evaluation methods variables and their criteria. Thus we marked the most significant correlation relations reaching medium correlations. For better clarity of data the table highlights 3 most significant correlations and results are interpreted in terms of all the tested criteria / requirements that are specified in the method.

Table 1 Values of Cramer's contingency coefficient V

Variable – Performance criteria	**(a)**	**(b)**	**(c)**	**(d)**	**(e)**
Management by Objective (MBO)	0,3834	0,3411	0,3432	0,3019	0,3932
Rating Scales	0,2229	0,3917	0,3638	0,3235	0,3544
Ranking	0,2655	0,3633	0,2924	0,2882	0,3776
Interview	0,3009	0,3049	0,2946	0,2429	0,4017
Checklist Method	0,2329	0,2693	0,2892	0,3339	0,3181
Paired Comparison Method	0,2351	0,3347	0,2882	0,3029	0,3319
Critical Incidents Method	0,2548	0,3216	0,2601	0,2475	0,2201
Essay Method	0,2203	0,2641	0,1917	0,2802	0,2633
BARS	0,2862	0,2941	0,2511	0,2544	0,3248
360-Degree Feedback	0,3917	0,2934	0,3677	0,2671	0,3262
Self Appraisal	0,3056	0,3369	0,3010	0,2214	0,3055
Assessment Center	0,2418	0,2842	0,2169	0,2816	0,2919
Balanced ScoreCard	0,3424	0,3396	0,2473	0,2844	0,2875

Legend: (a) Objectivity, (b) Accuracy and reliability, (c) Feedback, 1(d) Focus on remuneration, (e) The incentive effect

Source: Own processing.

4 Results and discussion

The results presented arise from the analysis of the relationship between the set of tested performance evaluation methods and criteria laid down therein in terms of the most significant correlation relations based on values of Cramer's contingency coefficient V.

When analysing performance evaluation methods we observed correlations between method's variables and requirements reaching small (0.1-0.3) and moderate (0.3-0.5)

values in order to assess the effectiveness of these methods using Cramer's contingency coefficient V. As we can see from the table often repeated and correlated method is the evaluation interview, 360/720 degree feedback or rating scale method the occurrence of which was also confirmed in terms of frequency of their use in business practice. The results are specified in the following text.

The most debated criterion of performance evaluation process is the objectivity of evaluation, which should reflect impartial performance evaluation carried out by an impartial evaluator. The highest degree of correlation among moderately correlated was observed in the case of the method 360/720 degree feedback (0.3917). This method is in fact a multisource evaluation when a subject is assessed and evaluated by several parties, thus eliminating the risk of bias or subjectivity. The second correlating performance evaluation method is the Evaluation based on objectives (0.3834). As this is a method where the objectives are quantifiable, meeting objectivity criteria is important and justified. The third correlating method is BSC method (0.3424) that requires evaluators to set specific goals and their implementation rate/ quantification. The least objective but with a small degree of correlation (0.2203) is the method of free description, which can be influenced by existing personal relationship between evaluators and employees.

In order to reward individuals fairly performance evaluation system requires accurate and reliable measurement. The strongest correlation was observed in the case of a rating scale method (0.3917) – evaluates employees' own work and reports outcomes in the form of numeric graphic and the like scales. The second evaluation method is a method based on the performance standards (0.3633), most commonly used in the evaluation of production staff. In case standards are set appropriately, this method may achieve desirable accuracy. The third most accurate method is MBO method (0.3411) based on the management and evaluation of pre-set objectives. The weakest correlating method in terms of accuracy and reliability is free description method (0.2641) - evaluators have different levels of writing skills and there is also a lack of homogeneity as well.

As it is known, feedback may have two forms - positive and negative/ it can support certain behaviours or eliminate those undesirable. Therefore, it is necessary for employees to obtain results of such evaluation. It was found, and confirmed by the correlation method, that the highest degree of objectivity is provided by the method 360/720 degree feedback (0.3677), which is based on ratings from multiple sources. The second most significant correlating method is the objective-oriented MBO method (0.3638), which aptly points out areas where improvement is needed. The third method is the evaluation questionnaire method (0.3432) that points out specific problematic areas, problems and plans. The lowest degree of correlation, with respect to the criterion of the feedback, was shown by the method of free description (0,1917).

Adequate remuneration of employees for their past performance has to motivate employees in future. Thus, the link between evaluation and remuneration is very important. The most important correlating method is the evaluation questionnaire method (0.3339). It allows evaluators to compare results, because the actual weight of criteria reduces differences between various types of job tasks. The second most important method is the method of rating scale (0.3235). It compares results despite the fact it is difficult to document these results. The third method is BARS method (0.3029)

based on an assessment of employees' attitude to their tasks and their working behavior. The least important in this case is the self-assessment method (0,2214).

The result of the effective evaluation process should be motivated employees who are encouraged to work more efficiently. However, it is questionable whether performance evaluation is a good motivational practice. Inquiries in this regard pointed out that the highest degree of correlation in the case was shown by the method of evaluation interview (0.4017). An effective performance evaluation interview should motivate employee and his/ her performance in days to come. The MBO method (0.3932) can be perceived as a motivational evaluation encouraging employees to work more efficient and focus on future goals. The third method is the method of performance standards (0.3776) which clearly and distinctly shows employees objectives that are to be met.

CONCLUSION

In conclusion it can be stated that based on the results of testing using Cramer's coefficient V we can accept the alternative hypothesis. This means that there is a statistically significant relationship between the evaluation methods and criteria laid down therein. The hypothesis can be verified. According to values of Cramer's contingency coefficient V the most suitability and effectiveness method of evaluation seems to be MBO. Indisputable advantage of the method is, that employees themselves should be involved in the goal-setting (in accordance with the performance management objectives that should be agreed with employees in advance).

Optimizing the system of performance evaluation is a challenging task because evaluators need to assess suitability of the implemented tools and methodologies for management processes. The situation in business entities differ, resulting in inconsistencies in the form of applied systems and evaluation methodologies. Therefore, we cannot talk about integrated approach or performance evaluation of individuals. Evaluation techniques and methods have different properties and procedures, but the literature states 13 established and most frequently used methods whose suitability and effectiveness is statistically tested through the assessment of selected variables and their importance - requirements. On the basis of the above the study presents correlation relations of Cramer's contingent index V with regard to median values from the point of view of their impact on the performance evaluation of an individual in the context of increasing efficiency of business entities.

ACKNOWLEDGEMENTS

The article is related to VEGA project No. 1/0513/14, dealing with "Research on possibilities to measure and assess the impact of human resource management practices on organizational performance".

REFERENCES

[1] SHOWKAT S., Performance appraisal in banking organization. In: International Refereed Research Journal. Vol. 4, Iss. 3, 2013.
[2] SOJKA L., ŠTEFKO R., Position of talent management in context of organizational functions. In: European Scientific Journal. pp 346-356, 2014.
[3] HRONÍK F., Hodnocení pracovníků. Praha: Grada Publishing. 2006.
[4] KORAUŠ A., ŠTEFKO R., DOBROVIČ J., Acqusition Activity in Financial Sector. In: European financial systems 2015: proceedings of the 12th international scientific conference. pp 277-286, 2015.
[5] WAGNEROVÁ I., Hodnoceni a řízeni výkonnosti. Praha: Grada Publishing. 2008.
[6] BOROŠ J., SIVÁK R., Manažment ľudských zdrojov a organizačné správanie. Bratislava:Iris. 2004.
[7] WERTHER W., DAVIS K., Human resource and personal management. 1.Edt. Victoria Publishing. 1992.
[8] DVOŘÁKOVÁ Z., Řízení lidských zdrojů. 1.vydání. Praha: C. H. Beck. 2012.
[9] DUDA J., Řízení lidských zdrojů. Ostrava: KEY Publishing. 2008.
[10] VENCLOVÁ K. et al., Identification of Employee Performance Appraisal Methods in Agricultural Organizations. In Journal of Competitiveness. Vol. 5. Iss. 2. pp 20-36, 2013.
[11] TURGUT H., MERT I. S., Evaluation of Performance Appraisal Methods through Appraisal Errors by Using Fuzzy VIKOR Method. In: Business And Economics--International Commerce. vol. 7, No. 10, pp 170-178, 2014.
[12] FISCHER C. D., SCHOENFELDT L. F., SHOW J. B. Human Resource Management. Boston: Houghton Mifflin Company Proud. 1999.
[13] COCUĽOVÁ J., Analysis of differences in performance appraisal in an international context. In: International journal of science, commerce and humanities (IJSCH). Vol. 2, no. 8. pp 61-67. 2014.
[14] KONDRASUK J. N., So What Would An Ideal Performance Appraisal Look Like? In: Journal of Applied Business and Economics, Vol. 12, Iss. 1, pp 57 – 67, 2011.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE ASSUMING OF CORPORATE RESPONSIBILITY OF LARGE ROMANIAN COMPANIES IN TELECOMMUNCATION SECTOR AND IN BANKING SECTOR

Assist. Prof. Edit Nagy
Assoc. Prof. dr. Erzsébet Szász
Partium Christian University, Oradea, **Romania**

ABSTRACT

The idea of corporate social responsibility during the past 150 years has had it`s long journey, therefore it is considered not only a fashionable topic, not just an optional business practice or recommendation by the EU, but also a sense of commitment, a strategic, proactive approach.

My research reveals provided by the two companies investigated CSR data which show that as of Orange Romania Telecommunications company and such as Raiffeisen Bank Romania carries a consistent, proactive corporate social responsibility strategy. In the case of the above-mentioned companies it can be emphasized that CSR is not only the domestic subsidiary, but they are representing our country with a growing international commitment to corporate social responsibility with. We have to mention when speaking about these two companies, that they had published with annual frequency of reports of CSR, social programs, these backed by many years of experience in the field.

The aim of the study was to prove that turnover might net profit in proportion to detect the percentage of money allocated for the share of social programs by the international companies. Furthermore, to analyze the proactive and strategic engagement, that amount of money for the supported companies not fall for any negative trends in connection with the profit failure.

Orange Romania and Raiffeisen Bank Romania follows a consistent, proactive corporate social responsibility strategy and therefore it can be stated on the basis of this information that in recent years they supported the same programs, and the ammount of allocated money has not changed with the change of the annual profit. It can be emphasized that CSR is clearly important not for only the to the domestic subsidiary, but the whole business group, representing our country with a growing international commitment to corporate social responsibility.

We agree with the statement that the Romanian business community corporate responsibility have yet to develop much in order to grow up to the international responsibility practices, but fortunately our country is active in international companies to promote this by already operating abroad as here are trying to achieve the an already working pattern. Perhaps partly the fault of the national CSR professionals, it is easy to assume spells may fall to the side to hide behind a nice-sounding programs and projects to conduct a marketing responsibility activity. The change should not be described a fast one, but definitely one that moves in a positive direction in the Romanian companies, because they are taking responsibility with respect in this struggle.

Keywords: CSR, Romanian companies, social programs.

The idea of corporate social responsibility during the past 150 years has had it`s long journey, therefore it is considered not only a fashionable topic, not just an optional business practice or recommendation by the EU, but also a sense of commitment, a strategic, proactive approach [1].

Before the 1900's organizational responsibility did not exist, a company was responsibile only towards the owners and managers, and the only aim was confined to the production of the profit itself, thereby contributing to the economy. In the early 20th century the term so called corporate social responsibility gradually began to play an increasingly important role in the labor force, their rights, or their working environment. Between 1950 and 1965 the term has appeared within the public company obligations: the companies had to offer full descriptions of their products and services to the costumers. In the following years the protection of environment became more and more important, equality and social justice issues also were popular [2].

The term Corporate Social Responsibility (CSR) was used for the first time by Howard Bowen in his book published in 1953. We can read in Bowen's work entitled *Social Responsibility of the Businessman* that "the social responsibility of the businessman's duty is to seek the better positions, take decisions and any actions to follow, according to the aims and interests of society [3]. In 1970 Milton Friedman also contributed to the understanding of responsibility [4]. The economy's social responsibility is to increase the profit itself (*The Social Responsibility of Business Is to Increase Its Profits*). His study was to point out that corporate responsibility is nothing more than the fact that the company's leadership has to increase in the business activities the company's profit, but in its realization they can not forget the society, the limitations imposed by law and morality, since in addition to the profit maximization of the company's managers are obliged to comply under all kinds of avoiding fraud and deception.

Carroll (1979) coined the conceptual three-dimensional model of corporate social performance and corporate social responsibility which describes the economic, legal, ethical and discretionary expectations of society. These three dimensions are nothing more than the well-founded CSR definitions, the knowledge of the social issues affecting their responsibilities and understanding the importance of them, and the company's philosophy and reaction plan towards a variety of social problems [5].

In the 21st century the European Union has its own CSR policies and determination. In The European Commission's Green Book (2001) the essence and responsability of volunteering is summarized, while for 2011, they mention the sustainable development as a social responsibility of companies [6].

Despite the fact that over the years a lot of theories were formed, experts still can not decide the exact definition of corporate responsibility.

Dahlsrud (2006) [7] during his research found and analyzed 37 different definitions, out of these 37 definitions 27 derive from different authors and all of them were published between 1998 and 2003. Below I will list the most popular of them, following the order established by the Dahlsrud.

The European Commission's 2001 corporate social responsibility is formulated as companies voluntarily integrate social and environmental concerns in their business operations and in their relations with.

The World Business Council for Sustainable Development in 1999, has formulated the definition of this kind of commitment by the companies that these has have to contribute to a sustainable economic development, focusing on the employees, their families, the local communities and society as a whole in means of improving the quality of life for all of them.

A year later, in 2000, they expanded this definition, this time they inserted the description of social responsibility of the companies meaning when a business is constantly engaged towards social responsibility using an ethical behavioral this can

contribute to an economic development while improving employees 'and their families' quality of life, as well as the local community and of society in general.

Last but not least, the Business for Social Responsibility non-profit organization in 2000, said that corporate responsibility business decisions, have to comply with ethical values, and legal requirements of the people, communities and the environment respecting their taste.
Dahlsrud recognized that there are five motives and these appear in most definitions, and these are the following: the concept of volunteering, the responsability of the stakeholders, the social aspect, the protection of environment and the economic dimension.
Corporate social responsibility was limited in the beginning only to the large companies as the a "new opportunity", it encouraged the organizations perform exercises, which are compatible with their commercial value, and which listens to the oppinion of its stakeholders (employees, suppliers, consumers, customers, local communities, environmental organizations, NGOs etc.) these expectations [8] these terms are fall Freeman in the determination list made by Freeman" that any individual or groups of individuals may affect the results of an organization's objectives or this might be influenced by them" [9].
Researchers agree that all organizations have an impact on society and the environment by the activities they do, with their products and services or keeping contact with the key stakeholders, and this is the reason why corporate social responsibility is a very important factor to every company's point of view, whether large, medium or small it be [10]
Iamandi (2010) [11] expresses the fact that in Romania in the corporate sector level, due to the fact that corporate responsibility is still in its infancy and that the conceptual point of view of this factor in our country is active, but it is only promoted by international companies, but its implementation is typically limited to philanthropic initiatives and PR campaigns, which really reduces its strategic potential.
In the next section I will examine two large companies, Orange Romania and Raiffeisen Bank Romania on corporate social responsibility practices and by the analysis of the annual reports, I will try to figure out in numbers how much they are responsible.
The Orange France Telecom subsidiary, which offers mobile, internet and television communication options. It is a market-leading group company with more than 183 million customers worldwide, on all five continents.
Their website points out that Orange "ensures transparency" and that ISO 9001 certification also provides further aim in the growth of leading to a responsible way through respecting the environment and the community in which the activities are carried out by the employees, its partners and shareholders, and based on promoting a sustainable development strategy. The company wants to creat a "significant positive impact" on the community, and as they admit it on their own admission they take this responsibility very seriously. The Group has its own global strategy on corporate responsibility, through which they want to ensure responsible management of the activities in all markets where the company is present.
In Romania, corporate responsibility program was launched by Orange in 2003.
Orange has 156,000 employees and 244 million consumers in 29 countries. 148 supplier audits took place in 106 facilities in 18 countries. In 2014 there were 35 dialogues held with the stakeholders, in 22 countries, made more than 700 personal interviews were

held. 92% of Orange employees feel their jobs better, or at least feelt that they have a good working environment and their relations with their collegues as it could be at other companies. As far as Romania is concerned in 2014 909 million EUR were recorded in revenues (turnover), at the local subsidiary Orange shops. At the end of 2014 a total of 2,418 persons were working in Orange shops and their average age was 34 years. The 45% of managerial positions are held by women, giving Orange Romania the best ratio in this kind of group. 450 employees participated in volunteer activities.

The most important CSR activities and events in which Orange took part:

- Happy Faces: a program directed by the Orange Foundation and Samsung Romania, which aims to support the education of hearing-impaired children.
- "Support a non-governmental organization" organized by the Orange Foundation program that provides up to 125,000 RON in charity projects. This project is coordinated by Orange Romania employees.
- The prize of Top Employing Company graded in two consecutive years.
- Orange Labs Innovation program: for college student in Bucharest and Cluj and for technical, business and communications majors.
- In May: Orange Foundation announced the "through the world in colors and in sounds" program's winners. Nine organizations can realize projects that support sight and hearing impaired persons, in a total value of 358 000 EUR.
- 4G Caravan
- Bucharest's Polytechnic University's electronics, telecommunications and technology class students finished their Orange Educational Program.
- In October: the launch of the first artificial SuperCoders workshop - through this initiative 10 and 13 year old children can learn the basics of programming within the Orange group.
- November: Week of Volunteering - 130 Orange volunteers with 70 youngsters - from civil organizations and universities - digitized 11,900 pages, these are now available to the general public and people with disabilities.
- More than 1,100 phone and phone accessories are recycled through the YouthBank program, which is intended to gymnasiums, within the framework of the Week of Volunteering.
- December: the donation of gifts to "Rescue the Children" (Salvati Copii) organization.

The Orange group's corporate social responsibility policy is internationally determined and it is based on three strategic pillars:

- Ethical Principle: Orange considers the ethical attitude to relationships as a base, whether about consumers (protection of personal data and information) or colleagues (mutual respect, equality of opportunity, to ensure the best possible working conditions, professional development), or about half of the business, suppliers of (promotion of responsible practices, the introduction of CSR criteria in a transparent and fair selection process).

- Through Green communication: they try to reduce energy consumption as much as possible and contribute to the development of circular economy by the integration of the used phones reintroducing them in the production cycle.
- Digital Revolution for everyone: a fundamental principle which tells that everyone has the right to become part of the digital society. Their purpose is the coverage of the poorly or not at all covered digital signal sites, or offering the necessary tools for all consumers, regardless of age, socio-professional and educational path regardless of status, to be used with confidence and enjoy all the benefits offered by the technology.

Orange Romania CSR projects and initiatives are organized around four major strategic directions: participation in the community, digital inclusion, the safety of children in the online media and the protection of the environment. In addition, a non-profit organization plays strategically a very important role in the Orange Foundation, this has been operating since 2012 and its main purpose is to take over the company's philanthropic activities. The foundation is financed in large part to the funds of Orange is happening, but fund come in also from individual donations.

Orange does not reports the total money spent on CSR activities, but gives out some details about how much the company spent.

Supported case	**Budget**
Support a non-governmental organization (support NGO called) program	125.000 RON
The world through colors and sounds (Lumea prin culoare și sunet) program	358.000 EUR
Orange Educational Program Engineering scholarshisp (annualy given)	24.000 EUR
Donation for the YouthBank from the collected and recycled telephones	3.500 EUR
Total:	125.000 RON & 385.500 EUR

Source: The Orange Romania CSR Report 2014 [12]

Since it is not in all programs indicated the amount of money spent, the value is deemed to be the minimum so there is the possibility of other CSR costs arisen about which I can not exactly tell. This minimum amount is reported as approx. Orange Romania 2014 total sales revenue and represents the total of 0.05%

The Vienna-based Raiffeisen Bank Raiffeisen Bank is the subsidiary of International AG., which is one of the largest banking and investment services company engaged in Austria, and is occuppying an internationally leading position in Central and Eastern Europe. The Raiffeisen group's other segments also targets other Romanian subsidiaries, which are Raiffeisen Asset Management, Raiffeisen Leasing and Raiffeisen Banca for Property.

Raiffeisen bank has more than 5,000 employees and more than 2 million costumers. In numbers 101,000, small and medium-sized companies, large companies 7700 and roughly two million physical person. The Bank of Romania covers all the romanian counties, a total of 210 places, 527 agents, more than

1,100 ATMs, more than 14,000 EPOS terminals and more than 40 multi-functional banking machines.

According to Raiffeisen Bank's plan, it supports the development of sustainable and prosperous communities, by understanding the customer needs and helping them to achieve their maximum potential in security, offering easy services of consulting and financial services. Raiffeisen's vision is to become the favorite financial okosystem in Romania, where customers, employees and partners share their experiences and they mobilize their resources to create value for everyone.

The bank made public its value system, which is the following:

- Integrity: they identify themselves honest, open and always seek to carry out their work to preserve objectivity during every interaction.
- Education: looking for new things to learn and by learning quickly they recognize their mistakes and learn from their experiences, innovate, remain open to change and adapt in such a way to encourage cooperation and adaptability.
- Respect: by respecting each other, they recognize their abilities and values, and accept those who are different from them, but their moral character is good (high ethical sense, integrity etc), appreciate difference of the ideas, opinions and experiences.
- Passion: they love what they do and want to help costumers to make a quantum leaps in success.
- Collaboration: appreciate the diversity of opinions regardless of the hierarchy, can hear clear and precise when they communicate when disagreements occur, when solid arguments are put forward and the essence of the problem is considered in mind and not convicted as a mistake.
- Differentiation: they strive to have a few rules, a lot of principles and reasons, they objectively assess the problems and seek the root of the problem.
- Simplicity: with costumers about the convenience and comfort they give their best, looking closely to the finishing of the tasks, continually seeking to simplify the complex processes by working efficiently and not wasting any resources.

Raiffeisen uses two methodologies to report responsibility, these are the London Benchmarking Group (LBG) and the Global Reporting Initiative (GRI / GRI 4) methodology.

The bank allocates 2 million € each year for investing in the community, which is utilized along five directions: financial education, sport as a healthy lifestyle, art and culture, urban economics and social aids. The staff members are encouraged to participate as much as possible in the bank's fundraising and volunteer programs.

Money spent on CSR and trends and total revenues were as follows:

2. Table - A community of relating Raiffeisen Bank investment with other values

Years	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Turnover (RON)	**1.988.103 000**	1.863.790 000	1.723.576 000	1.667.449 000	1.736.459 000	1.753.841 000

Net profit (RON)	290.117 000	383.894 000	396.549 000	427.685 000	483.104 000	**512.493 000**
Investments for the community (RON)	4.874.168	5.153.524	6.110.235	**8.049.468**	7.649.220	7.568.711
Annualy alocated money from profit in percentage	1,68%	1,34%	1,54%	**1,88%**	1,58%	1,48%

Source: Own compilation based on the annual accounts of Raiffeisen Bank Romania [13]

The domains supported by the Raiffeisen in 2013 and 2014 and the percentage of these have been summarized in the following table, showing that the greatest emphasis was given to protect the environment in both years, while three other important areas of the company were arts, culture and social assistance.

3. Table – The areas supported by Raiffeiesen

Supported areas	**2013**	**2014**
Environment	**19%**	**35%**
Healthcare	5%	16%
Art and Culture	17%	14%
Social assistance	15%	11%
Sport	13%	10%
Education and Youth	18%	6%
Proffesional forming	-	5%
Local improvements	10%	-
Others	3%	2%

Source: Own compilation based on the annual reports

There were insignificant changes in Raiffeisen's banking community partner relationships, and their proportions from 2012 to 2014, while non-governmental organizations make up the largest percentage, which during all three years of support for more than three-quarters are attributable ownerships, and to the non- profit organizations, educational institutions and health care institution.The supported projects for the 2014 year had a total of 261.246 beneficiaries, these were contributed with an average value of 29 RON. The biggest change, which the projects beneficiaries were the developments in their own lives.

The group of beneficiary's properties were as follows: 57.89% was a person who wanted to aquire new skills or knowledge, 38.6% were having a low income, 33.33% are persons who are interested in a healthy lifestyle, 26.32% were having special needs (disabilities), 26.32% were those interested in art and culture, 24.56% and those with health problem (physical or mental), 22.81% from rural backgrounds, 22.81% higher than an average education, 19.3 % of minority groups and 15.79% unemployed, those with learning difficulties14.04%, 12.28% did not receive any vocational education, 5.26% homeless and struggling with addictions problems.

CONCLUSION

As revealed in the previous pages, as Orange Romania, and as like Raiffeisen Bank Romania follows a consistent, proactive corporate social responsibility strategy and therefore it can be stated on the basis of this information that in recent years they supported the same programs, and the ammount of allocated money has not changed with the change of the annual profit. It can be emphasized that CSR is clearly important not for only the to the domestic subsidiary, but the whole business group, representing our country with a growing international commitment to corporate social responsibility. We can agree with Iamandi (2010) earlier cited remark that the Romanian companies have to evolve a lot to towards a better corporate responsibility in order to live up to the international responsibility practices and the conceptual point of view, but our country is active and international companies promote this by already trying to achieve the operating example abroad. Partly might be said that companies are hiding behind nice-sounding programs and projects only marketing responsibility conducts, which calls into question the previously stated strategic implementation, but if we could not talk about allocated money in the programs and about interested responsibility, the annual accounts would be transparent, and not clearly retrieveable. Of course, as mentioned above, despite a good CSR strategy is not only to build on the present but also to support the future sustainability, either by a foundation, as we have seen in the case of Orange, even longer tradition, by holding yearly programs, events and projects as Raiffeisen does not letting it become shallow, therefore giving birth to long-term solutions in certain social and environmental problems. The change can not be described as fast, but definitely a moving one in a positive direction with respect to the companies in taking responsibility towards a sustainable economy.

REFERENCES

Nagy E. *A vállalatok társadalmi felelőssége -történeti áttekintés*. *Dunakavics* – 2015/1, 2015.
Jakovleva, N. *Corporate Social Responsibility in the Mining Industry.* Aldershot: Ashgate Publishing, 2005.
Bowen, H. *Social Responsibilities of the Businessman.* New York: Harper & Row, 1953.
Friedman, M.*The Social Responsibility of Businessis to Increase its Profits.* The New York Times Magazine. September 13., 1970.
Carroll, A. B. *A three-dimensional conceptualmodel of corporate social performance*. Academy of Management Review. 4/497–505, 1979.
http://ec.europa.eu/growth/industry/corporate-social-responsibility/index_en.htm
Dahlsrud A. *How Corporate Social Responsibility is Defined: an Analysis of 37 Definitions*. Corp. Soc. Responsib. Environ. Mgmt. 15, 1–13, 2008.
Kechiche, A. & Soparnot R. *CSR within SMEs: Literature Review.* International Business Research; Vol. 5, No. 7; 2012.
Freeman, R. E. *Strategic management: a stakeholder approach*. Pitman, Boston, 1984.
Delchet-Cochet, K. & Vo, L.-C. *Impact of CSR Tools on SMEs*: *The Case of Global Performance in France.* International Business Research; Vol. 5, No. 7; 2012.
Iamandi I.-E. *Responsabilitatea socială corporativă în companiile multinaţionale*. Bukarest: Editura Economică, 2010.
Orange România: Raport de responsabilitate socială 2014.
https://www.orange.ro/about/2014_raport_csr.pdf
Raiffeisen Bank România: Raport anual de responsabilitate corporativă 2009, 2010,2011,2012, 2013, 2014 , https://www.raiffeisen.ro/wps/wcm/connect/d569e038-9353-47ce-ab22-1e80d9112cc0/Raport+de+responsabilitate+corporativa+2014.pdf?MOD=AJPERES&CACHEID=d569e038-9353-47ce-ab22-1e80d9112cc0

THE CHARACTERISTICS OF THE ECOTOURISM CLUSTERS DEVELOPMENT

Assoc. Prof. Dr. Oleg Bunakov

Assoc. Prof. Dr. Anisa Khusainova

Kazan (Volga region) Federal University, **Russaia**

ABSTRACT

The purpose of this study is to describe the tourism industry in Russia. The authors define the clustering in tourism and ecotourism as two important features of perspective. Cluster-based tourism development in Russian regions and new approach to ecotourism are presented in the article. The researchers show its necessity and importance on the base of the history of cluster tourism in Europe. The paper shows that the concept of clustering is becoming increasingly popular in tourism. The study is an attempt to suggest tourist destinations with global quality tourism service and standards of good environmental policy and practice. As the finding of the paper Eco cluster Project is presented by the authors. The research highlights the importance of eco cluster as an instrument for environment protection. Much attention is paid to tourism branding. The authors emphasize eco cluster as a powerful tool in order to attract tourists and to contribute at achieving competitive advantages of marketing.

Key words: Cluster-based tourism, ecotourism, eco cluster, environment protection

INTRODUCTION

One of the strategic objectives of state tourism departments in Russian regions is to create a brand name for the krai, the republic or the region through cluster-based tourism development in order to attract domestic and overseas tourists

The next aim of the federal authorities is to promote and develop eco-tourism in such a way that it contributes to environment protection.

Both issues are the highest priority for any region, as eco-tourism and tourism cluster are regarded as a model of sustainable development of the tourism industry.

The history of clusters tourism dates back to the late 20th century in Europe, when clustering was initiated to increase the competitiveness of regions through innovation.

Clusters have been developed in many European countries, North America and Asia for last 20 years. Germany, France and the United States are the leaders where clusters are developed in the field of innovative technologies. These countries have developed enhanced cluster policies based on innovation in pharmaceuticals, biotechnology, nuclear technology etc.

An innovative cluster is a regional concentration of a companies and institutions characterized by:

• the same knowledge/technology base in one or more key sectors of economy;

• inter-cluster coordination mechanism;

• synergy effect expressed by the improvement of economic efficiency and effectiveness of every company or institution due to the high levels of cooperation [1] [2].

The Russian Federation follows the global trends in clustering. In 2008 in accordance with the concept of long-term socio-economic development of Russia until 2020 and the main activities of the Government for the period until 2012 it was decided to establish a network of industrial and high tech clusters. 15 years later 67 clusters of a various specialization were registered by the Russian Cluster Observatory. However the tourism clusters are the rarest of them.

The Russian Cluster Observatory registered two tourism clusters: in Veliky Novgorod and in the Republic of Sakha (Yakutia). Registered in 2014 they are still being developed [3]

In tourism, the cluster is a concentration of tourism products. And it is organized on the basis of service providers such as restaurateurs, hoteliers, transport companies, travel agencies and others. The more participants are there in the organization, the more attractive for the consumer is the end product. How can cluster meet tourists' needs? The more requirements are met, the less negative emotions arise.

Restaurants, cafeterias, bars, snack bars facilitates make planning easier, and there is no need to worry about food during the holidays. If you organize the transfer of tourists and build hotels of different rates the tourists enjoy it and their holiday will last more than a day.

However, tourism cluster development should not be based on one type of tourists, but include people of all ages, genders, and backgrounds. Recreational facilities of the cluster should vary on the all types of travellers. For example, if we talk about skiing, the slopes should be of different levels of complexity. Entertainment areas should meet the expectation of families and young people of different levels. Customer satisfaction is their top priority. Persons with disabilities are an important group. Russian tourism industry is not doing enough to meet the needs people with disabilities. However according to social concept of the cluster all people can enjoy the benefits of leisure time on its territory.

In general, the cluster unites a lot of tourist products in its territory and it is a single entity. It is closely connected with the corporate identity. A unique style, based on the local history, legend, concentrated on one fictional character or objects are specific attractions of the cluster. This highlight has to be everywhere: in the logo of the tourist product, and on souvenir printed products, at the uniform of employees, in advertising - anything that tourists see or use every day.

Tourism Cluster is a great enterprise, which should function as a good Swiss watch. It is known that the success of any company depends on the staff. Some should manage, and some - perform. The major world tourist brands have the motto: "Satisfied employees - satisfied customer." The staff is the foundation of the cluster and any tourist enterprise, so the cluster area should have the infrastructure for its staff (place of residence,

canteens, rest rooms, toilets). Employees should love their work and do it with a pleasure. Then the customer will have the same emotions.

There are different kinds of regional tourism clusters in Europe, including Eco tourism clusters. European countries reduce the impact on the environment. They did not organize a huge dump in the country. A proportion of waste is sorted into its fractions (plastic, glass, paper and plastic), which are then processed in factories. Europeans reduce the increase air pollution, preferring the electric cars or eco-mobiles. They save water, minimizing its use in everyday life. They use recycled paper for print, thereby protecting the forests of their countries [4].

In Russia, unfortunately, ecological situation is a very complex, which is fundamentally based on the mentality of its inhabitants. It has not yet risen the generation of people taking care of nature. Nowadays, the area of all the country's landfills covers the territory of two of France. The reason of this situation is the lack of waste processing plants, which can be founded only in big cities. The next problems are the depletion of freshwater resources and the disappearing of many species of fish. In addition, the water is polluted by sewage of numerous plants. The air is filled with exhaust gases, as most cars do not meet international environmental standards. Forests are exploited in large numbers; it violates the natural balance in the world of plants and animals in the world [5].

We cannot say that the government does nothing to restore the natural forces. A number of environmental companies, increasing the area of nature reserves and protected areas in many regions are increasing every year. A policy of green areas has been adopted. The active environmental protectors are the volunteers cleaning the parks, the forests and the river areas. But it is not enough, it is important to change the consciousness of all citizens of the country to love their land and to take care of it.

Ecotourism was appeared at the time when environmental problems have become one of the most urgent problems of modern world.

Ecotourism is one of the fastest-growing sectors of the tourism industry. The main objective of ecotourism is the nature conservation; minimizing the use of natural resources, their protection and replenishment. There are three types of tourists.

1) The most populous type. These are people who do not clean up after themselves.

2) Recreants, who clean up only after for themselves.

3) Eco-tourists, who during or after recreation clean up not only after themselves but also after others.

Eco-tourists prefer places, transport and accommodation that are stated as an eco [6]. For example, they choose hiking, bicycle or boat without a motor. And if they need to overcome a long distance, they choose the most ecological airline - FINAIR. They live in ecological hotels, where waste is sorted, where the frequency of towels washing is minimized and recycled paper is used. Plastic in these hotels is always recycled. The energy is saved by using motion sensor lighting. And one of the most important details of hotels is that a violation of the natural landscape is not changed. Trees are not cut down, and buildings stand around them, besides trees are numbered and registered by environmental organizations [2].

There are a lot of people in Europe, North America, Australia and China who understand that they are responsible for an environmental protection strategy and the conservation environment for future generations. You can find a numerous eco-clusters in these areas [7].

CONCLUSION

Eco-tourism cluster is the territory for tourists with the principles of nature conservation, intending to get environmental education how to minimize the damage. In most cases this cluster is associated with the settlements where local people's lifestyle does not harm the environment.

Thus, Eco cluster may be organized jointly with the rural cluster. This community make profit that is a key question of this union [8].

Starting this type of cluster you should be aware, it can't be 100% ecological. Human upset the balance of nature. It's necessary to minimize the damage. The eco cluster infrastructure shouldn't be different functionally from the regular tourist cluster. This cluster should contain local hospitality establishments as eating areas, entertainment spaces, establishments that offer local passenger transportation.

As for entertainment spaces, they can include sport facilities: football, volleyball, sledding, skiing, swimming, fishing, photography. Environment-related educational activities for adults and children are obligatory for this type of cluster.

The main purpose of the eco-tourism cluster establishment is to provide recreational, educational, entertainment services and the replenishment of natural resources.

Eco-cluster is an indicator of sustainable development of domestic tourism and symbol of environmental responsibility in action for any region

REFERENCES

[1] Development of innovative territorial clusters. The order of the President of the Russian Federation following the meeting of the Presidium of the State Council of the Russian Federation 11 November 2011 (The Protocol №PR-3484GC of 22 November 2011, paragraph 2).

[2] Bunakov O.A. The Management Of Positioning And Sustainable Tourism Development In The Region (on the example of the Republic of Tatarstan) / dissertation abstract on competition of a scientific degree of candidate of Economic Sciences / Russian International Academy of Tourism. Moscow, 2011, 172p.

[3] Map of clusters of Russia Retrieved from http://map.cluster.hse.ru/ -

[4] Birzhakov M.B. Introduction to tourism. 9th Edition, revised and enlarged SPb.: Publishing House Gerda, 2007, 82 p.

[5] Babkin A.V. Special forms of tourism. Rostov-on-Don: Phoenix Publishing, 2008 – pp 252.

[6] Ketels C., Lindqvist G., Sölvell Ö Strengthening Clusters and Competitiveness in Europe. The Role of Cluster Organisations. The Cluster Observatory, 2012.

[7] Sölvell Ö., Williams M. Building the Cluster Commons. An Evaluation of 12 Cluster Organizations in Sweden: 2005 - 2012. IvoryTowerPublishers, Sweden, 2013.

[8] Mingaleva Z., Bunakov O. Competitiveness assessment of Russian territories in terms of inbound tourism // Life Science Journal. Volume 11, Issue 6. SPEC. ISSUE. 2014. pp. 318-321.

[9] Shepelev IG, Yuri Markov Tourism and recreation cluster - the innovative mechanism of improving the system of strategic management of development of regions. // Modern Research of Social Problems. Volume 3, Issue 11, 2002. pp. 11-19.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
S G E M 2 0 1 6

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE CONTRIBUTION OF FDI AT ROUMANIAN ECONOMY DEVELOPMENT

Assoc. Prof. Dr. Ioana Anda Milin[1]

Assoc. Prof. Dr. Iuliana Ioana Merce[1]

Prof. dr. Elena Pet[1]

Lector. Dr. Remus Gherman[1]

Prof. dr. Ioan Brad[1]

[1] Banat University of Agronomical Sciences and Veterinary Medicine Timisoara, **Romania**

ABSTRACT

FDI is an investment relationship of long duration (typically) - between a resident entity (receiver) and one non-resident (issuing) that involves the exercise by issuing a significant managerial influence in the enterprise in which it has invested, expressing essentially one of main forms of contemporary globalization.

The evolution of FDI in each country (with influence at micro and macro level) is influenced by several factors including: general framework offered by FDI, economic factors, business factors etc. The issuer mainly analyzes the political and economic stability, legal and business framework development and privatization programs, communication channels, human capital quality, tax policy, etc.

The paper summarizes the evolution and contribution of FDI to the development of Romanian economy for the period 2007-2014.

Keywords: Investments, development, FDI, capital

INTRODUCTION

Micro and macroeconomic development plan of world states is strongly influenced by the volume, structure and dynamics of investments completed or in various stages of development.

A very special role in the economy is played by foreign investment. Usually they have a major importance in achieving the transformation process and economic recovery in most countries. [1]

In specialty literature are many definitions for this concept, but this refers to the fact that their existence involving two parts- trader receptor- issuer and trader located in different national spaces, which gives such investments element specific externality. [2]

In theoretical papers on FDI, it is emphasized that the main strategic reasons for making foreign investments are looking for new markets and new sources of raw materials; looking for opportunities to increase production efficiency; free access to new technological ideas etc.[3], [4]

Attracting foreign direct investment in a country is usually achieved by developing a stable institutional environment, simple, transparent and functional. Foreign investor believes that the main factors stimulated the decision to invest in a foreign country are- political stability, market absorption, financial stability, good skilled labor, geographic location, competitive costs, monetary convertibility, infrastructure etc.[4] We chose to analyze the evolution of FDI in Romania since 2007, the year with accession of our country to E.U. Period 2003- 2006 were characterized by annual increases in all three segments of FDI, so that at the end of 2006 the situation was favourable.

Analysis of the evolution of FDI was achieved by distribution by economic activities, by Romanian development regions and by country of origin FDI flow statement and balances in period 2006-2014 are as follows:

Table 1.

FDI flows and balances in Romania (million EUR)

SPECIFICATION	**2006**	**2007**	**2010**	**2014**
Shares in capital-flows	24243	2220	1 824	2 846*
Reinvested profits- flows	2673	1327	-	-
Net loans- flows	7496	3703	396	-425
Net FDI inflows	9059	7250	2220	2 421
Closing balance ISD	34512	42770	52585	60 198

* Including reinvested profits

Source: **Banca Nationala a României**- *Raport: Investiţiile Straine Directe în România, 2006,2007, 2010, 2014*

From the point of view of foreign investors focus on economic sectors the situation is: in 2007 FDI:

- were located mainly in manufacturing (32.9% of total), of which the largest recipients were: metallurgy (7.5%), food, beverages and tobacco (5.2%), oil processing, chemicals, rubber and plastic products (4.4%), transport means (3.6%) and cement, glass, ceramics (3.5%).

- FDI have also attracted significant financial intermediation and insurance, which include banks and insurance represent 23.3% of total FDI, retail and wholesale (14%), construction and real estate (7.8%) , telecommunications (6.5%) and services rendered to enterprises (4.5%). There is a weight still low compared to the potential of certain areas such as textiles, clothing and leather (1.7%) and hotels and restaurants (0.6% of total FDI)

In 2010, in terms of orientation towards economic sectors to foreign investors FDI were located mainly in manufacturing (32 percent of total). Within this industry the best represented sectors were petroleum, chemicals, rubber and plastic products (6.9 percent of total), metallurgy (5.3 percent), transport (4.9 percent), food, beverages and tobacco (3.9 percent) and cement, glass, ceramics (3.2 percent).Other activities that have attracted FDI year 2010 were financial intermediation and insurance (19.1 percent

of total FDI), wholesale and retail trade (12.4 percent), construction and real estate (9 percent), technology information and communications (5.9 percent).

Table 2.

I.S.D. in Romania-Distribution by main economic activities (million EUR)

	Total 2007		**Of which Greenfield**		**Total 2010**		**Total 2014**	
	Value	% of total FDI	Value	% of total FDI	Value	% of total FDI	Value	% of total FDI
TOTAL, of which:	**42770**	**100,0**	**16725**	**48,5**	**52**	**100,0**	**60198**	**100,0**
Industry	17409	40,7	4912	14,2	23	43,9	29324	48,7
Extractive industry	2046	4,8	156	13,4	2	4,5	3345	5,6
Manufacturing of which	14071	32,9	4654	0,7	16	32,0	19275	32,0
-metallurgy	3219	7,5	243	0,7	2	3,9	2430	4,0
- food, beverages and tobacco	2207	5,2	1127	3,3	1	3,2	1579	2,6
-processing oil	1870	4,4	504	1,5	1	1,9	1519	2,5
-means of conveyance	1546	3,6	568	1,6	840	1,6	1421	2,4
-cement, glass, ceramics	1511	3,5	225	0,7	950	1,8	1432	2,4
- that involves the manufacture of wood furniture products	1023	2,4	522	1,5	2	5,3	2711	4,5
- textiles, clothing and leather	737	1,7	636	1,8	2	4,9	3244	5,4
-tech computing, electrical appliances, broadcasting, communications	818	1,9	460	1,3	3	6,9	3420	5,7
-cars and equipment	537	1,3	138	0,4	835	1,6	983	1,6
- other branches of industial manufacturing	603	1,4	222	0,6	477	0,9	536	0,9
Electricity, gas and water	1292	3,0	111	0,3	3	7,4	6704	11,1
Financial and insurance intermediation	9961	23,3	2929	8,5	2	4,9	3074	5,1
Retail and Wholesale	5970	14,0	3819	11,1	1	2,0	7058	11,7
Post and telecommunications	2784	6,5	1653	4,8	6	12,4	5917	9,8
Construction and real estate	3329	7,8	1594	4,6	4	9,0	541	0,9
Services rendered to the enterprises	1940	4,5	1063	3,1	417	0,8	7798	13,0
Transport	529	1,2	270	0,8	10	19,1	3598	6,0
Hotels and restaurants	270	0,6	205	0,6	3	5,9	1029	1,7
Other activities	578	1,4	280	0,8	788	1,5	1504	2,5

SCIENTIFIC CONFERENCE WITH INTERNATIONAL MULTIDISCIPLINARY PARTICIPATION SOCIAL SCIENCES AND ARTS SGEM2016

Source: **Banca Nationala a României**- *Raport: Investiţiile Straine Directe în România, 2007, 2010, 2014*

FDI in 2014 were located mainly in manufacturing (32.0 percent of the total balance FDI). Within this industry the best represented sectors are: petroleum, chemicals, rubber and plastic products (5.7 percent of the total balance FDI), transport industry (5.4 percent), metallurgy (4.5 percent), food, beverages and tobacco (4.0 percent), cement, glass, ceramics (2.6 percent) and manufacturing of wood products, including furniture (2.5 percent).

Types of FDI, by contribution to the development and renewal of economic assets in the host country of structured investment FDI are:

- greenfield: creation and development of enterprises by or together with foreign investors in the form of greenfield investment;

- mergers and acquisitions: partial or full takeovers of enterprises by foreign investors from residents and development.

- corporate development: increase in the capital of foreign investors in direct investment enterprises.

- restructuring of firms: financing by foreign investors through equity, the foreign direct investment enterprises with losses to their cost effectiveness.

In 2007, greenfield investments were channeled primarily into manufacturing (13.4% of total stock) and within and in particular food, beverages and tobacco (3.3%), textiles, clothing and leather (1, 8%), transport (1.6%), petroleum (1.5%), wood (1.5%). Other sectors in which greenfield investments have a significant percentage were trade (11.1%), financial intermediation and insurance (8.5%), construction and real estate (4.6%).

From the territorial point of view, in 2007 targeting especially the FDI was made to Bucharest-Ilfov (64.3%), other development regions benefiting from significant FDI inflows were Center (8.3%), South (6.9%), Southeast (5.7%) and West (5.5%).

Table 3.

FDI distribution by region (million EUR)

	Total 2007		**Total 2010**		**Total 2014**	
	Value	**% of total FDI**	**Value**	**% of total FDI**	**Value**	**% of total FDI**
TOTAL, of which:	**42770**	**100,0**	**52585**	**100,0**	**60198**	**100,0**
Bucharest	27516	64,3	32720	62,2	35665	59,2
South East	2448	5,7	3290	6,3	2898	4,8
Center	3541	8,3	3909	7,4	5833	9,7
South	2942	6,9	3816	7,3	4194	7,0
West	2365	5,5	3446	6,5	4646	7,7
North west	1907	4,5	2232	4,2	3884	5,6
South west	1379	3,2	1928	3,7	1954	3,3

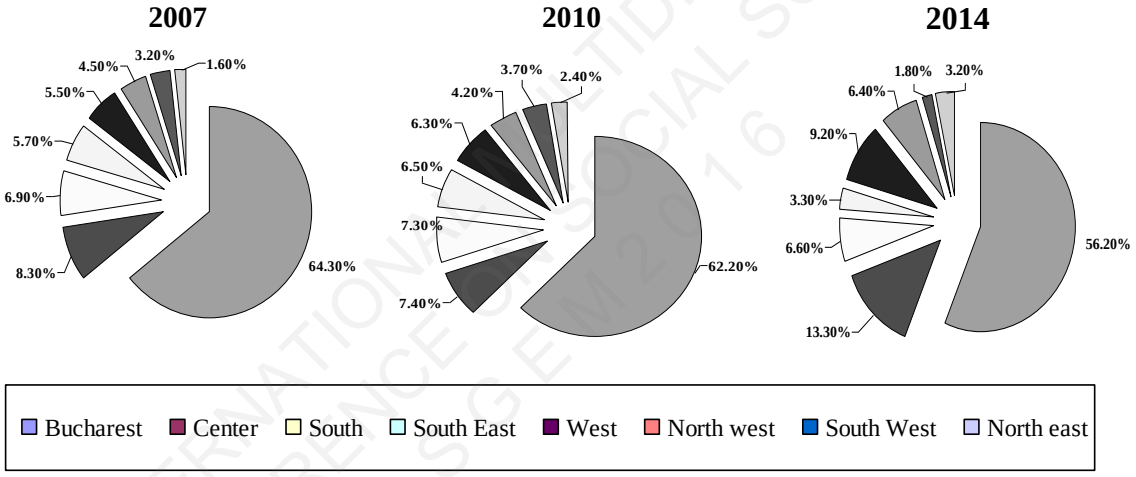
North East	672	1,6	1244	2,4	1624	2,7

Source: **Banca Nationala a României**- *Raport: Investiţiile Straine Directe în România, 2007, 2010, 2014*

In 2010 FDI were directed towards Bucharest-Ilfov development region (62.2 percent), other development regions benefiting from FDI in a relatively strong position as the center region (7.4 percent), the South (7.3 percent), West region (6.5 percent) and South East region (6.3 percent).Northeast region is the least attractive for foreign investors, registering only 2.4 percent of foreign direct investment.

From the territorial point of view is observed orientation of FDI in 2014 mainly to Bucharest-Ilfov development region (59.2 percent), other development regions benefiting from FDI being Center region (9.7 percent), West Region (7.7 percent), South region (7.0 percent) and Northwestern (5.6 percent).

As an observation, we would like to emphasize that territorial FDI were located by registered office direct investment enterprises, which does not always correspond to the place of economic activity.



Source: **Banca Nationala a României**- *Raport: Investiţiile Straine Directe în România, 2007, 2010, 2014*

Figure nr. 1 FDI distribution by development regions in Romania

Analysis FDI by country of origin indicates these rankings of the first countries that have invested din our country.

Top 5 countries by the share of FDI stock as at 31 December 2007 are: Austria (21.4% of total stock at end-2007, down from 23% in 2006), the Netherlands (16.3%, the decrease from 17.1% in 2006), Germany (11.7%, up from 10.1%) and France (8.8% vs. 8%) and Greece (7.5%), which it maintained its share in 2006.

In 2010 top 5 countries by the share of FDI stock are: the Netherlands (20.7 percent), Austria (17.8 percent), Germany (12.2 percent), France (8.3 percent) and Greece (5.7 percent), hierarchy recorded in 2009

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SGEM2016

Table 4

FDI distribution - origin countries (million EUR)

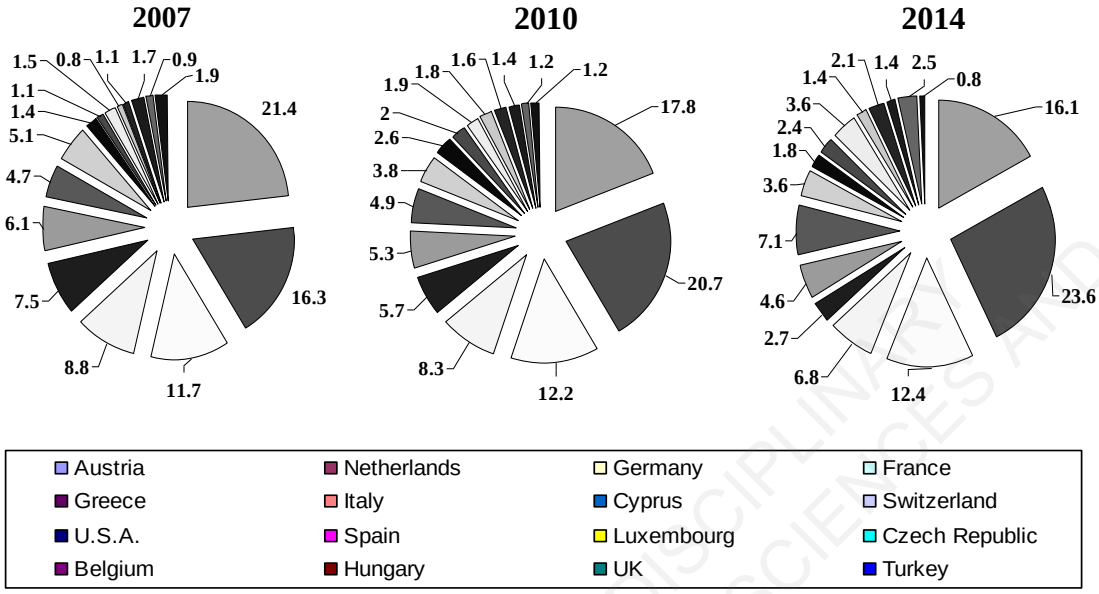
	Total 2007		Total2010		Total 2014	
	Value	**% of total FDI**	**Value**	**% of total FDI**	**Value**	**% of total FDI**
TOTAL, din care:	**42770**	**100**	**52 5825**	**100,0**	**60198**	**100,0**
Austria	9161	21,4	9 346	17,8	9694	16,1
Netherlands	6988	16,3	10 903	20,7	14224	23,6
Germany	5020	11,7	6 398	12,2	7482	12,4
France	3759	8,8	4 384	8,3	4119	6,8
Greece	3192	7,5	3 016	5,7	1644	2,7
Italy	2617	6,1	2 808	5,3	2776	4,6
Switzerland	2191	5,1	2 021	3,8	2151	3,6
Cyprus	2015	4,7	2 550	4,9	4274	7,1
Turkey	822	1,9	615	1,2	508	0,8
Hungary	738	1,7	717	1,4	838	1,4
Luxembourg	633	1,5	989	1,9	2150	3,6
U.S.A.	581	1,4	1 349	2,6	1080	1,8
Belgium	477	1,1	864	1,6	1281	2,1
Spain	474	1,1	1 064	2,0	1471	2,4
UK	395	0,9	627	1,2	1509	2,5
British Virgin Islands	384	0,9	379	0,7	-	-
Sweden	366	0,9	312	0,6	-	-
Czech Republic	341	0,8	972	1,8	838	1,4
Canada	265	0,6	207	0,4	108	0,2
Israel	185	0,4	155	0,3	-	-
Lebanon	179	0,4	254	0,5	161	0,3
Poland	125	0,3	211	0,4	281	0,5
Gibraltar	112	0,3	161	0,3	-	-
EBRD	103	0,2	158	0,3	162	0,3
Other countries*)	1656	4,0	1 079	2,1	1281	2,1

*Countries with aggregate investment is less than 100 million EU

Source: **Banca Nationala a României**- *Raport: Investiţiile Straine Directe în România, 2007, 2010, 2014*

Institutul Naţional de Statistică, Buletin Informativ – Activitatea filialelor străine în România, pg. 2 – 7, 2013

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016



Source: **Banca Nationala a României**- *Raport: Investiţiile Straine Directe în România, 2007, 2010, 2014*

Institutul Naţional de Statistică, Buletin Informativ – Activitatea filialelor străine în România, pg. 2 – 7, 2013

Figure nr. 2 FDI distribution - origin countries (%)

Top 5 countries by the share of FDI 31 December 2014 are: the Netherlands (23.6 percent), Austria (16.1 percent), Germany (12.4 percent), Cyprus (7.1 percent) and France (6.8 percent).

CONCLUSION

Community investment is central, being a factor influencing both the demand and supply of goods or services,

Types of FDI is varied, based on several criteria and is based on certain factors of the decision to invest, but foreign investment is the main purpose of obtaining profit by the investor directly stain.

FDI components are holdings of foreign investors in the share capital, resulting in the share capital subscribed and paid, both in cash and in-kind contributions, residents in resident enterprises, net credit - loans received by direct investment enterprises from foreign direct investor or from the group of non-resident companies which it belongs and reinvested net profit.

FDI developments in the Romanian economy in general had a positive trend, with slight fluctuate from year to year, but relatively constant on the branch structure, distribution , the distribution of the regions and which countries from the foreign investors

Greenfield is the most important form of FDI for a country's economy, including Romanian economy.

REFERENCES

[1] Milin Ioana Anda, Analysis of FDI in Romania- Simpozion-"Euroapean integration – new challenges of Romanian's economy, 3 rd edition", Universitatea din Oradea, Facultatea de Stiinte Economice, CD-Rom TOM XVI/2007, ISSN-1582-5450, pg. 351 – 356, 2007

[2] Negritoiu M., Salt inainte. Dezvoltarea si investitiile straine directe, Editura Pro si Editura Expert, Bucuresti, pg. 93 – 112, 1996

[3] Paun C. Paun L., Riscul de tara, Bucuresti, Editura Economica, pg. 9 – 11, 1999.

[4] Prelipceanu R., Investitiile straine directe si restructurarea economiei romanesti in contextul integrarii europene, Editura Lumen, Iasi, pg. 42 – 47, 2006

[5] *** Banca Nationala a României, Raport – Investiţiile Straine Directe în România - 2006, 2007, 2010, 2014, pg. 22 – 24

[6] *** Institutul Naţional de Statistică, Buletin Informativ – Activitatea filialelor străine în România, pg. 2 – 7, 2013

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
SGEM2016

THE ESTIMATION OF INNOVATIVE POTENTIAL OF THE HIGHER SCHOOL

Associate professor, candidate of economic sciences Tsukanova N. E. [1]

South-West State University, **Russia**

ABSTRACT

Systematic approach to the concept of the innovation potential of higher eduction; Offered the method for quantitative assessment of the innovation potential of higher education as a complex category, characterized by a system of interrelated indicators reflecting the results of higher education and the resources available in the interaction with the external environment.

In modern conditions of stable macroeconomic development of any system is only possible on the basis of effective innovation. The innovative development of the economy makes significant changes in all spheres of activity, which are carried out innovation, including in higher education. The effectiveness of the implementation of the development strategy of high school, based on knowledge and a sharp increase in the rate of technological progress depends on the level of its innovation potential.

Despite the large number of publications devoted to the problems of innovative development of the higher school, the mechanisms of implementation of the innovation potential of higher education institutions has not been fully investigated and have no conceptual framework. Currently, among the researchers, there is no common understanding of its essence, structure and methods of assessment.

The concept of "innovation potential" have been developed since the early 1980s and was a reflection of innovation. In some cases, the potential for innovation is identified with science and technology, and presented as "accumulated a certain amount of information on the results of scientific and technical works, inventions, design development of new equipment and production" [1, p. 29]. In addition to this definition of innovation potential, there are a number of others. Table 1 presents some approaches to the definition of 'innovative potential. "

Keywords: innovation potential, high school, method of estimation of innovative potential.

The approaches to the concept of innovative potential [2]

Criterion of classification	Concept of innovative potential
Resource approach	resource pool, providing implementation of innovative activities
Productive approach	quantity of the benefits which the economic entity is capable to make at defined (on quality and structure) resources
Sum of potentials	set of production and technological, labor, financial, orga-nizatsionno-managerial and intellectual poten-

	tials
Opportunities	sets of the used and unused resource opportunities which can be put in action for achievement of the desirable purposes of economic actors
Strategic priorities	measure of a capability and readiness of the economic actor for implementation of innovative activities. At the same time the capability is understood as availability and balance of structure of components of potential, and as readiness – sufficiency of a level of development of potential for forming of innovatively active activities
Binding to concrete level (national economy, region, enterprise, personality, etc.).	- a capability of various industries of national economy to make the knowledge-intensive products meeting the requirements of the world market; - the condition of the entity on a certain timepoint in respect of investment opportunities which is reached and created in the course of innovative development and requires monitoring and an assessment; - set of scientific and technical, production, technological, personnel, infrastructure, financial, legal and other capabilities of accounting entities of the region to provide perception and diffusion of innovations.

In these and other determinations of innovative potential one or several intrinsic characteristics of this phenomenon reveal. In one case the accent is transferred to institutional structures or means of forming of potential, to others there is a binding to specific level, in the third its indirect characteristic, through determination of essence the concept "potential" is provided.

Above and above the designated determinations of innovative potential have the same shortcoming: for characteristics of innovative potential the indicators relating to scientific and technical, production technologically, personnel or to other components of general capacity of the entity or organization are often issued. In such cases actually innovative capacity of the entity is not isolated, not measured and, as a result, purposefully does not develop.

In our opinion the innovative capacity of the higher school is the difficult category characterizing a capability of system to transformation, development. On the one hand, it is the characteristic of the existing resource opportunities, and on the other hand, reflects productivity of process. As the result of development innovative potential becomes at the moment a point to transition to new, more perfect condition, and its analysis reflects information on the course of innovative development of the higher school in dynamics.

The integrated assessment of innovative capacity of the higher school shall be based on the system approach reflecting the results of various fields of activity received taking into account resource providing under the influence of environmental conditions (figure 1) [3].

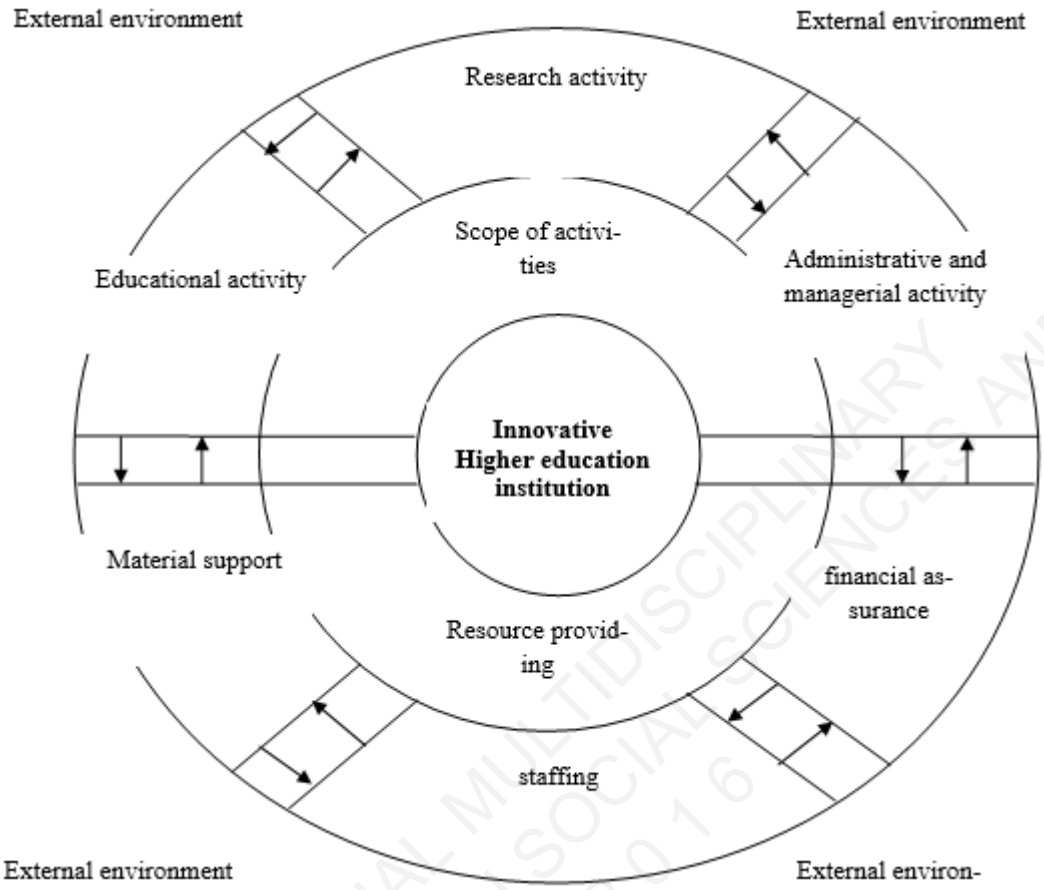


Fig. 1. Innovative Higher Education Institution

As fields of activity are considered educational, research and administrative and managerial. Resource providing includes personnel, material and financial. External environment is understood as regional innovative infrastructure. For each component of innovative capacity of the higher school it is necessary to determine an actual set of indicators. The assessment of innovative capacity of higher education institutions is difficult, first of all, in the choice and reasons for parameters of an assessment of this potential [4].

In case of a quantitative assessment of innovative capacity of the higher school on indicators of an assessment certain restrictions are imposed:

- indicators shall enter the statistical reporting of higher education institution under scientific and technical, educational and methodical and economic activity or be allocated as a result of intra high school managerial accounting;
- indicators shall consider relevant requirements of innovative programs of system of the Ministry of Education and Science of the Russian Federation;
- for accomplishment of the subsequent analysis indicators shall have comparable units of measure;
- shall be determined an order of collection, information processing and analysis of results.

Besides, when forming indicators of an assessment on each component of innovative capacity of the higher school it is necessary to consider that indicators of the world educational market, tools of an efficiency evaluation and comparison of success of activities of higher education institutions are the global ratings creating models and standards of modern university.

Ratings of the best universities of the world are regularly formed various agencies. In much appeal of university to entrants and authoritativeness of the diploma to employers is defined by rating position of this educational institution. Some global ratings of universities and feature of their assessment are listed in table 2.

Table 2

Global ratings of universities and feature of their assessment [5]

Global ratings of universities	Features of an assessment
ARWU (Academic Ranking of World Universities)	at an assessment of universities uses the quantitative indices available through open sources. Considers graduates and employees with the highest indicators of citing, the general index of a quoting and an indicator of a quoting on one employee. It is focused mainly on an assessment of scientific activity of large and widely known research universities of the West
THE (THE World University Ranking)	it is considered one of the most influential global ratings. Using reputation polls, estimates all key functions of modern universities: researches, teaching, transfer of knowledge, international activity, cooperation with universities of the different countries
QS (QS World University Ranking)	estimates quality of researches and teaching, potential of employment of graduates, internationalization. Quality of teaching is ranged on 30 specialties, including mathematics, physics, the right and many others
Web (Webometrics)	estimates presence of higher education institutions at virtual information space and leans on Internet indicators of the university websites
PRSP (Perfomance Ranking of Scientific Papers for World)	estimates leading universities of the world generally from the point of view of research activity, regarding writing of scientific articles

Basis of the listed ratings is not only the correct set of factors, but also the correct scale of weight coefficients. All indicators used in them are rather adequate and transparent.

Process of an assessment of innovative capacity of the higher school can be presented in the form of the scheme (figure 3).

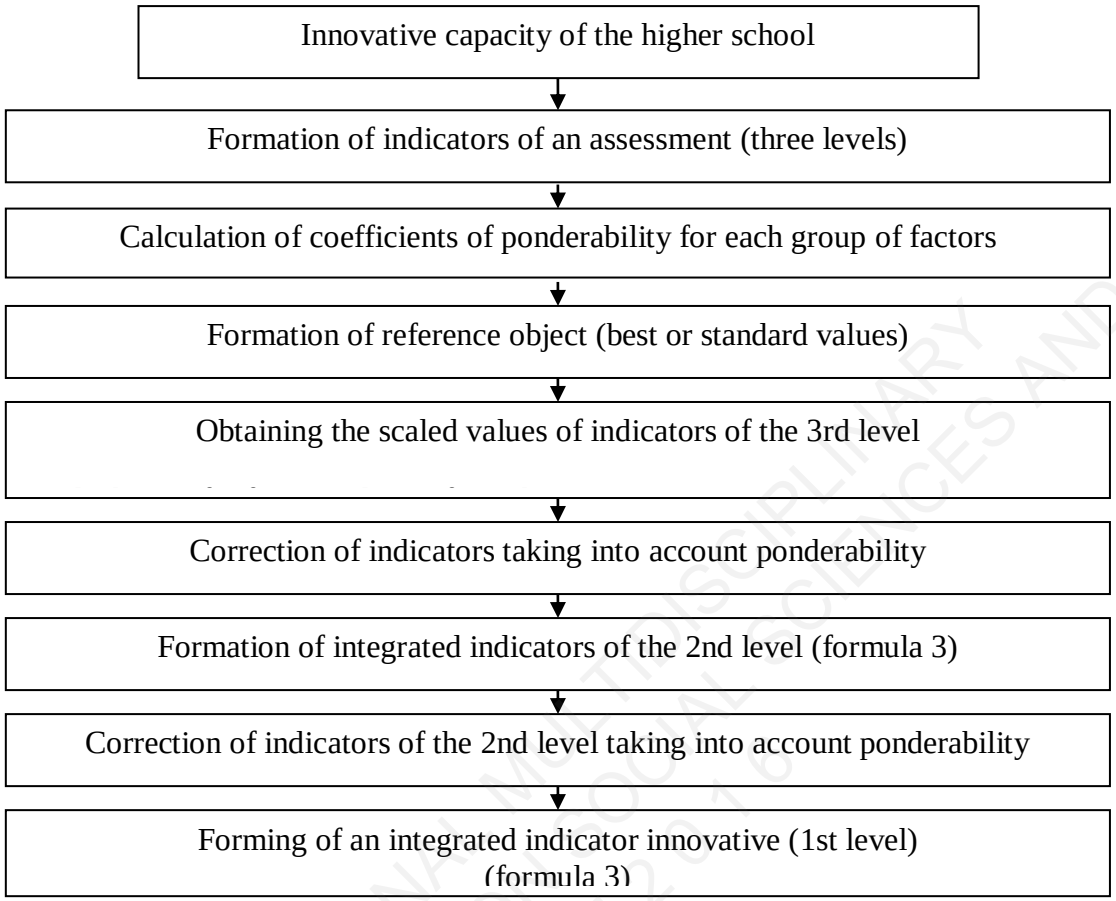


Fig. 2. Scheme of an assessment of innovative capacity of the higher school

All private indicators of the third level have different dimension therefore for their adequate inclusion in process of the analysis and creation of an integrated indicator it is necessary to estimate criteria on a uniform scale. It is necessary to consider also that indicators can play the stimulating role (stimulyanters) and discouraging (destimulyanters).

To the first, for example, the number of the students accepted on the first rate concerns to the second – training costs. Taking into account this factor for scaling it is offered to use formulas (1-2), by analogy with calculation of an index of the human potential used by the UN:

$$Xmij = \frac{Xij - X\min\ j}{X\max\ j - X\min\ j} \quad \text{– for stimulyanters} \qquad (1)$$

$$Xmij = \frac{X\max\ j - Xij}{X\max\ j - X\min\ j} \text{ – for destimulyanters} \qquad (2)$$

where X mij – the scaled value of an indicator of j for higher education institution of i in a year of n; Xij - фактическое значение j-го показателя для i-го вуза в году n; Xminj – the minimum value of an indicator of j for n of years on i to higher education institutions; Xmaxj – the maximum value of an indicator of j for n of years on i to higher education institutions.

In quality it is also possible to offer respectively the maximum and minimum value of criterion of j, proceeding from values of this indicator for n of years on the analyzed objects, that is $X\max j$ = max(Xij за n лет), $X\min j$ = min(Xij for n years).

For formation of an integrated indicator degree of proximity of the actual image to reference pays off on a formula:

$$Yi = 1 - \frac{dio}{Co}, \qquad (3)$$

где $dio = \left[\sum_{j=1}^{n}(xij - xoj)^2\right]^{\frac{1}{2}}$, $Co = x''+2Sd$

$x''= \frac{1}{t}\sum_{i=1}^{t} dio$, $Sd = \left[\frac{1}{t}\sum_{i=1}^{t}(dio - x'')^2\right]^{\frac{1}{2}}$

xij – – property j on object of i;

xoj – realization of property j in reference object.

Thus, the offered technique of an assessment of innovative capacity of the higher school will allow to create a rating of higher education institutions in quantitative measurement and to estimate degree of proximity of this or that higher education institution to reference object. Results of an assessment shall be used for identification strong and weaknesses of object of research and development of strategy of development of a higher educational institution. Conceptual bases of an assessment of innovative capacity of the higher school are applicable in case of development of programs of a strategic development of higher educational institutions, both at the level of the organization, and when forming projects at the federal and regional levels of the public and municipal authority

CONCLUSION

The assessment of innovative capacity of the higher school shall be based on the system approach reflecting the results of activities of object of research having resources and environmental conditions. For each component of innovative capacity of the higher school it is necessary to determine the set of indicators oriented to the global ratings creating models and standards of modern university. The offered technique of an assessment will allow to measure quantitatively the level of innovative capacity of the higher school and can be used in case of development of programs of a strategic development of higher educational institutions.

REFERENCES

[1] Danko M. Innovative potential in the industry of Ukraine /M. Danko // The economist, № 10, pp. 26-32, 1999.

[2] Bobkova N. G. Innovative potential and its essence / http://www.buk.irk.ru/library/sbornik_11/bobkova.pdf.

[3] Emelyanov S. G., Borisoglebskaya L. N., Tsukanova N. E. Integrated estimation of innovative potential of the University, № 6, pp. 93-98, 2006.

[4] Emelyanov S. G., Borisoglebskaya L. N., Tsukanova N. E. Innovative approaches to assessing the quality of function of the educational system // Collection of scientific works on materials of the Russian innovation forum "problems of development of inno-

vative activity in modern conditions". – Kursk: Kursk state technical University; 2006. P. 166-172.
[5] Melnikova E. G., Titova, L. K. Rating as a tool for planning strategic development of the University // Electronic journal of Innotsentr, No. 12, pp. 83-90, 2013.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
S G E M 2 0 1 6

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE EVALUATION OF STRATEGIC ACTIVITIES' IMPORTANCE IN SMALL AND MEDIUM-SIZED ENTREPRISES

Dr. Eva Švandová
Dr. Pavla Odehnalová

Masaryk University, Faculty of Economics and Administration, **The Czech Republic**

ABSTRACT

Small and medium-sized enterprises (SMEs) in the construction industry are facing an economic crisis that they have to cope with. The presence of strategic management supports the competitiveness of the enterprises, as confirmed by numerous empirical studies. The behaviour of the Czech companies is influenced by their communist history and their resistance to long-term planning. So the utilisation of strategic activities within the managing of companies can be lower in comparison with Austria. The purpose of this paper is to examine the factors influencing the level of strategic activities' implementation in SMEs in the Czech Republic and Austria. We have tested the impact of the strategic management utilisation level on the economic results from the earliest. After that, verification of hypotheses between two factors, namely size and perceived environmental uncertainty, and the level of strategic management utilisation is tested. In order to verify the hypotheses, we analysed quantitative data collected by a survey of SMEs in the Czech Republic and Austria in 2012. The statistical comparison of the data from the two countries enables us to test the hypothesis of cultural differences' impact on the level of the strategic activities' utilisation given, either historically or demographically.The results confirm that the level of strategic activities' implementation positively influences the economic situation of the SMEs. The level of strategic activities' implementation is positively influenced by both the size of the company and the perceived environmental uncertainty. But there is a statistically significant difference in the perception of environmental uncertainty between the Czech and Austrian companies.

Keywords: strategic management, environment, small and medium-sized entreprises

INTRODUCTION

Strategic management can be understood as a process consisting of partial activities, such as environmental analysis, formulation of strategy, strategy implementation and monitoring, including the implementation of corrective measures. These partial activities help to transform the plan into its real form and obtain feedback. Strategic management, namely analytical activities, help a company to identify and prepare for future conditions through the analysis and assessment of internal enterprise factors and external environmental factors. The external business environment is changing very fast and the process of strategic management and planning needs to be quickly and flexibly adapted to external changes.

In the construction sector, enterprises had to deal with an overall decline in investment activity, throughout the past seven years, caused mainly by a decline in public sector investment. One can assume that companies that implement strategic actions will achieve better results, considering strategic analysis, planning and the control of business operations. Despite this, completed surveys [1] suggest that it is in small and medium-sized enterprises, which are characterized by informal communications, immediate solutions and a focus on the immediate execution, where strategic

management is not very often used. The question is what the underlying cause of this is and to what extent is this fact critical for improving competitiveness? The purpose of this paper is to examine the factors influencing the level of strategic activities' implementation in SMEs in the Czech Republic and Austria. The factors tested were both the economic situation of the company, as well as the size of the company and perceived uncertainty of the environment. The country of operation of the company was included in the analysis. The statistical comparison of the data from the two countries enables us to test the hypothesis of cultural differences' impact on the level of strategic activities' utilisation given, either historically or demographically.

In order to verify the hypotheses, we analysed quantitative data collected by a survey of SMEs in the Czech Republic and Austria. Data was collected in the years 2012-2013 within the framework of the European research project under the name of "Cross-border Cooperation of Construction Enterprises of South Moravia, Lower Austria and the City of Vienna" was carried out

THEORETICAL BACKGROUND AND HYPOTHESES

Many studies have indicated the existence of a direct link between strategic planning and business success [2][3][4][5]. Businesses that are able to map better the environment they are operating in are more responsive to external stimuli and able to anticipate new situations. It can be assumed that companies that use strategic management will have a better estimate of the real economic situation of the company. Many studies [4][2] also state that strategic planning helps businesses to achieve better financial results. The question is whether companies are able to develop strategic activities, if they themselves are in a phase of economic decline.

There are studies stating that companies that plan strategically grow faster and are able to prevail on the market for a longer time [6][7]. For this, resources are needed. We assume that firms that do not address their economic situation have the capacity to pursue not only operational activities that address the acute shortage, but also strategic activities. This means that growing businesses have a greater opportunity to develop strategic activities. Irrespective of a causality relationship, which is not possible to confirm within quantitative studies, we believe that *the extent of the use of strategic management and strategic management activities is related to the economic performance of the enterprise (H1).*

Strategic planning is affected by the size of the enterprise [8][9]. Greiner [8] states that if a company gets to a certain stage, when merely an informal approach to business management is not enough, the number of employees grows, as well as revenue, there is a leadership crisis. The solution is particularly to formalize the existing procedures, which includes strategic management. Robinson and Pearce [2] state that strategic planning, together with management, is underestimated in small and medium-sized enterprises. As the main reasons why SMEs are planning less than large enterprises, the authors provide a variety of factors. This is particularly the restrictions that strategic planning brings entrepreneurs in the form of a reduction in flexibility and ability to improvise. Strategic planning for them is unnecessary bureaucracy that hinders entrepreneurial activity, and, instead, they focus their efforts on areas where they are quickly recouped, such as sales and innovations [10]. Another explanation is related to education in the field of strategic management, especially for small and medium-sized enterprises and the low number of companies that offer quality advice on strategic planning [11]. Strategic Management in SMEs is, therefore, based more on intuition, experience and estimation [12], rather than a formal plan. On that basis, it can be

assumed that *the extent of implementation of strategic management will be positively influenced by the degree of implementation of strategic management and its activities (H2).*

Kraus et al. [10] state that studies dealing with strategic planning suggest a different approach to strategic planning in different countries. In connection with the Czech Republic, we must not forget the historical fact being the long-term influence of the planned economics of the communist regime on the existence of enterprises. This is related to the resistance and distrust in the multi-annual plans in the case of the current generation of 50-year-old owners. In terms of issues examined, it, therefore, seems advisable to examine the different approaches to strategic management between the two countries of Austria and the Czech Republic. Following the mentioned investigations and following the divergence of national cultures, there is an assumption that the approaches of companies within the countries surveyed will be [11]. On this basis, it can be assumed that *Austrian companies are implementing more strategic control than Czech enterprises (H3).*

Füglistaller et al [13] consider setting strategic plans and strategic management to be a crucial part of management, especially where there is an uncertain environment and the growing dynamics of the environment. The external environment is regarded by the authors as one of the fundamental factors of a so-called Contingency theory. Businesses respond to changes in the environment by a change in structure and strategy. This suggests *that if there is a perception of the environment being highly uncertain, companies tend to implement a higher amount of strategic management (H4)*.

RESEARCH METHODOLOGY

The data was obtained from the survey "Development of Small and Medium-sized Construction Enterprises within the South Moravia and the Vienna Regions", conducted in 2012 and 2013. The survey sample contained small and medium-sized construction companies from Austria and the Czech Republic. The data was gathered through a questionnaire. The responses were given by managers of companies that were aware of the complex functioning of the enterprises. For this paper, we used 279 Czech and Austrian companies from the survey. The study is based on a quantitative approach. The focus on one sector (construction) allowed us to avoid the misrepresentation of the different characteristics of the sector [8][14].

A suitable indicator of the economic performance of the firms can be considered the return on sales (ROS_2012_CZ). Due to the unavailability of financial indicators for the sample of Austrian companies, a questionnaire variable estimate of the economic situation of the company (x1_ecsit) will be used. This is an ordinal variable that takes three values (1- firms with declining performance, 2 - stable companies, 3 - companies with rising performance). To test the suitability of this indicator, the knowledge of the financial data of the Czech businesses was used. The estimating of the economic situation of the company is highly correlated with the return on sales (Pears = 0.490, Sig 0.000, N = 140).

The strategic orientation of a company refers to the level of regular use, therefore, implementation of strategic actions by the enterprise. It is an artificially created variable that was created by using principal component analysis. Items included in the analysis were the following strategic activities: strategic analysis of the environment (analysis of market, industry, competition), strategic planning, operational planning, implementation of preventive measures, comparing the objectives and the real situation, reporting

results to decision makers, and the monitoring of actions and budgets. (KMO = 0.83; Bartlett's test sig. = 0.000). The resulting variable indicates 69% of the variance.
The size of a company is measured by the number of employees (x3_noemployees) and the amount of assets (x4_totassets). The uncertainty of the environment is in the present study represented by the dynamics of change in the environment (economic and political, technical) and changes in industry structure. These variables are measured by a questionnaire on a 5-grade scale (1 = most problematic, 5 = least problematic).

RESULTS

Enterprises implementing strategic management are enterprises with greater economic efficiency (Pears.Correlation = -0.182, Sig. = 0.008, N = 214; Spear.Rho = - 0.203, Sig. = 0.003, N = 214). In the case of a return on sales (ROS_2012_CZ) and, therefore, the sample of Czech firms, a positive relationship between the implementation of strategic management (x2_strator) and performance was confirmed (Pears.Correlation = -0.311, Sig. = 0.001, N = 111). It is, therefore, possible to confirm the hypothesis H1 and say that implementation of the strategic management activities is associated with a higher business performance.
It is not possible to determine clearly the causality of the relationship between the performance and strategic direction with respect to the same year of data collection (2012). Causality can be verified by testing the relationship between the implementation of strategic activities in 2012 and the return on sales in the following year 2013 on a sample of Czech firms. Even in this case, there is a statistically significant linear relationship between the variables (Pears.Correlation = -0.281, Sig. = 0.004, N = 105).
With economic performance, whether measured by an estimate (x2_ecsit) or by financial performance (ROS_2012_CZ), statistically significantly correlated the four following activities, strategic analysis, strategic planning, implementation of preventive measures and the monitoring of preventive actions. In the case of financial performance, there was a correlation with all the strategic activities (see the Table 1).

Table 1: The influence of the implementation of strategic management on the economical state of an enterprise (H1)

		Strategic analysis	Strategic planning	Implementation of preventive measures	Monitoring of preventive measures and actions
ROS_2012_CZ	Pears.Cor.	-0.263	-0.222	-0.182	-0.254
	Sig. (2-tailed)	0.004	0.016	0.05	0.005
	N	118	117	114	122
x1_ecsit	Spearman Cor	-0.155	-0.202	-0.201	-0.207
	Sig. (2-tailed)	0.019	0.002	0.002	0.001
	N	228	227	229	235

It is interesting to look at the results of the analysis when the country of the enterprise's activity is involved. Strategic analysis of the environment and strategic planning are associated with a better economic situation only in the case of Czech firms. On the contrary, the implementation of preventive measures is effective in terms of economic performance only in the case of Austrian companies. Monitoring the results of preventive measures is important for the economic situation of enterprises, regardless of their country of origin.

Table 2: The relationship of the economic situation and the strategic actions by country of operation

x1_ecsit	Strategic analysis	Strategic planning	Implementation of preventive actions	Monitoring of preventive actions and budgets
AUT	-0.062	-0.093	**-0.224**	**-0.202**
	0.553	0.377	0.026	0.05
	93	93	99	95
CZ	**-0.185**	**-0.225**	-0.099	**-0.233**
	0.032	0.009	0.264	0.006
	135	134	130	140

To test hypothesis H2 about the relationship between company size and the degree of the implementation of strategic management, a Pearson correlation coefficient was used—the value of which confirms a moderate relationship between the variables, regardless of whether the size is expressed by the number of employees (Pears. Corelation=-0.348, Sig=0.000, N=214) or total assets (Pears. Corelation=-0.214, Sig=0.024, N=111). The H2 hypothesis can be confirmed.

Different approaches to corporate governance, and, therefore, the rate of the utilization of strategic management activities, may be associated with the existence of different national cultures. This fact is confirmed in the case of Austrian and Czech companies. Austrian companies have stronger tendencies to implement strategic actions in comparison with the sample of Czech firms. The relationship was tested by the t-test. The biggest difference was present in the case of the implementation of preventive measures. The H3 hypothesis about the extent of implementation of strategic management in connection to the country in which the company operates can be confirmed.

Table 3: Strategic activities implementation – comparison of CZ and AUT enterprises

T-test for Equality of Means	Strategic analysis	Strategic planning	Operative planning	Implementation of preventive actions	Comparing targets with realization	Reporting	Monitoring of preventive asctions
Sig. (2-tailed)	**0.042**	**0.000**	0.102	**0.000**	0.241	**0,000**	0.992
Mean Differe	-0.322	-0.576	-0.258	-0.887	-0.183	-0.63	-0.002

The influence of uncertainty on the environment on the implementation of strategic management, and, therefore, hypothesis H4, can, in the examination of the entire sample of companies, be confirmed. The results indicate that the level of implementation of strategic control is influenced by the dynamics of the environment and changes in the structure of the sector. Most of these results are obvious in the case of economic and political environment dynamics.

SCIENTIFIC CONFERENCE INTERNATIONAL DAYS OF STATISTICS AND ECONOMICS

Table 3: Uncertainty of the environment and strategic activities

		x2_strator	Strategic analysis	Strategic planning	Implementation of preventive provisions	Reporting of the results
Industry structure change	Pears.	0.09	**0.189**	**0.136**	**0.184**	**0.169**
	Sig.	0.209	0.007	0.051	0.008	0.016
	N	196	206	206	210	203
Technical requirements dynamics	Pears.	0.039	**0.064**	**0.194**	**0.21**	0.127
	Sig.	0.575	0.355	0.004	0.002	0.066
	N	205	213	214	217	212
Political and economical environment	Pears.	**0.184**	**0.159**	**0.18**	**0.16**	**0.152**
	Sig.	0.007	0.017	0.007	0.016	0.024
	N	212	224	224	227	219

Let's look at the results, if we include the geographic origin of the enterprises into the analysis of the factors influencing the extent of implementation of the strategic management. In the case of Czech firms, there is a correlation between strategic management and the uncertainty of the environment only in two activities—strategic analysis and strategic planning. While only one relationship is statistically significant—that is the one between the strategic analysis and dynamics of the political and economic environment. On the other hand, in the case of Austrian companies, this relationship was not confirmed. It is, therefore, appropriate to modify hypothesis H4. There is a relationship between the implementation of strategic activities and the uncertainty of the environment in the case of Austrian companies. In the case of Czech firms, there is a statistically significant relationship between the environment and the uncertainty of the two activities of strategic management—those being strategic analysis and strategic planning.

4: The relationship between the dynamics of the environment and strategic activities by country of origin

		Strategic analysis	Strategic planning	x2_strator
AUT_Political and economical environment	Pears.	0.132	0.171	**0.344**
	Sig.	0.207	0.102	0.001
	N	93	93	87
CZ_Political and economical environment	Pears.	**0.167**	**0.18**	0.103
	Sig.	0.056	0.04	0.252
	N	131	131	125

In the case of the analysed enterprises, the Austrian business environment is perceived as more dynamic in the field of technical requirements and more easily subject to changes in the structure of the sector in comparison with Czech companies. In the case of the political and economic situation, there is no significant difference (tested by the t-test).

DISCUSSION

The analysis performed confirmed the relationship between business performance and the implementation of strategic management (H1). Successful companies are more often implementing strategic management and its activities. When using financial "objective

data" (ROS), the assumption that strategic management leads to improved corporate performance can be confirmed. That confirms the studies by Robinson and Pearce, [4] and Schwenk and Schrader [4]. There is an interesting difference in the implementation of strategic activities when we look separately at Austrian and Czech companies. Strategic planning and strategic analysis of the environment are mainly linked to the economic performance of the Czech companies—implementation of preventive provisions then, on the contrary, exclusively to Austrian companies. From this perspective, research that indicates that nearly half of the SMEs in Austria and Switzerland, generally, do not plan strategically [15] is interesting. Nevertheless, it should be noted that Czech businesses less often implement strategic management and individual activities in comparison with Austrian firms (H3). This may be explained by the communist history of the Czech Republic and the resistance of managers towards long-term planning activities. A significant difference, however, exists even with other strategic activities. The problem of the low implementation of strategic management in Czech companies could also be caused by different perceptions of the dynamics of the environment. The Czech business environment is perceived as being less dynamic and not subject to changes in the structure of industry, compared with Austrian companies. In the case of Austrian businesses, the uncertainty of the environment is associated with higher rates of the implementation of strategic activities. Czech companies, under the influence of the uncertain environment, predominately implement strategic analysis and long-term strategic planning (H4). An enterprise's size has an impact on the use of strategic actions. However, it is necessary to clarify that the relationship was tested in small and medium-sized enterprises (H3).

CONCLUSION

Czech companies implement less strategic management in comparison with Austrian companies. This may be due to historical experience with communism and opposition to long-term planning. Another explanation could be in the study the observed fact that the Czech business environment is perceived as less uncertain, therefore, without the need to apply strategic management activities. The question is whether it is not the low implementation of strategic activities that leads to an erroneous perception of the insecurity of the environment by the Czech businesses. However, the Czech businesses achieve a higher economic performance, precisely due to the activities of strategic management, mainly strategic environment analysis and strategic planning. Inversely, in the case of Austrian companies, strategic analysis and planning do not lead to a higher economic performance. This fact may be affected by the aforementioned fact that the Austrian companies perceive the environment as more uncertain. For this reason, most of the Austrian companies consider strategic analysis of environment and planning to be important. Implementation of strategic management, in the case of the Czech firms, can be a competitive advantage. In the case of the Austrian companies, this fact has not been confirmed, except for the activities of the implementation of preventive measures, which, specifically, in the case of the Austrian companies can be a competitive advantage. Regardless of the origin of an enterprise, the relationship between company size and the level of the utilization of strategic activities in the company can be confirmed.The results of our study stress the necessity to change the thinking of strategic activities' utilisation by Czech managers in small and medium-sized enterprises in the construction industry.

REFERENCES

[1] Záthurecký, V., Kessler, A., Schweiger, C., Odehnalová, P., Richter, J., Schmid, J., Schöllauf, V., Kostík, P., Švandová, E., Marinič, P., 2013. Rozvoj malých a středních podniků v příhraničních oblastech : Výsledky uskutečněného výzkumu. Masarykova univerzita.

[2] Robinson Jr., R.B., Pearce II, J.A., 1984. Research Thrusts in Small Firm Strategic Planning. Academy of Management Review 9, 128–137.

[3] Bracker, J.S., Keats, B.W., Pearson, J.N., 1988. Planning and Financial Performance Among Small Firms in a Growth Industry. Strategic Management Journal 9, 591–603.

[4] Schwenk, C.B., Shrader, C.B., 1993. Effects of Formal Strategic Planning on Financial Performance in Small Firms: A Meta-Analysis. Entrepreneurship: Theory & Practice 17, 53–64

[5] Rue, L.W., Ibrahim, N.A., 1998. The Relationship between Planning Sophistication and Performance in Small Businesses. Journal of Small Business Management 36, 24–

[6] Castrogiovanni, G.J., 1996. Pre-Startup Planning and the Survival of New Small Businesses: Theoretical Linkages. Journal of Management 22, 801.

[7] Shane, S., 2004. A General Theory of Entrepreneurship: The Individual--Opportunity Nexus (Book). International Small Business Journal 22, 206–209.

[8] Greiner, L.E., 1972. Evolution and revolution as organizations grow. Harvard Business Review 50, 37.

[9] Matthews, C.H., Scott, S.G., 1995. Uncertainty and Planning in Small and Entrepreneurial Firms: An Empirical Assessment. Journal of Small Business Management 33, 34–52.

[10] Kraus, S., Reiche, B. S., & Reschke, C. H. , 2007. Implications of strategic planning in SMEs for international entrepreneurship research and practice. European Research and Practice, 32(6), 110-127.

[11] Florea, R., Florea, R., 2014. Particular Aspects Regarding Strategic Management Implementation in Romanian SMEs. Economy Transdisciplinarity Cognition 17, 30–34.

[12] Welter, F., Smallbone, D., 2003. Entrepreneurship and enterprise strategies in transition economies : an institutional perspective. ResearchGate 95–114.

[13] Füglistaller, U., Frey, U., Halter, F, 2003. Strategic Management for SMEs: A practical guide. St. Gallen: KMU HSG. Fuller, T. andLevis, J.(2002)"Relationships mean everything: a typology ofsmall business relationship strategies inareflexive context," British Journalof Management, 13, 317-36.

[14] Odehnalová, P., 2011. Přednosti a meze rodinného podnikání. Brno : Masarykova univerzita.

[15] Fröhlich, E., Pichler, J.H., 1988. Werte und Typen mittelständischer Unternehmer. Duncker & Humblot.

SCIENTIFIC CONFERENCE SGEM 2016 INTERNATIONAL MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS

THE FACTORS AND POSSIBILITIES OF CROSS-BORDER CLUSTERS DEVELOPMENT IN A COASTAL ZONE OF RUSSIA OF THE BLACK AND THE BALTIC SEA

Prof. Dr. Alexander G. Druzhinin[1]

PhD. Stanislav S. Lachininskii[3]

PhD. Andrey S. Mikhaylov[1,2]

[1] North Caucasian Research Institute of Economic and Social Problems, Southern Federal University, **Russian Federation**
[2] Immanuel Kant Baltic Federal University, **Russian Federation**
[3] Saint-Petersburg State University, **Russian Federation**

ABSTRACT

The article presents the research results of the network project on "Cross-border clustering in the dynamics of economic and residential systems of coastal areas of European Russia" implemented by the scholars of four leading universities of Russia with the financial support of the Russian Science Foundation. The study is focused on geospatial identification, socio-economic parameterization and structuring of the coastal zone of Russia. The detailed characteristics of its most important segments – the Baltic and the Black Sea-Azov coastal zones, are given. The main factors of formation of the long-term, permanent and tactical (i.e. associated with the crisis processes and changes in the geopolitical and geo-economic situation) cross-border clusters in the coastal areas of Russia are analyzed. An inventory of the most important cross-border clusters, localized in the Kaliningrad, Leningrad, Rostov and Krasnodar regions is carried out. Their impact on the regional economy and the dynamics of the settlement system is evaluated.

Keywords: cross-border cluster, coastal zone, maritime cluster, Black Sea, Baltic Sea

INTRODUCTION

The competitive environment created by globalization and regionalization gives rise to the poles of increased foreign trade, transport and logistics and industrial activity – the cross-border clusters in the most 'contact areas', including coastal territories. In a recent publication, we noted that "by its spatial configuration the coastal zone is primarily a band [i.e. an elongated area], characterized by high density of population, settlements and economic activity" [1]. Researchers have shown that "the density of the coastal population is 2.5 times higher than the global average density" [2].

However, in Russia, this situation is typical only for the 'coastal zone' of the Russian South (60.5 pers. per km²), which is 2.3 times higher than of the 'other' isolines of the macro-region (26.3 pers. / km²) and the Russian coast of the Baltic Sea, located away from the 200-km zone [3]. In this case, as opposed to the coastal urban areas of North America and East Asia, the thalasso attractiveness of large urban settlements in the Russian Federation, and even more of the urban areas, is an exception (in the case of St. Petersburg and Rostov-on-Don). In general, Russia remains out of the global trend to

expansion of 'coastal urbanization', which to a large extent due not only to the traditional continental preference in the localization of the population, populated areas and economic potential, but also with the lack of formation of components of maritime complex, with weak, largely latent presence of cross-border clusters in the coastal zone.

APPROACHES AND METHODS OF RESEARCH

Maritime zone, given its geo-economic, socio-economic, transport, and environmental value, is an important subject for the complex geographical and regional studies. Approaches to its delimitation are diverse (see [4]). For example, S. Salnikov [5] argues for applying a distance of 80 km from the coast in the course of determining the coastal zone. Other authors have adhered to a landmark in the distance of 50-200 km [6]. S. Humphrey and P. Burbridge [7] suggest that criteria for determining the boundaries of the coastal zone may be presented in three categories: the linear-geometric, legal-administrative, and natural-environmental criteria. Thus, the indicator of the remoteness from the coast is very relative and in many respects should be adjusted in accordance with the structure and level of development of particular maritime complex, the borders of the 'littoral' municipalities.

Allocation of maritime type of cross-border clusters (traditionally regarded as geographically co-located groups of economic actors [8]) is based on their genesis, structure, and specialization. A significant criterion is geographical (i.e. spatial) proximity of the cluster to the coast. In this article we consider both the real, established cross-border clusters and the potential (i.e. latent) clusters, whose formation seems appropriate and feasible, but is limited by the current geoeconomic and geopolitical conditions.

CROSS-BORDER CLUSTERIZATION IN THE RUSSIAN EXCLAVE ON THE BALTIC SEA (KALININGRAD REGION)

Of particular importance the cross-border clustering and thalasso attractiveness plays for Kaliningrad oblast – the Russian exclave on the Baltic Sea. The total length of the state land border of the region is 512.5 km, of which 280.5 km with the Republic of Lithuania in the north and east, and 231.9 km with the Republic of Poland in the south, as well as the 183.6-kilometer coast of the Baltic Sea. Most municipalities of the Kaliningrad oblast are bordering (5 of 9 municipal districts, 4 of 6 districts and 2 of 7 urban districts). Moreover, 5 municipal districts, 2 districts and 6 urban districts have the coastal area. In general, the entire territory of the Kaliningrad oblast can be attributed to the coastal zone as defined earlier, at the same time the production-population distribution system has its specific characteristics.

Following the historic specialization, a tourist cluster forms the basis of the coastal belt (from 0 to 50 km inland zone) that covers the entire territory of the Kaliningrad Peninsula. The cluster is characterized by stable dynamics thanks to well-developed infrastructure, a certified world-class beaches (urban district "Yantarny"), the presence of national park "Curonian Spit", listed as a UNESCO world heritage site, and one of the world's largest amber deposits.

Active institutional support to the tourism cluster development from the state authorities implemented since 2000, when the measures to support environmental and rural tourism were adopted. Based on the second most significant specialization of the territory – agriculture, largely provided by private farmlands (typically based on the estates of pre-

war construction period), the regional administration (now the regional government) supported the expansion of the tourism cluster 'deep' in to the region inland territories, diversifying beach and wellness tourism by other types. Overall results of the implementation of this program has been allocation of more than 30 tourism placements in Zelenogradsk, Gvardeysk, Nesterovskoe, Ozersk districts and Guryevsk, Polessk, Neman, Slavsk municipal districts, covering a large part of the region.

Further impetus to the tourism cluster development were large infrastructure projects on the construction of federal highway "Maritime Ring" (2008) that united the territory of "Coastal functional recreational zone", the state affairs management residence of the President of the Russian Federation "Yantar" (2008) with landscaped promenade in the town of Pionersk, as well as construction and reconstruction of promenades in all the recreational centers of the region – Zelenogradsk, Svetlogorsk, Yantarny, Baltiysk. A further impetus to the tourism specialization has given the RF Government Decree №470 "On approval of the list of territories of the Russian Federation with limited entry for foreign citizens" in 2012, which almost completely opened up the opportunities for tourists to visit the Baltiysk city settlement, with the preservation of its functions as the only naval base in Kaliningrad oblast. This decision largely allowed to approach the development of cross-border tourism clusters in with the Republic of Poland. From December 2012 to May 2015, the Polish and Russian partners have implemented a mutual project entitled "Opportunities and benefits sharing Kaliningrad / Vistula Lagoon" financed under the framework of the Cross-border Cooperation Programme Lithuania-Poland-Russia 2007-2013. One of the initiatives of this project was "Coastal ring road" – a combined water and land route along the coastal tourist towns of the two countries.

Among developing industrial clusters in the eastern part of the region, located at a relative distance from the Baltic Sea, are furniture, engineering, ICT, construction and others. The structure of these clusters is heterogeneous, thus, it is impossible to form a unified understanding of the ways and prospects of their internationalization. For example, the interactions within the automotive and ICT clusters are built on the 'hub-and-spoke' principle [9] (i.e. the radial pattern). In this regard, the internationalization of the cluster will most probably lead to the formation of a 'global value chain' or a 'global production network', in the case of the involvement of universities and other academic institutions in the R&D process. Access to international markets of the individual actors of the regional textile cluster has initiated the formation of 'satellite platforms' [9] of interaction, in which the cluster members receive additional development through integration into the supply chain of large TNCs, such as Ikea.

The greatest prospects for cross-border clustering, in addition to the formation of a unified recreational zone of Kaliningrad / Vistula lagoon and the Curonian lagoon (the Baltic and the Curonian Spit), have high-tech areas, such as information technology [10]. 'GameDev' – the development of computer games, is one of the most developed areas of the regional IT market, combining under its auspices a substantial number of small and medium-sized firms. The temporary stagnation of the regional amber cluster can also be transformed into a cross-border network the collaboration with Polish masters of jewelry, while the scientific developments of the Kaliningrad State Technical University suggest amber as raw material in the field of pharmacology and cosmetology.

FACTORS AND FEATURES OF CROSS-BORDER CLUSTERS IN ST. PETERSBURG COASTAL REGION (SPbCR)

St. Petersburg coastal region (concentrating 6.88 mln. people and covering the territory of 110.5 thousand sq. km [4]), includes St. Petersburg and the Leningrad oblast, occupying a unique place in the territorial structure of Russia. In fact, it combines all three types of growth territories: one of the country's two largest agglomerations (Greater St. Petersburg – approx. 6 million people); export-resource region, through which pass the three major energy bridges to Europe – "Nord Stream" and "Baltic Pipeline System – 1 and 2"; port border region on the main routes of foreign trade (the presence of two state borders with EU countries – Finland and Estonia, as well as a significant turnover of seaports).

The coast line of Russia along the Gulf of Finland is more than 500 km, in which 'strung' the following ports: "Commercial Seaport Ust-Luga", "Big Port of St. Petersburg", LLC "Transneft – Port of Primorsk", LLC "Port of Vyborg", LLC "Port Vysotsky" and the "Bronka" out-port under construction. Note that these ports 'pull together' the maritime zone (total cargo turnover amounted to 218.8 million tons, or 32.8% of the national turnover in 2015), for which they are organizing centers of a second-order. At the same time, the Big Port of St. Petersburg is the organizing center of the first order for all SPbCR. SPbCR ports are endpoints of the Russian sections of international transport corridors 'East-West' and 'North-South'.

A significant impetus to the development of the coastal territory was given in 1980-2000-ies. A large-scale infrastructure project across the Gulf of Finland has become a complex of protective structures (CPS), whose construction began in 1979, but finished only in 2011. Starting the CPS enabled to complete the ring road around St. Petersburg (A118, construction started in 1998), and to create preconditions for the development in the future. Many settlements of the coastal zone have received impetus to develop marine economic activities, including tourism and recreation, port, transport and logistics functions. Noteworthy, the population density in the coastal zone decreases with the increasing distance from St. Petersburg: in the Morskie Vorota municipality it reaches 12.6 thous. per sq.km, Sosnovaya Polyana municipality – 5.6 thous. per sq.km, the town of Lomonosov – 1 thous. per sq.km, the village of Bolshaya Izhora – 168 thous. per sq.km, and in Ust-Luga rural settlement – 8 thous. per sq.km. At the same time, 50-kilometer along the coastal zone outside the urban core, only a few detached spots of urbanization and economic activity can be observed.

Further prospects and development opportunities of SPbCR's ports relate to the transport and logistics, and port and industrial areas in the coastal zone, within 50 km from the sea. The first 'dry port' in the territory of the Russian Federation became JSC "Logistics-Terminal" (Shushary, St. Petersburg). Its capacity approximates to 200 thousand TEU. In addition, to the east of the city, 35 minutes from the port, a multi-transport-logistics complex LLC "Logistics Park «Yanino»" is running with a designed capacity of 400 thousand TEU of a year in terms of the terminal container handling.

The aforestated features define a special regime and a corridor of opportunities for development of cross-border clusters in the SPbCR. The following factors can be distinguished for the development of cross-border clusters in the region:

- The presence of the state border with Finland, as well as long-term Russian-Finnish economic and trade cooperation in the investment sphere (the volume of

Finnish investments in St. Petersburg exceeded 4 billion Euro in 2014) and the institutionalization of this cooperation (group of Finnish Advisors at the Government of St. Petersburg);

- Active integration in cross-border forms of co-operation in the Baltic Sea (according to Urpo Kivikari, in the Eastern Baltic Sea region we can speak of the formation of the Eastern Baltic growth triangle, including Southern Finland (Helsinki), Estonia (Tallinn), Saint-Petersburg and Leningrad oblast [11]);
- Development of the St. Petersburg metropolitan area as the ground for the formation of inter-regional clusters along the Ring Road;
- Active cluster policy of the Government of St. Petersburg, which had already led to the establishment of regional clusters already operating (medical and pharmaceutical, shipbuilding, plastics, aerospace, arctic, IT, S&T and other);
- High research, production, scientific, and educational potential of St. Petersburg and the surrounding satellite cities (Gatchina, Sosnovy Bor). The share of high-tech and knowledge-intensive sectors in the formation of GRP, reaching at least 25% by the year 2030 (2012 – 15.6%) [12];
- The industrial potential and availability of land plots with prepared engineering infrastructure (St. Petersburg retains a high role of industrial production – 20.7% of GRP against 5-7% for London and Paris). At the same time there is the restructuring of industrial production. There are companies of the V and VI technological structures (for example – Biocad, Radar MMS, Polysan, Microtrac Inc., Retsch, and the creative sector of the economy is gradually forming).

It should be noted that the IT cluster has formed in St. Petersburg spontaneously, without government interference. This was possible thanks to the high critical mass of initiative and enterprising professionals (in the city are concentrated 40% of Russian programmers working with development centers of foreign IT companies).

According to the development strategy until 2025, a total number of ten clusters will have to appear in the Leningrad oblast – the automotive industry cluster, and the cluster of medical, pharmaceutical, and radiation technologies. Among the potential – clusters in the field of shipbuilding, food industry (including agro-industry), building materials, timber industry, transport and logistics, petrochemical, defense industry, children's products industry, tourism and recreation.

Among the successfully developing regional cross-border clusters in the SPbCR are: Vyborg-Helsinki (as part of "United Shipbuilding Corporation" two companies cooperating in the shipbuilding industry); Svetogorsk (within the framework of inter-enterprise cooperation of pulp and paper industry interact CJSC International Paper (USA); Walki Group (Finland), JSC Group Ilim (Russian Federation)). In addition, construction of oil supply complex of the Neste Oil company (Finland) in 1997 on the southern shore of the Gulf of Finland (Bronk), led to cooperation of Neste Oil (Finland), Lukoil – North-Zapadnefteprodukt (Russia), Ltd. KINEF (Russia). These cross-border clusters, in fact, transform the surrounding geographic space, filling it with geo-economic content (see: [13]).

CROSS-BORDER CLUSTERS IN THE COASTAL ZONE OF THE RUSSIAN BLACK SEA

If we look at the Russian Black Sea coast as a 'band' of directly adjacent localities to the sea, then (since March 2014) it applies to the territory of the three subjects of the Russian Federation (Krasnodar krai, the Republic of Crimea and Sevastopol), bringing together, at the same time, 12 cities and 13 rural administrative districts with a total area of 32.7 thousand sq. km and a permanent population of 3003 thousand people. This densely populated (almost 92 people per km², with a similar average indicator for the Krasnodar krai by 72.2 people and Rostov oblast – 42.5 persons / km²) and, in general, highly urbanized, relatively infrastructure-rich territory [14].

The actual coastal zone (i.e. the area with a strong influence of the maritime complex and a manifestation of a variety of thalasso attractiveness effects), of course, goes beyond the 'framework' of the actual coastal municipalities. In the situation of the Russian Black Sea coast it is expedient to delimit the coastal zone at a distance of up to 150 and even 200 km from the coast [15], including the whole of Crimea, the city of Krasnodar (one of the two major urban centers of the South of Russia, confidently approaching the status of 'city-millionaire'; motorway stretches only 122 km to Dzhubga and 151 km to Novorossiysk), the city of Goryachiy Kluch, as well as Abinsk, Crimea, Severskiy and Slavic districts of the Krasnodar krai. The total area of the coastal zone of the Russian Black Sea coast reaches up to 48 thousand square kilometers and the total population – 6.5 million people.

In the 1990s in the Black Sea region (in both its Russian and Ukrainian parts) the actual degradation affected the components not only of the maritime complex, but in general the whole economy. This process coincided with intense (5-10 ppm) natural population decline that has reduced almost to zero any visible manifestations of thalassoattractiveness, focusing them on the few territories (Novorossiysk and partly the Tuapse) that partially preserved their socio-economic potential (thanks to the increasing export-import activity).

Since the beginning of the 2000s, economic status of coastal areas (primarily under Russian jurisdiction) has been restored at the expense of parallel operation of a number of factors:

- growth in the transport and logistics activities (the most pronounced in Novorossiysk and Tuapse, but also observed in the main Crimean ports);
- increase in the living standards of individual social population strata and, consequently, the demand for the proposed tourist products of the seaside resorts, which has not only partly reanimated the already existing network of health resorts facilities, but also triggered a substantial investment of households in the creation of 'gray' accommodation facilities, strengthening the manifestations of self-employment and mono-specialization along the entire band of the seaside settlement;
- increase (due to favorable conditions in the energy markets) in capacity of the 'budget economy' of the Russian Federation, including targeted investments in the modernization of the infrastructure of a number of the most important recreational areas (the city of Sochi in particular);

– migration inflows (including financially secure retirees from the northern regions of Russia), further stimulating the growth of housing construction, has become one of the most important 'drivers' of socio-economic development of the coastal zones (primarily for the Russian part of it).

Recovery trends in the economy corresponded with the migration attractiveness of coastal settlements, producing and multiplying the increasingly tangible manifestation of thalassoattractiveness.

Already since the beginning of the 2000s, seaside territories of the Krasnodar krai fully demonstrated their demographic (and, consequently, the overall socio-economic) attraction, and their population growth is almost entirely due to migration. It is also significant that in the last few years (in the context of the increased birth rate) it is still the migration component that provides up to 90% of population growth, providing, for example, such settlements as Novorossiysk, Anapa and Gelendzhik with 5-6 thousand new residents each year. With a delay of 5-7 years (but not so boldly), similar effects became evident on the Crimean coast (in its major urban centers), resulting not in growth but stabilization of the population of coastal towns of the peninsula by the end of 'zero' years. At the same time, over the last decade of all the cities of the Crimea only the Sevastopol and Sudak experienced positive demographic trend. This greatly contrasted with the situation in the Krasnodar krai, where all the coastal areas have managed to implement their socio-economic potential generated by the coastal factor, acquire (including through measures for the preparation of the XXII Winter Olympic Games in Sochi) features of the development band.

Formation of cross-border clusters of the Russian Black Sea region as a whole correspond with the socio-economic and demographic dynamics of coastal areas and carried out in three main areas: 1) Grain production, transportation and processing of grain and oilseeds (sunflower crops); 2) Port industry, based on increasing (up to 2014) flow of imports (food industry, construction materials, etc.); 3) Tourism and recreation.

The most powerful trend of cross-border clustering relates to the provision of Russian grain exports (currently up to 90% of deliveries of Russian grain abroad passes through the Black Sea and Azov ports, including Novorossiysk, Taman, Yeisk, etc.). The cluster of the coastal port cities of the Russian Black Sea region that supports the grain transit is working closely with port and logistics centers in Turkey (which also has a developed milling industry), as well as Egypt, Saudi Arabia and some other Middle Eastern countries, which have become a place of localization of large 'dispersed' cross-border cluster that exercises production, handling, processing and sales for up to 30 million tons of grain each year.

CONCLUSION

In the post-Soviet period the coastal area of the Russian Black Sea, and especially the Baltic Sea, have become a priority 'platform' of cross-border clustering. Further possibilities of cross-border cluster formation to a large extent predetermined by geopolitics and, above all, the normalization of relations between Russia and the EU, the involvement in foreign economic relations of economic subjects of the Crimea, a full-scale prolongation of the level of Russian-Turkish foreign economic contacts achieved by 2014. Overall, our country is out of the global trend for the expansion of "coastal urbanization," which in large measure is due not only to its traditional pre-emptive "continentality" in the containment of the population, settlements and economic

potential, but also with the lack of formation of a component of a morekhozyaystvenny complex, with a weak, largely latent "presence" in the seaside area of cross-border clusters. Of particular importance the cross-border clustering and thalasso attractiveness plays for Kaliningrad oblast – the Russian exclave on the Baltic Sea. Formation of cross-border clusters of the Russian Black Sea region as a whole correspond with the socio-economic and demographic dynamics of coastal areas and carried out in three main areas.

ACKNOWLEDGEMENT

Article is written under the financial support of the Russian Science Foundation, Project 15-18-10000 “Cross-border clustering in the dynamics of economic and residential systems of coastal territories of the European Russia”.

REFERENCES

[1] Druzhinin A.G., Russia’s coastal zone as a social and geographic phenomenon: conceptualisation and delimitation, Baltijskij region, Russia, vol. 8/issue 2, pp 85-100, 2016.
[2] Small C., Nicholls R.J., A global analysis of human settlement in coastal zones, Journal of coastal research, USA, vol. 19/issue 3, pp 584-599, 2003.
[3] Socio-economic development of coastal areas of the European part of Russia: factors, trends, models. Druzhinin A.G. (ed.), Russia, Rostov-on-Don: South Federal University Publishing, 2016.
[4] Lachininskii S.S., Semenova I.V., St. Petersburg coastal region: the geoeconomic transformation of the territory. Russia, SPb.: Izdatel'stvo Lema, 2015.
[5] Sal'nikov S.S., Economic geography of the ocean – a new perspective direction of economic and social geography, Soviet geography, Russia, pp 231–243, 1984.
[6] Slevich S.B., Ocean: resources and economy, Russia, Leningrad: Gidrometeoizdat, 1988.
[7] Humphrey S., Burbridge P., Planning and management processes sectoral and territorial cooperation. EU, Coastal Zone Management, 1999.
[8] Porter M., Competitive advantage of nations. USA, New York: Free Press, 1990.
[9] Markusen A., Sticky places in slippery space: a typology of industrial districts, Economic Geography, USA, vol.72, pp 293–313, 1996.
[10] Preissl, B., Solimene, L., The dynamics of clusters and innovation: beyond systems and networks. Germany, Springer Science & Business Media, 2013.
[11] Kivikari U., Growth Triangle as an example of the Northern Dimension policy in the Baltic Sea Region: Report on Policy, Russia, Saint Petersburg: Russian-European center for economic policy, 2001.
[12] Strategija jekonomicheskogo i social'nogo razvitija Sankt-Peterburga na period do 2030 goda (URL://spbstrategy2030.ru/)
[13] Anokhin A.A., Lachininskii S.S., Evolution of the ideas and contents of geoeconomic studies. Regional Research of Russia, Russia, vol. 1/issue 5, pp. 90-95, 2015.
[14] Druzhinin A.G. Aktual'nye trendy i problemnye situacii social'no-jekonomicheskoj dinamiki rossijskogo Prichernomor'ja // Juzhno-rossijskij forum: jekonomika, sociologija, politologija, social'no-jekonomicheskaja geografija, Russia, № 2 (11), pp 3-18, 2015.
[15] Druzhinin A.G., Dajker A.O., Suhinin S.A. «Primorskij faktor» v lokalizacii naselenija Juga Rossii: podhody k identifikacii // Nauchnaja mysl' Kavkaza, Russia, №3, pp 74-81, 2015

THE HISTORIC CITY OF THE REPUBLIC OF TATARSTAN AS A BASIS FOR REGIONAL TOURISM CLUSTER

Assoc. Prof. Dr. Niyaz K.Gabdrakhmanov[1]

Assoc. Prof. Dr. Ruslan A.Ulengov[2]

Assoc. Prof. Dr. Yuliya N.Gorelova[3]

[1]Kazan Federal University, **Russia**

[2] Kazan Federal University, **Russia**

[3] Kazan Federal University, **Russia**

SCIENTIFIC JOURNAL OF MULTIDISCIPLINARY RESEARCH IN SOCIAL SCIENCES AND ARTS

ABSTRACT

The authors of the article propose the hypothesis, that tourism cluster influence on the economy is primarily determined by its organizational and functional effectiveness. Location and territorial organization of tourism cluster objects are becoming the key factors. The use of the above mentioned approach to the territorial organization of the tourism cluster allows to solve the problem of tourism cluster spacial and territorial planning as well as the issue of optimizing cluster's companies location. Small towns account for the most numerous urban settlements group in the world. Moreover they form a stable category which is a vital element of a modern urban framework. Even nowadays small and medium-sized towns have preserved their historic and ethnographic identity unlike large cities. The article considers a town as an object of a potential tourism and recreation activity. Its research could be presented in the form of a model, where urban environment is given as a scheme of a "polarized landscape", provided by B.B. Rodoman. The research have resulted in the identification of the following tourism clusters in the Tatarstan Republic: Prekazanskiy complex tourism cluster (Arsk, Kazan, Laishevo, Sviyazhsk); Prekamskiy tourism cluster (Elabuga, Mendeleevsk, Mensilinsk, Mamadysh, Chistopol); Zakamsky tourism cluster (Bugulma, Leninogorsk, Almetievsk); Bolgarskiy tourism cluster (Bolgar, Tetyushy).

Keywords: spatial development, historical city, tourism, tourism cluster, Republic of Tatarstan.

INTRODUCTION

At the current stage of regional development tourism is one of the fastest growing service industries. At the same time, against the backdrop of the world's political problems (armed conflicts and terrorist threats in a number of countries) internal

tourism should take priority over external tourism. The existing situation should become a new incentive for the regional tourism development in Russia.

Conceptual and methodological basis of the cluster approach to tourism development is discussed in the papers of T. Andersson [2], I.N. Denisova [3], S.R. Dreving [4], K.V. Ekimov [5], C. Karlsson [7], N.A. Larionova [8], Y.B. Mindlin [9], M. Porter [10] and T.V. Tsikhan [15].

In our research we consider tourism cluster as a group of interrelated tourism enterprises concentrated in a certain area, interacting and complementing each other to create an integrated tourist product of an area [14].

METHODOLOGY

Generating the concept of local clusters establishment and development it is vital to identify the potential of territories where these clusters will be formed [14]. Implementing cluster policy and identifying the region's potential to establish pilot local tourism clusters one should conduct an in-depth analysis of the regional economy competitiveness in the following areas:

- analysis of the current situation and prospects of vocational schools development to meet the regional economy needs in the training of qualified professionals and in terms of prerequisites for pilot local tourism clusters establishment;
- analysis of the existing scientific and research institutions infrastructure operating in the region as well as their experience of interacting with businesses and their development prospects;
- analysis of regional municipalities opportunities to provide conditions for pilot local tourism clusters development in the area;
- final analysis of pilot local tourism clusters in terms of their potential participants, opportunities and constraints for development.

Small towns is the largest group of urban settlements in the world. It is a stable category, which is also an essential element of the national "urban framework" [13].

Small and medium-sized towns, in contrast to the large cities, have retained their historical and ethnographic identity. They noticeably bear more historical signature, reflect the features of the surrounding countryside, are close to the nature and are linked to agriculture and religious traditions. It is these qualities that make them attractive and promising for specific tourism development.

Any small historic town usually appears in the form of a geographical images plurality different in genesis, content and structure. These images are formed by social and professional groups as well as by individuals in the process of a goal-directed activity. Small towns space parameters are relative. Previously a modern small town could be an unimportant provincial settlement or a large cult centre, which has lost its significance in the course of time [12].

In contrast to the relatively newly established small towns (industrial, resort, research centres, etc.), a small historic town is a specific type of community, which has largely

preserved domestic historical and cultural potential that can be actualized in the present. In this terms a small town first of all is a kind of a transitional stage between urban culture with its significant professional component and the traditional countryside. The small town is valued for its strong ties with rural periphery, surrounding the area, with the surrounding villages and settlements, serving as a kind of a rural "capital". The second important feature of a small town is its interaction with wildlife, pristine scenery, in contrast to the almost completely artificial environment of a big city. Thirdly, the social organization of life in a small town is characterized by such parameters of cultural chronotope as unhurried and ordered daily routine, a close acquaintance of inhabitants with each other and relationship more imbued with feelings rather than with judgements. In this regard, social information, settled for many years in the environment of a small town (traditions, customs, myths, folklore, etc.), lasts longer and is always in demand [12]. All the above mentioned features are visualized in the architectural appearance of a small town. "The land architecture" is strongly reflected in the small town image. The main parameters of the small town architectural space are focused on the human scale. This definition implies the specificity of tourism in Russian small historic towns, which should be directed, first of all, at the culture of the small historic town as a cultural representative of the old Russia, and detailed familiarity with its history.

Considering the town as an object of possible tourist and recreational activities, its study can be presented as a model in which the urban environment is viewed in the form of the "polarized landscape" scheme offered by B.B. Rodoman [11].

At the local level the structure of urban environment recreational area is formed from the historical core of one or several radii and several local cores corresponding to the administrative centres of the towns, or tourism facilities. Thus, the historic town centre is the main element of the recreational space structure, it becomes a kind of a focus, surrounded by the local centres of recreational infrastructure in the periphery. They may be different in size, in set of objects and significance in the recreational environment. In terms of value they clearly stand out among others and can act as sub-centres or have only local significance and not to go beyond these limits. Towns and surrounding areas are the local entities, where the combination of different functions leads to a synergy.

RESULTS

The authors consider the general principles of regional tourism cluster establishment in the Tatarstan Republic on the basis of historical towns.

The Republic of Tatarstan possesses significant potential in terms of tourism development based on small and medium-sized historic towns. Along with the whole Russian Federation, the degree of investigation and representation for the tourist product of small and medium-sized towns in the Republic varies significantly. The following towns are viewed as the most perspective: Bulgar, Bugulma, Yelabuga, Zainsk, Laishevo, Mamadysh, Mendeleevsk, Menzelinsk, Sviyazhsk, Tetyushi, Chistopol with Bulgar, Elabuga, Sviyazhsk taking the lead. Historical and cultural product of these cities is the most widely represented in the market of tourist services [11].

In our opinion, the regional tourism sector of Tatarstan Republic should be built on the polycentric principle [6] with the outlining of several clusters.

Prikazanskiy complex tourist cluster (Arsk, Kazan, Laishevo, Sviyazhsk) . Kazan, with its rich historical and cultural complex and well-developed infrastructure, forms the historical core of the cluster. Arsk, Laishevo and Sviyazhsk occupy a subordinate position. In terms of infrastructure these towns stand behind Kazan and form subclusters. For example, Sviyazhsk, as a unique historical entity, could not provide enough accommodation, which somewhat limits its use. However, the relative proximity to Kazan allows to use its infrastructure in the organization of tourist trips. In addition, the surrounding rural settlements can be used for the organization of rural tourism.

Prikamskiy tourist cluster (Yelabuga, Mendeleevsk, Menzelinsk, Mamadysh, Chistopol). Elabuga with its good infrastructure and a great variety of historical and cultural sites for tourists is the apparent core of the cluster. Mendeleevsk, Menzelinsk, Mamadysh and Chistopol should serve as a basis for subclusters.

Zakamskiy tourist cluster (Bugulma, Leninogorsk, Almetyevsk). The specifics of the region economic development (oil production) predetermines a rather narrow specialization in the tourism sector, namely industrial tourism. This cluster can be attractive in terms of the history of oil production and oil exploration.

Bulgarskiy tourist cluster (Bulgar, Tetyushi). Bulgar forms the main historical core of the cluster, which is the most northern medieval Islamic monument in the world and the unique model of the Bulgarian-Tatar architecture of the mid XIII-XIV centuries. This cluster focuses primarily on the cultural-cognitive and pilgrimage tourism.

CONCLUSION

In the course of our research we have identified 4 tourist clusters on the territory of the Tatarstan Republic. Each of these clusters possesses specific identity and provides certain forms of tourism due to its historical and spacial features (they are summarized in Table 1).

Table 1 Republic of Tatarstan tourist clusters specialization

Cluster	Primary and secondary forms of tourism
Prikazanskiy complex cluster	Cultural, educational, event, business, cruise, ethnic, pilgrimage, ecological and rural tourism.
Prikamskiy cluster	Recreational, cultural, educational, event, cruise, fishing, hunting and rural tourism.
Zakamskiy cluster	Industrial and recreational tourism.
Bulgarskiy cluster	Cultural, educational, pilgrimage, cruise, event, ethnic, fishing and rural tourism.

Hence, it should be noted that the Russian small and medium-sized towns are unique. They have interesting features and sites to show international guests and compatriots. in case of competent organization of the tourist image and proper marketing strategy tourist centres are being established on their territory, which help to attract tourist flows to the regions, and, consequently, to create jobs, to enrich the culture of the local population, having a stimulating effect on a wide range of economic indicators.

REFERENCES

[1]Alexandrova A.Y. Tourist cluster: the content, the boundaries, the functioning mechanism , Sovremennye problemy servisa y turizma, issue 1, pp.51-61, 2007.

[2]Andersson T., Schwaag-Serger S., Sorvik J., Hansson E.W., The Cluster Policies Whitebook, IKED, 2004.

[3]Denisova I.N., Key methodological and scientific-practical clustering problems in the globalized world, Moscow, Sputnik+. 2009.

[4]Dreving S.R., Cluster concept of sustainable development of the economy, St. Petersburg State University, 2009.

[5]Ekimov K.V, Fedin E.V, Naumov A.V., Industry cluster: life cycle stages and types of state support, The study of artificial industry cluster life cycle, Rossiyskoye predprenimatelstvo, issue 4, 2010.

[6]Emelyanova N.A., Saraykin S.V. , Problems and prospects of small historical towns for the development of tourism in the Republic of Mordovia, Turism y regionalnoye razvitiye, Issue 7, pp.97-100, 2014.

[7]Karlsson C., Handbook of research on cluster theory, New York: Edward Elgar Publishing, 2008.

[8]Larionova N.A., The cluster approach in the management of competitiveness of the region, Ekonomichesky vestnik, Rostov State University, issue1, (2), 2007.

[9]Mindlin Y.B., The essence of the clusters, their types and role in the economy, Mikroekonomika, issue 7, 2009.

[10]Porter M. E., On competition, Harvard Business Press, pp. 345-349, 2013.

[11]Rubtsov V.A., Baybakov E.I., The development of the tourism sector with implementation of cluster approach, Ekologicheskoye konsultirovaniye, issue 4, pp.21-26. 2015.

[12]Rubtsov V.A., Gabdrakhmanov N.K., Mustafin M.R., Arzhantseva N.V. Optimization model of making a decision in the conditions of uncertainty (correlation of interests and preferences in regional systems), Mediterranean Journal of Social Sciences, vol. 6, issue 3, pp. 781-785, 2015.

[13]Rubtzov V.A., Gabdrakhmanov N.K., Delabarr O.A., Pratchenko O.V., Determination of the development potential of urban territories on the basis of integrated assessment of the social-ecomomic zoning by the example of the city of Kazan, Mediterranean Journal of Social Sciences, vol.6, issue 3, pp. 681-684, 2015.

[14]Ryabtsev A.A., Tourist services as a system factor of destinations development, Abstract of dissertation for the degree of candidate of economic sciences, Sochi 2012.

[15]Tsikhan T.V., Cluster theory of economic development, Teoriya y praktika upravleniya, issue 5, 2003.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE IMPACT OF INFRASTRUCTURE CAPITAL ON REGIONAL ECONOMIC DEVELOPMENT AND PERFORMANCE: NEW EVIDENCE FROM RUSSIAN REGIONS

Assoc. Prof. Dr. Irina Baskakova

Ph. D. student Nikita Malafeev

Ural Federal University, Yekaterinburg, **Russian Federation**

ABSTRACT

There are plenty of papers, which attempt to evaluate the relationship of infrastructure capital stock and the level of economic development. However, studies of countries like Russia, which are characterized by strong socio-economic differentiation of its regions, are rare. The purpose of the article is to determine the optimal value of infrastructure capital in the structure of economy of the region and to assess its impact on the gross output of goods manufacturing industries. An econometric analysis is based on the production function method. As input variables were collected panel data on the economies of the administrative units, provided by the Federal State Statistics Service of Russian Federation for the 2004-2013 period.

Keywords: infrastructure, infrastructure capital, public capital, regional economy, Russian Federation

INTRODUCTION

The explosion of scientific interest in the infrastructure capital and in its importance for the maintenance of long-term and sustainable economic and social development in the XX century was due to the creation of entire infrastructure industries. As well as the "Keynesian revolution" in economic theory substantiated the importance of public investment in infrastructure as a tool of fiscal policy. Representatives of neoclassical economic school also contributed to the development of the infrastructure capital problem: they incorporated an infrastructure in the theories of production, economic growth and public goods. A milestone was D. Ashauer's pioneering paper [1], published in 1989, which empirically analyzed the impact of infrastructure capital on the output of the private sector, using the production function approach[1] - well-known and commonly used in a lot of contemporary research papers. R. Barro made an important contribution to the development of the theme, proposing a model of endogenous growth [2], a key feature of which was the inclusion of government spending in the form of infrastructure investment to the firm's production function.

A new round of infrastructure capital research was caused by the mass privatization of state-owned assets in developed countries in the 1990s. During this period, many

[1] We should note that the need of inclusion of infrastructure capital in the production function of the private sector was mentioned, for instance, in the paper of Grossman and Lucas [6] – a long before Ashauer's article was published.

researchers have shifted their focus to the regional level [7], on which higher efficiency of infrastructure investment can be achieved [5]. The number of publications on the topic increased due to empirical research on Latin American (e.g. C. Calderon and L. Serven [4]) and Asian countries, primarily Argentina, Brazil, China and India. An important feature of developing countries is the high degree of differentiation of their regions, not only in terms of gross regional product (GRP), but also in terms of provision of infrastructure capital. The same holds true for the regions of Russia, in which the level of differentiation according to provision of infrastructure capital may be considered as one of the highest in the world.

The interest of the authors in the problem is due to the relevance of studies of the impact of infrastructure capital on economic development and the lack of discussion on this issue in respect of the regions of Russia. At present, there are several studies on the Russian regions, which use the same (or similar) techniques as many prior studies on other countries' regions. For example, two articles written by V. Popov [9], [10], both of which assessed the level of provision of infrastructure capital in the Far East of Russia, as well as a series of articles of E. Kolomak (e.g. [8]). The aim of our research is to determine the optimal value of infrastructure capital in the structure of economy of the region and to assess its impact on the gross output of goods manufacturing industries.

Structure of the paper is as follows. In Section 1, we refine the concept of infrastructure capital. In Section 2, we explain our choice of the particular subject of the Russian Federation for empirical research and present an econometric research design. Finally, we present the results, discuss them and provide a conclusion of this study.

1. THE CONCEPT OF INFRASTRUCTURE CAPITAL

Infrastructure capital is a multifaceted economic concept. There is still no single, comprehensive definition of this term. In our research, we consider infrastructure capital as a system of physical assets, characterized by both internal and external relations, whose main function is to ensure the sustainable operation of the socio-economic system. Thereby the nature of infrastructure capital is based on two essential components: 1) structural elements; 2) property rights.

Structural elements are the physical assets that perform the specific tasks aimed at maintaining sustainable operation of economic system. For example, the prime task of power and water supply networks is to maintain safe and continuous operation of the economic system. The composition of structural elements is based on the chosen classification of infrastructure. The classification of infrastructure may rely on the principles of a) functionality and b) strategic importance. The latter contains two subtypes: 1) critical infrastructure; 2) infrastructure of national importance. We should note that Russian economic science traditionally distinguishes two types of infrastructure: basic (industrial) and social. Some researchers also distinguish market infrastructure.

Infrastructure capital may belong to both the private and the public sector. However, due to the high cost of construction, operation and maintenance of infrastructure in most countries, the bulk of the infrastructure capital is publicly owned. This leads to the fact that many economists equate the concepts of infrastructure capital and public capital. Although it was the normal assumption until the middle of 1980s, after public sector

reforms started in the second half of 1980s in many developed countries, such approach has become a significant simplification of the research. Finally, infrastructure capital covers only the tangible side of infrastructure (e.g. utilities, social facilities, facilities necessary for the operation of trade).

2. RESEARCH DESIGN

The region in its economic interpretation is generally considered as complex territorial and economic system with its own structure of relations between the external and internal environments. In Russia, such a definition of the region most closely matches the concept of "economic region".

In this study, we analyze the Ural economic region (UER). The choice is due primarily to the fact that it is a self-sufficient economic entity (leading industrial and scientific clusters, one of the largest transportation hubs in the country). Ural economic region consists of seven administrative units with different specialization and levels of socio-economic development: the Republic of Bashkortostan, Chelyabinsk Oblast, Kurgan Oblast, Orenburg Oblast, Perm Krai, Sverdlovsk Oblast and the Udmurt Republic.

The region accounts for 10% of the country's GDP, population, human resources, fixed assets, investments in fixed assets. The share of the manufacturing industries in the gross regional product is 54%; in the total value of fixed assets is 35%; and in investments is 55%. The shares of output of basic, social and market infrastructure industries in the gross regional product (GRP) is 11%, 8% and 26%, respectively. The following indicators characterize allocation of infrastructure capital in the Ural economic region: the shares of basic, social and market infrastructure in the total value of fixed assets are 29%, 10% and 25%, respectively. The structure of investments in the Ural economic region is characterized by an imbalance: the proportions of investment in basic, social and market infrastructure in the total investment in fixed assets are 21%, 9% and 15.5%, respectively. Investments are directed to those industries, which are highly developed and have lower depreciation of capital stock.

The econometric model is based on a theoretical model of a dual-sector economy of Barro-Karras-Popov [9], [10]. The authors have chosen the production function approach. There are two reasons for this choice. Firstly, this approach has been often employed in empirical research that makes it easy to check the adequacy of the results. Secondly, the length of the time series derived from the Russian statistics (14-17 years nationwide, 10-13 years at a regional scale) limits the use of an approach based on vector autoregression (VAR). That excludes obtaining consistent estimates of production function parameters.

The sample set includes 70 observation: the annual data on gross regional product, the residual value of fixed assets at the end of the year and the average number of employed people in seven administrative units of the Russian Federation, which are part of the Ural economic region, collected for the 2004-2013 period by the Federal State Statistics Service (Rosstat).

As an econometric model for panel data analysis, we have chosen the fixed-effects (FE) model, which is most appropriate for the type of data in the sample set according to Durbin-Wu-Hausman test results. We consider the case of constant returns to scale for all factors of production.

For the purpose of the econometric analysis, the economy of the Ural economic region is divided into two sectors.

The composition of the manufacturing sector includes industry (mining, manufacturing, electricity generation, gas and water supply), agriculture, forestry, fishing and construction.

The infrastructure sector includes: a) basic infrastructure (transport, communications, utilities: electricity, gas and water distribution); b) social infrastructure (public administration, education, health, social security, the provision of other services: arts and culture, sports, housing); c) market infrastructure (wholesale and retail trade, catering, logistics and distribution, procurement, non-productive types of public services, financial services).

The inclusion of basic infrastructure industries in the infrastructure sector is justified by more than 30 years of active research on the issue, starting with the pioneering study of Ashauer [1] and ending with the meta-analysis, conducted by P. Bom and J. Ligthart [3]. The inclusion of social and market infrastructure industries in the infrastructure sector is not so common among researchers. This is due to the fact that the social infrastructure does not always meet the criteria of economic efficiency. Market infrastructure can often be considered as private sector services and, therefore, is not represented in all classifications of infrastructure. Thereby, in our econometric analysis the infrastructure sector is examined in three variants: a) only the basic infrastructure; b) the basic and social infrastructure; c) the basic, social and market infrastructure.

The *dependent variable* is the gross output, which is determined separately for each of the two sectors of the region's economy. Dynamics of gross output is estimated on the statistics of the gross regional product of administrative units of the Ural economic region by economic activity, at constant 2004 prices.

The *independent variables* are the following: 1) capital inputs K_I and K_G in the infrastructure and goods manufacturing sectors, respectively, calculated on the residual value of fixed assets at the end of year; 2) labor inputs L_I and L_G in the relevant sectors, calculated on the statistics of the distribution of the average number of employed people in the Ural economic region by economic activity; 3) infrastructure input B_I is the share of output of the infrastructure sector, which goes into intermediate consumption by the manufacturing sector. The share of intermediate consumption $(1-c_I)$ in the output is calculated, using the data of national accounts of the region, as one minus the share of total household final consumption expenditure spent on services in the total gross output of services.

The extent of influence of each production factor on the dynamics of gross output is determined by the coefficient of output elasticity with respect to production factor, i.e. by the parameter of technology of the production function.

The first and base hypothesis of the study: infrastructure input as a factor of production function of the manufacturing sector has a positive and significant impact on the value of the gross output of this sector.

The second hypothesis is as follows: basic infrastructure is more productive and thus contributes remarkably to the impact on the value of the gross output of the manufacturing sector.

Initial production functions of Cobb-Douglas for the two sectors of the region's economy are as follows:

$Y_G = A_G \cdot K_G^{\alpha} \cdot L_G^{\beta} \cdot B_G^{\gamma}$ - the manufacturing sector (G);

$Y_I = A_I \cdot K_I^{\mu} \cdot L_I^{1-\mu}$ - the infrastructure sector (I).

To simplify the estimation of regression equations we transform the production functions into a linear form by taking the logarithms. For the case of constant returns to scale for all production factors, we have the following expression: $\alpha + \beta + \gamma = 1$. Let $y_G = \ln\left(\frac{Y_G}{L_G}\right)$, $k_G = \ln\left(\frac{K_G}{L_G}\right)$, $b_I = \ln\left(\frac{B_I}{L_G}\right)$ and constant $a_G = \ln A_G$. Taking into account previous expressions, we obtain the following regression equation for the manufacturing sector:

$$y_G = a_G + \alpha \cdot k_G + \gamma \cdot b_I \quad (1)$$

Similarly, let $y_I = \ln\left(\frac{Y_I}{L_I}\right)$, $k_I = \ln\left(\frac{K_I}{L_I}\right)$ and constant $a_I = \ln A_I$. Taking into account previous expressions, we obtain the regression equation for the infrastructure sector:

$$y_I = a_I + \mu \cdot k_I \quad (2)$$

The resulting coefficients of output elasticity **α**, **γ** and **μ**, as well as the assumption that the value of final consumption of infrastructure goods ($c_I = \frac{C_I}{Y_I}$) is a constant share in the total gross output of infrastructure sector, allow us to calculate the optimal ratio of capital using the following result of solving Barro-Karras-Popov's model of dual-sector economy [9], [10]:

$$\frac{K_G}{K_I} = \frac{\alpha \cdot (1 - c_I)}{\gamma \cdot \mu^2} = \rho \quad (3)$$

This indicator allows us to compare actual and estimated capital ratios. However, because of the assumptions of the Barro-Karras-Popov's original model about the closed economy of the region [9], [10], estimated indicator defines only one of the extreme values on the closed interval of possible capital allocation between the sectors of the economy.

RESULTS

The estimated parameters of production functions for two sectors of the economy of the Ural economic region, presented in Table 1, have been obtained for the following three cases: the infrastructure sector includes only the basic infrastructure (Case 1); the basic and social infrastructure (Case 2); the basic, social and market infrastructure (Case 3).

Table 1

The estimation of the production functions' parameters for the economy of Ural economic region for the 2004-2013 period.

Production functions' parameters	2004-2013		
	α	γ	μ
Regression coefficient value	Case 1: 0.2090 Case 2: 0.2117 Case 3: 0.1593	Case 1: 0.2619 Case 2: 0.3605 Case 3: 0.4400	Case 1: 0.3409 Case 2: 0.3233 Case 3: 0.3149
Standard Error	Case 1: 0.0270 Case 2: 0.0258 Case 3: 0.0293	Case 1: 0.0680 Case 2: 0.0873 Case 3: 0.0837	Case 1: 0.0420 Case 2: 0.0254 Case 3: 0.0277
t-statistic	7.67; 8.21; 5.45	3.81; 4.13; 5.25	8.12; 12.71; 11.36
Probability (t-stat.)	0.00; 0.00; 0.00	0.00; 0.00; 0.00	0.00; 0.00; 0.00
Coefficient of determination (R-squared)	within: 0.7669; 0.7752; 0.8043 between: 0.2957; 0.2680; 0.2835 overall: 0.3284; 0.3079; 0.3572		within: 0.5453; 0.5612; 0.7013 between: 0.3519; 0.5099; 0.7679 overall: 0.4025; 0.4681; 0.5439
F-statistic	88.83; 93.79; 110.93		65.96; 70.35; 129.13
Probability (F-stat.)	0.00; 0.00; 0.00		0.00; 0.00; 0.00

The estimated coefficient of elasticity of output of the manufacturing sector with respect to infrastructure input is equal to 0.262 in case of the basic infrastructure included only in the infrastructure sector; 0.3605 in case of both basic and social infrastructure included; 0.44 in case of all three types of infrastructure included. By looking on the value of the estimated parameters, we have concluded that infrastructure capital is not only a production factor in the infrastructure sector, but also makes a significant contribution to the output of the manufacturing sector, i.e. its impact cannot be ignored.

Econometric estimates of the parameters of production functions allow us to find the optimal ratio of capital allocation between the sectors of the Ural economic region.

Table 2

Estimation of the optimal capital allocation ratio between the sectors of the economy of the Ural economic region

Indicator	**Period**									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
The share of the final consumption of the infrastructure goods	0.33	0.30	0.31	0.31	0.36	0.41	0.40	0.37	0.32	0.33
ρ calculated (only basic infrastructure)	4.60	4.81	4.76	4.71	4.41	4.08	4.15	4.31	4.64	4.61
ρ calculated (basic + social)	3.76	3.93	3.90	3.85	3.61	3.34	3.40	3.53	3.80	3.78
ρ calculated (basic, social and market)	2.45	2.56	2.53	2.50	2.34	2.17	2.21	2.29	2.47	2.45
ρ* actual (only basic infrastructure)	0.88	0.87	0.97	1.05	1.06	1.17	1.18	1.08	1.13	1.02
ρ* actual (basic + social)	0.68	0.67	0.72	0.73	0.76	0.83	0.85	0.80	0.84	0.77
ρ* actual (basic, social, market)	0.40	0.39	0.42	0.42	0.45	0.49	0.51	0.49	0.51	0.49

Estimated values of the optimal capital allocation ratio between the manufacturing sector and the infrastructure sector differ significantly from its actual values. The difference between them varies from 4.5 to 5 times. If the only basic infrastructure is included in the infrastructure sector, we see a certain parity between sectors: the ratio is almost 1 to 1. In other cases, the value of infrastructure capital significantly exceeds the value of capital of manufacturing industries.

DISCUSSION

Empirical estimates of coefficient of output elasticity of the manufacturing sector with respect to infrastructure input (parameter γ) are part of the range of estimates that were obtained by other researchers of the problem for the last 30 years [3]. Although this statement primary holds for the basic infrastructure, the inclusion of social and market infrastructure has been justified: the estimates of parameter γ for case 2 and case 3 are comparable with the results of Popov's study [9] [10], which indirectly confirms the consistency of estimates.

The estimated values of the output elasticity of the manufacturing sector with respect to infrastructure input confirmed the *base hypothesis* of the study about a positive and significant impact of infrastructure input on the value of the gross output of the manufacturing sector for all three considered configurations of the infrastructure sector.

The *second hypothesis* was also confirmed: basic infrastructure is more productive and makes most of contribution to the output. If we add social infrastructure and both social and market infrastructure, the coefficient of output elasticity increases by 0.1, i.e., 37.6% and by 0.178, i.e. 68%, respectively.

The estimated ratio of capital allocation is based on the assumption of a closed economy of the region. It's fair to point out that the economy of region can operate with such deviation of actual values of the ratio from estimated values, if and only if it is a case of open economy.

Does this indicator show a redundancy of capital in the infrastructure sector and, simultaneously, a shortage of capital in the manufacturing sector, i.e., non-optimal capital allocation? To answer this question, it's necessary to use McKinsey Global Institute's empirical assessment, based on the historical experience of the development of infrastructure, which determines the optimal value of the infrastructure capital as 70% of the country's GDP. For the Ural economic region the ratio of fixed assets value of basic infrastructure to the value of gross regional product is only 34%, in average, over the study period. While the same ratio for both basic and social infrastructure doesn't exceed 47%. In other words, the economy of the region suffers a shortage of capital in both sectors. However, the manufacturing sector has more deficit in terms of capital. Further research of the problem should focus on a few areas. Firstly, the estimation of capital allocation ratio in the case of open economy will determine the full range of optimal values of infrastructure capital, not just one of its extreme values. Secondly, consideration of several economic regions of Russia will reveal how the difference in the provision of infrastructure capital reflects the difference in the level of economic development, and will help to develop a classification of regions on the basis of this feature. Thirdly, the calculation of fixed assets value using the survival functions could improve both the quality and quantity of observation of capital inputs. The latter will help to assess the contribution of the infrastructure capital using the method of vector autoregression (VAR).

CONCLUSION

The optimal value of infrastructure capital in the structure of the economy of the region is calculated relying on an empirical assessment of the parameters of technology of production functions related to particular sectors. The research shows that infrastructure capital is not only a production factor in the infrastructure sector, but also makes a significant contribution to the output of the manufacturing sector. The estimated value of infrastructure capital in the economy of the Ural economic region, obtained by the authors, is just one of the extreme values on the interval of optimal capital allocation. However, combined with particular statistical indicators, it allows researchers to determine the presence of capital deficits in both the manufacturing and the infrastructure sectors of the economy of region. Further research should focus on considering the case of an open economy of the region, a comparative analysis of the economic regions of Russia by the level of contribution of infrastructure capital in their socio-economic development and use of different econometric techniques to confirm the consistency of estimates.

REFERENCES

[1] Aschauer D.A., Is Public Expenditure Productive, Journal of Monetary Economics, USA, issue 23, pp 177-200, 1989.

[2] Barro R.J., Government Spending in a Simple Model of Endogenous Growth, Journal of Political Economy, USA, vol. 98(5), pp 103-126, 1990.

[3] Bom P. R.D., Ligthart J.E., What Have We Learned From the Three Decades of Research on the Productivity of Public Capital, Journal of Economic Surveys, USA, vol. 28/issue 5, pp 889–916.

[4] Calderon C., Serven L., The Output Cost of Latin America's Infrastructure Gap, Working Papers Central Bank of Chile, Chile, issue 186, pp 1-20, 2002.

[5] Frank J., Martinez-Vazquez J., Decentralization and Infrastructure in the Global Economy: From Gaps to Solutions, Routledge Studies in the Modern World Economy, USA, pp 1-462, 2015.

[6] Grossman H.I., Lucas R.F., The Macro-Economic Effects of Productive Public Expenditures, The Manchester School, United Kingdom, vol. 42, pp 162–170, 1974.

[7] Holtz-Eakin D.J., Schwartz A.E. Spatial productivity spillovers from public infrastructure: Evidence from state highways, International Tax and Public Finance, USA, vol. 2(3), pp 459-468, 1995.

[8] Kolomak E.A., Infrastruktura: vlijanie na jekonomicheskij rost i prostranstvennye jeksternalii, XI Mezhdunarodnaja nauchnaja konferencija po problemam razvitija jekonomiki i obshhestva. V 3-h kn., Russia, Kn. 1, pp 483-493, 2011.

[9] Popov V.E., Investicii v infrastrukturu i jekonomicheskij rost: regional'nyj aspekt, Regional'naja ekonomika: teorija i praktika, Russia, vypusk 1, pp 59-68, 2009.

[10] Popov V.E., Gosudarstvennoe stimulirovanie jekonomicheskogo rosta cherez razvitie infrastruktury: teorija i praktika (na primere Dal'nego Vostoka Rossii), Regional'naja ekonomika: teorija i praktika, Russia, vypusk 15, pp 43-53, 2010.

THE IMPACT OF INNOVATION ACTIVITY ON SOCIO-ECONOMIC PERFORMANCE: EMPIRICAL EVIDENCE FOR EUROPEAN COUNTRIES

Assoc. Prof. Dr Svetlana Balashova

Peoples' Friendship University of Russia (RUDN University), **Russia**

ABSTRACT

Innovations are the drivers of economic development. This thesis is commonly accepted and has been discussing in many theoretical papers. However, there seems to be a lack of empirical evidence that innovations are affecting socio-economic performance. The aim of this article is to provide arguments for this effect using econometric approach. To characterise innovation activity, we use the Summary Innovation Index of EU and consider several indicators of economic, social and energy effectiveness, using the approach of the EU working group.

The connection between innovation and economic performance is strong for all European countries, and the economic crisis has made this relationship even more strong. However if we divide countries into groups according to their innovation performance, the most substantial relationship turns out to be the one between metrics of innovation activity and state wealth and not the labour productivity, at least in the case of the Innovation leaders. It is shown that innovation performance can be regarded as Granger cause for GDP per capita, the unemployment rate, energy effectiveness, but not labour productivity or income inequality.

Quantile regressions have been used to consider the impact of innovation activity on socio-economic performance in different countries. It is shown that the effect of innovation performance is considerably stronger for countries less efficient concerning socio-economic performance, but not environmental performance.

Keywords: innovation activity, economic performance, environmental performance, quantile regressions

INTRODUCTION

Hopes of economic growth in developed and emerging economies are associated with innovative development. But the way to creative and knowledge-based economy is quite bumpy [1]. In the EU as early as in 2000 Lisbon Strategy was launched. The aim is to make Europe "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion" (Lisbon Strategy, 2000). R&D expenses should increase up to 3% of GDP. Considerable efforts have been made in the European countries to achieve these goals. However, several questions remain. The main is "Does innovation activity matter for improvement in socio-economic performance?"

We explore several related issues, concerning the relationship between innovation and socio-economic performance, using the approach of the EU experts [2].

Several econometric techniques such as Granger causality test, ordinary and quantile regressions for panel data have been used to find out answers to several questions. Does the strength of the relationship between innovation and socio-economic performance depend on the overall innovation performance and the level of socio-economic performance? Can we consider innovations cause of social and economic development, at least Granger cause?

DATA AND METHODOLOGY

We use the Innovation Union Scoreboard 2015 (IUS2015) as a source of data for a comparative assessment of innovation performance for EU and non-EU European countries. The overall performance of national innovation systems is measured by The Summary Innovation Index (SII), which is a composite indicator. The general measurement methodology is reported in [3,4], but several modifications are made almost each year.

We examined 34 European countries, which are classified as Innovation leaders, Innovation Followers, Moderate Innovators and Modest Innovators according to the general methodology.

Following the approach of the European Commission [2], we use several indicators of economic performance (GDP per capita and Labour productivity), social performance (unemployment rates by age groups and the Gini coefficient), and environmental performance (the intensity of energy consumption in the economy and energy use per capita) to examine the relationship between innovation achievements and socio-economic achievements. Descriptive statistics of the considered variables are reported in Table 1.

To answer the question, whether the relationship between innovation and socio-economic performance depend on upon the level of innovation performance, we use a linear model for panel data

$$SII_{it} = \alpha_{it}^{X} + \beta_{it}^{X} X_{it} + \varepsilon_{it} \quad (1)$$

Where X_{it} is one of the socio-economic indicators, ε_{it} is an error term, *i* denotes for a country and *t* denotes for a year. To examine the difference between the different groups we introduce the ordinal variable CAT . $CAT_{it} = 1$, if $SII_{it} \geq 1.2 \cdot SII_t^{EU}$, where SII_t^{EU} is the average of the EU countries in the given year (these countries are termed Innovation leaders). $CAT_{it} = 2$, if $0.9 \cdot SII_t^{EU} \leq SII_{it} < 1.2 \cdot SII_t^{EU}$ for Innovation followers (less the 20% above but more than 10% below that of the EU), $CAT_{it} = 3$, if $0.5 \cdot SII_t^{EU} \leq SII_{it} < 0.9 \cdot SII_t^{EU}$ for Moderate innovators (between 50% and 10% below that of the EU) and $CAT_{it} = 4$, if $SII_{it} < 0.5 \cdot SII_t^{EU}$ for Modest innovators (more than 50% below that of the EU). Hence we suggest, that coefficients in equation (1) can be written as

$$\begin{aligned} \beta_{it} &= \delta_1 + \delta_2 \mathrm{C}AT_{it} \\ \alpha_{it} &= \gamma_1 + \gamma_2 \mathrm{C}AT_{it} + \gamma_3 YEAR \end{aligned} \quad (2)$$

A variable $YEAR$ is used to capture the overall growth in innovation performance of the European countries.

Considering the lag in measuring basic indicators included in SII, all socio-economic indicators are lagged by two years. Besides, we use logarithms of economic and environmental indicators to smooth the data.

Granger test for panel data is used for a preliminary assessment of the possible impact of the innovative development on socio-economic development. The general idea is that the efforts to innovative development subsequently contribute to improving the welfare of the state in a broad sense.

In order to examine the considered impact in details, we use quantile regression analysis. Quantile regression is a statistical technique intended to estimate conditional quantile functions.

$$Q(\tau \mid X = x) = x'\beta(\tau)$$

The linear conditional quantile function can be estimated by solving

$$\hat{\beta}(\tau) = \arg\min_{\beta \in R^p} \sum_{i=1}^{n} \rho_\tau (y_i - x_i'\beta)$$

for any quantile τ (0 < τ <1). Here $\rho_\tau(z) = z(\tau - I(z < 0))$ is "check" function, $I(\cdot)$ denotes the indicator function. The quantity $\hat{\beta}(\tau)$ is called the τ^{th} regression quantile. The case τ=1/2, which minimise the sum of absolute residuals, corresponds to median regression. By supplementing the estimation of conditional mean functions with techniques for estimating an entire family of conditional quantile functions, quantile regression is capable of providing a complete statistical analysis of the stochastic relationships among random variables [5].

Quantile regression can be used on panel data, especially when the assessment is carried out on the pooled data without observing fixed or random effects [6]. In case of the simple regression, it can be written as

$$Y_{it} = \alpha(\tau) + \beta(\tau) X_{it} + \varepsilon_{it} \qquad (3)$$

Here Y_{it} is one of the socio-economic indicators and X_{it} is SII.

EMPIRICAL RESULTS

The main descriptive statistics of the examined indicators are presented in Table 1. Inspection of Table 1 reveals that countries labelled as Innovation leaders and Innovation followers show the socio-economic performance well above that of the moderate and modest innovators. Note that the Innovation followers group is very heterogeneous in economic indicators. The reason is that this group includes Luxembourg and Norway, richest countries in Europe with specific sources of wealth. So we exclude these two states from further analysis.

SCIENTIFIC CONFERENCE SGEM 2015 INTERNATIONAL MULTIDISCIPLINARY

Table 1. Descriptive statistics over the period 2007-2014

	Innovation Leaders		Innovation Followers		Moderate Innovators		Modest Innovators	
	Mean	St.dev.	Mean	St.dev.	Mean	St.dev.	Mean	St.dev.
SII	.72	.05	.58	.05	.38	.06	.22	.03
GDP	44520	5350	44880	16850	29230	11440	16600	4010
LP	85370	4110	93630	41140	65130	21520	43000	9580
Unempl<25	14.3	6.1	17.0	6.6	24.4	12.0	28.0	13.8
Unempl≥25	5.3	1.4	6.0	2.6	8.8	5.0	12.4	8.4
GINI	29.4	2.4	30.4	3.0	31.4	3.8	34.3	4.3
En_ Use	4440	1270	5600	4230	3030	1180	1980	460
En_Int	130	40	180	140	210	100	350	110

Note: We report estimations of mean and standard deviation by the group of countries. SII denotes the Summary Innovation Index; GDP is GDP per capita, PPP (constant 2011 international $); LP is GDP per person employed (constant 2011 PPP $); Unempl<25 is unemployment rates by age from 15 to 24 years; Unempl≥25 is unemployment rates by age from 25 to 74 years; En_Use is energy use (kg of oil equivalent per capita); En_Int is energy intensity of the economy (gross inland consumption of energy divided by GDP (kg of oil equivalent per 1 000 EUR)).
Source: Innovation Union Scoreboard 2015, Eurostat, World Bank, author's calculation

The differences in the relationship between innovative activity and economic indicators for countries belonging to different categories are graphically presented in Figure 1. The left panel of Figure 1 suggests the solid relationship between economic wealth and innovative activity for all the groups. But it is not the case for labour productivity (the right panel in Figure 1). In average the relationship is positive; however for the modest innovators, it is insignificant. The relationship is not firm for the group of moderate innovators either. This primary assessment is confirmed by the OLS estimation of equation (1) (see first two columns in Table 2).

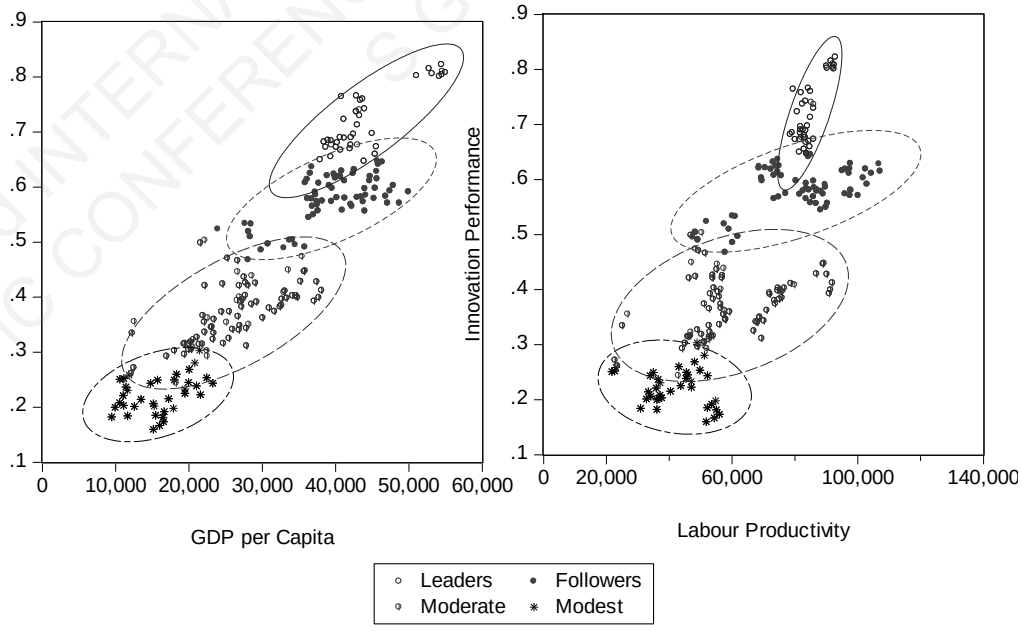


Figure 1. Scatter plot correlation of economic and innovative development for different groups of countries.

The trend towards the improvement of social indicators with an increase in innovative activity is found only on the average (Figure 2). Econometric analysis shows that within the innovation group there is no connection between innovation performance and the unemployment rate among youth (3d and 4th columns in Table 2).

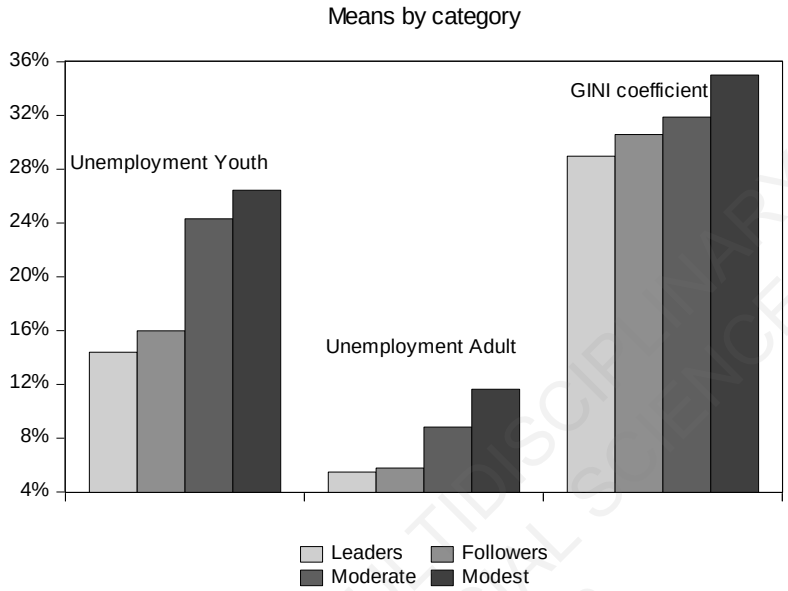


Figure 2. The average of the social indicators within the innovation groups

On average, the less innovative European countries in a less degree are equal regarding income distribution (Figure 2). But within the innovation group, the more innovative countries have a higher degree of inequality according to the estimation results (5th column in Table 2). This estimation corresponds to reported results of the non-linear relationship between inequality and innovations [7].

Such indicator of an ecological environment as energy use and energy intensity of the economy does not show the direct correlation with the innovation activity of the considered countries.

Table 2. Ordinary least squares estimation of the relationship between innovation performance and socio-economic performance

	X variable in equation (1)						
Coef. by	GDP	LP	Unempl<25	Unempl≥25	GINI	En_Use	En_Int
X	.33***	.27***	–.002**	–.014***	0.01***	.022	–.006
$CAT \cdot X$	–.06***	–.06***	.0004	.003***	–.003***	.012	–.003
CAT	.53***	.54***	–.17***	–.18***	–.08***	–.25***	–.14***
$YEAR$	.005***	.005***	.006***	.007***	.005***	.005***	.005***
R^2	.96	.94	.92	.93	.92	.93	.91
Obs.	230	230	228	228	216	237	222

Notes. *** and ** denote significance at the 1% and 5% levels, respectively. GDP, LP, En_Use and En_Int have been transformed using the logarithm function

We use the Granger causality test to address the question whether the innovation activity cause changes in economic, social and ecological performance. The results are presented in Table 3. Of course, we take into account the short data panel, used for the analysis, and

limitations of using the composite indicator SII as stochastic variable [2]. Thus we can report only preliminary results, obtained by this technique. The overall innovation performance, which is based on the quality of national innovation systems, can be regarded as the cause of the increase in economic wealth of a country, the reduction of unemployment rates among different age groups and essential for the energy consumption reduction. But we can confirm the results reported in the literature claiming that there is no solid evidence the innovative development has an impact on the increase in labour productivity.

Table 3. Granger causality test for SII

Dependent variable	GDP	LP	Unempl<25	Unempl≥25	GINI	En_Use	En_Int
F-statistic	3.74**	0.2	4.4**	4.1**	1.56	4.2**	2.7*

Note: The results of testing the hypothesis H_0: SII does not Granger cause the Variable. Variables notations are explained in notes for Table 1. ** means H_0 is rejected at the 5% significance level, * – at the 10% significance level.

It was augured in the literature that the innovation activity has an impact on economic performance only for low-income countries [8].We put the question somewhat broader. For which group of countries regarding social-economic performance the effect is stronger and weaker. The results of the simple quantile regressions of the socio-economic indicators on the Summary innovation index are reported in Table 4.

Table 4. Quantile regression results

Dependent variable	GDP	LP	Unempl<25	Unempl≥25	GINI	En_Use	En_Int
$\hat{\beta}(.1)$	2.5***	1.75***	-14.3***	-4.3***	–.14	1.4***	–1.8***
Pseudo R2	.56	.4	.11	.07	.00	.36	.24
$\hat{\beta}(.25)$	1.96***	1.43***	-20.0***	-4.7***	–4.	1.7***	–2.1***
Pseudo R2	.57	.39	.10	.05	.02	.31	.16
$\hat{\beta}(.5)$	1.82***	1.2***	–24.1***	–8.9***	–12.***	1.75***	–2.3***
Pseudo R2	.59	0.42	0.06	0.08	0.12	0.31	0.25
$\hat{\beta}(.75)$	1.77***	1.16***	–33.8	-16.1***	–10.***	2.2***	–2.***
Pseudo R2	.52	.26	.11	.16	.14	.29	.20
$\hat{\beta}(.9)$	1.88***	1.32***	–65.6***	-34.	–10.***	2.***	-2.1***
Pseudo R2	.48	.22	.23	.22	.19	.28	.07

Notes. *** denote significance at the 1% levels. GDP, LP, En_Use and En_Int have been transformed using the logarithm function

Thus, the relationship between the economic indicators and two years lagged innovation performance show moderate strength in average. But the explanation power of the model drops considerably for the group of countries with high labour productivity.

The impact of innovation activity on the unemployment is weak in average however more intense for the countries with high unemployment rates. Regarding income distribution,

we can say that the impact of innovation activity is proved only for countries with high inequality.

Innovative activity increase has an impact on the growth in per capita energy consumption for all groups of countries. However, energy efficiency increase is observed to a greater extent in countries with a more energy efficient economy.

Severer econometric techniques such as quantile-specific autoregressive models [9] are necessary to refine the obtained results.

CONCLUSION

Presented results of the study do not question the need to build an innovative economy. The accumulation of knowledge, a breakthrough in technology, the transition to the sixth technological order will undoubtedly lead to a drastic increase in labour productivity. However, the questions how it will affect the income inequality and other social problems remain open.

The analysis shows that on the one hand, the more economically developed countries have higher levels of innovation development. On the other hand, achievements in the innovative development have a positive impact on economic and social indicators in average. However, conducting a quantile regression analysis, we can conclude that there are substantial positive impacts of innovation activity on the employment, wealth, labour productivity and energy effectiveness for the first quartile of European countries, but that the impact of innovation activity for the well-developed countries is more ambiguous, suggesting the longer period is necessary to register this impact. So the innovation activity seems to be even more important for the less developed countries than for the leaders.

ACKNOWLEDGEMENTS

The reported study was partially supported by RFBR, research project No 15-06-05146.

REFERENCES

[1] Matyushok V.M., The Thorny Path to Innovative Economy, Bulletin of Peoples' Friendship University of Russia, Russia, N 5, pp 141-157, 2011.

[2] Rai N., Patel P., Relationship between Innovation and Socio-economic Performance, Inno-Metrics Thematic Paper, Brussels: European Commission, 2011.

[3] Hollanders H., Tarantola S., Innovation Union Scoreboard 2010 – Methodology report, Brussels: European Commission, 2011.

[4] Tarantola S., European Innovation Scoreboard: strategies to measure country progress over time, EUR 23526 EN, Luxemburg, 2008.

[5] Koenker R., Bassett G., Regression Quantiles, Econometrica, USA, vol.46, pp 33-50, 1978.

[6] Wooldridge J., Econometric Analysis of Cross Section and Panel Data, USA, 2002.

[7] Hatipoglu O., An Empirical Analysis of the Relationship between Inequality and Innovation in a Schumpeterian Framework, MPRA Paper, 2008.

[8] Hollanders H., Arundel A., 2005 European Innovation Scoreboard - Innovation and Economic Performance, Brussels: European Commission, 2006.

[9] Koenker R., Hallock K., G., Quantile Regression, Journal of Economic Perspectives, USA, vol.15, pp 143-156, 2001.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
S G E M 2 0 1 6

THE IMPACT OF PARENTAL MIGRATION ON STUDENT´S INVOLVEMENT IN HOUSEHOLD DUTIES - THE EVIDENCE FROM THE REPUBLIC OF MOLDOVA

Ing. Tereza Pilarova
Ing. Alexander Kandakov, Ph.D.

Department of Economics and Development, Czech University of Life Sciences Prague, **Czech Republic**

ABSTRACT

The international migration of Moldovan labor force abroad is an important demographic phenomenon that has a significant impact on the many aspects of human well- being. Remittances sent by members working abroad can improve economic situation of poor household and can reduce the economic vulnerability of the original households. Additional financial resources reduce the likelihood of engaging in paid work but on other hand youth left-behind face increased household responsibilities and obligations. The main aim of research was to analyze the impact of parental migration on performing paid work and on the involvement in household chores by university students within the age range of 18 - 25 years. The survey was carried out from July to September 2014 in State Agrarian University of Moldova and Academy of Economic Studies of Moldova university and includes students of bachelor and master degrees (n = 121). Collected data were processed in Stata 13. Using a binary probit model it was found that migration and remittances have an insignificant effect on performing of paid job and involvement in household duties. It was investigated that students living in rural areas have significantly higher probability to be involved in household duties including housework, engagement in agricultural work care about siblings and grandparents. More than 59 percent of students spent daily between 3 – 7 hours working in agriculture and cleaning of houses. When age of student influence the engagement in household chores, gender does not seems to play an important role. Moreover, living in the rural area significantly decreases the probability of involvement in paid work. Interestingly, almost 80 percent of surveyed students intend to migrate abroad mainly due to economic reasons such as lack of suitable and well-paid job and 36 percent of them have already worked abroad.

Keywords: labor migration, household chores, binary probit model, brain drain, paid work

INTRODUCTION

International migration and remittance inflows can influence the prevalence of children and youth labor trough several mechanism [1]. Remittances significantly reduce poverty level of original households in the Republic of Moldova. The share of households benefiting from remittances under the poverty line was twice lower than the respective share among non-migrant households [2]. The perception of poverty has a considerable influence on the likelihood of migration. If a household perceives itself to

be poor, it has a much higher probability to cope with this situation via sending a migrant [3].

When households´ budget is constrained, remittance sent by members working abroad constitute an alternative source of funding which reduce the need for additional finance provided by youth [4], [5]. The Republic of Moldova is one of the world leading countries with a very high dependence on remittances. The importance of these remittances is enormous; approximately 25% of Moldovan households rely on them to cover their daily needs [6]. Moreover, likelihood of child labor is connected to the income shocks [7] but remittances can provide an insurance against the income shocks what contributes to the lower sensitivity of child labor to macroeconomic shocks [4].

Alternatively, the parental absence can increase the likelihood of child labor [8], when parents leave children and they do not sent financial support in form of remittances (or when the remittance are not high enough) and therefore youth left-behind are forced to be involved in paid – job [4]. Koska [9] has shown that the probability of labor decreases even when both parents have migrated. Additionally, the social remittances such as changed preferences and priorities during their stay abroad lead to the reduced tolerance of child labor and parents sometimes increase effort to convince their children study [4].

Young people left behind usually have to fulfill the role of missing parent and they have to perform domestic chores or care about their sibling and grandparents. The responsibilities of children left behind depend on the gender of the migrant parent. When the father leave and elder son is living in the household, the father's duties devolve to him [10]. Antman [11] found that especially Mexican boys increase work outside of the home if their father migrates. Contrary, Yang [5] has shown that remittances decrease the number of boy´s working hours.

This paper examines the impact of parental migration on the involvement in paid – job and on the engagement in household chores by university students within the age range of 18 - 25 years. The article identifies the main factors influencing youth labor incidence and engagement in household duties in the Republic of Moldova and determines whether the remittances and gender of migrant affect youth involvement in domestic and non-domestic activities. Moreover, the article determines if past experience of youth with migration influence the engagement in labor.

METHODOLOGY

A triangulation method was used as a tool for testing data validity. Structured questionnaires were used as a primary data collection method in combination with observations in the area. Pilot testing was realized in the area during the first week of the survey. The survey was carried out from July to September 2014 in State Agrarian University of Moldova and Academy of Economic Studies of Moldova University and included 121 students of bachelor and master degrees within the age 18-25 years. The questionnaires were elaborated in English and the Romanian language.

Questionnaire had following structure:

a) Basic information: gender, age, area, citizenship, region, number of siblings.

b) Educational information: school attendance in school year 2013/2014, level of completed study, reasons for not attending school, parental completed education.

c) Migration patterns: experience with migration, household member´s migration, destination of migration, duration of migration and type of migration, preference of migration.
d) Remittances information: household consumption of remittances.
e) Household information: household head, household activities, labor information, household wealth.

To gain a better understanding of the issue the online semi-structured questionnaire was distributed to local experts. The questionnaire was developed in the English language and included 6 questions. The respondent should decide if there are some differences between youth with a family member working abroad and without.

The questionnaire was distributed to local experts (n = 15) in following fields:
a) Representatives of local NGOs or organizations focused on youth.
b) Local researchers and experts.
c) High school and lyceum professors.
d) Representatives of organization focused on migration and Diasporas.

Binary probit model

Following authors investigating the impact of migration on several aspects of human life in the republic of Moldova the binary probit model was used such [12], [13].

To assess the impact of migration on students´ involvement in paid job, this study relied on a probit model in the following form:

$$\Pr (J = 1|x_i) = \Phi (x_i\beta) \quad (1)$$

where the dependent variable *J* is the binary variable indicating if student is engaged in paid job. In the model is also included set of explanatory variables x_i, which are assumed to influence the outcome of model *Y* and Φ is the cumulative distribution function.

The same methodology was used to estimate the effects of migration on the work:

$$\Pr (W = 1|x_i) = \Phi (x_i\beta) \quad (2)$$

where the dependent variable *W* is the binary variable indicating if student is in work. Variables x_i includes set of explanatory variables, which should influence the outcome of model *Y* and Φ is the cumulative distribution function.

Explanatory variables

Several variables, shown in Table 1, were included the model. Based on the previous researches gender significantly influence whether person is involved in paid-job or not [4], [14]. When female migration reduce child involvement in paid-job for and household chores, male migration increase the likelihood of boys left behind to undertake domestic work activities [14]. When father leave household, the financial responsibility usually pass on boys left behind and therefore they have to focus more on providing of finance to household than on the school achievements [11]. Probability that young person will be involved in labor activities increases with their age [14]. The area of residence is also important determinant influencing likelihood of domestic work and labor involvement. Remittances reduce incidence of child work only in rural areas and

they increase the probability of domestic work in urban areas which is caused by increased pressure due to absence of household member [4].

Table 1. Set of explanatory variables

Variable name	Value
Gender	Binary variable (boy = 1; girl = 0)
Age	Discrete variable
Rural area	Binary variable (yes = 1)
Mother´s emigration	Binary variable (yes = 1)
Father´s emigration	Binary variable (yes = 1)
Experience with migration	Binary variable (yes = 1)
Remittance	Binary variable (yes = 1)

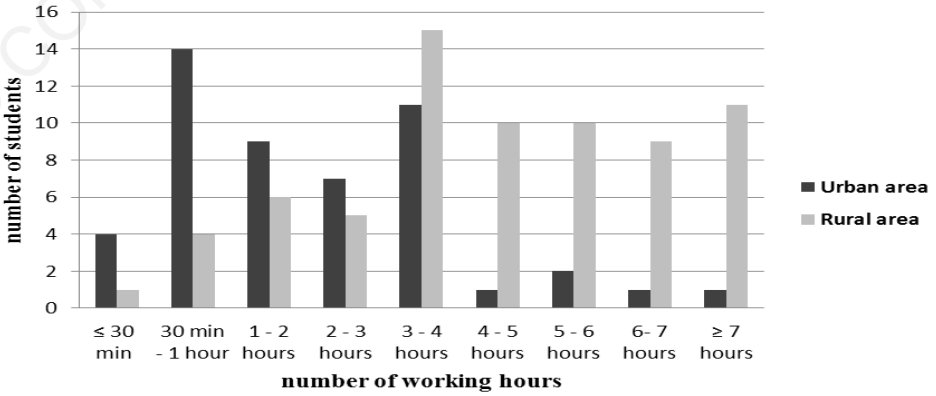
Source: [4], [11], [14]

RESULTS AND DISCUSSION

The results show that 61% percent of respondents have experience with parental migration and almost 67% of students receive remittances send by household members working abroad. Remittances were mostly spent on payment of bills, food, clothing, education, and medicinal expenses and on the improvement of housing. Based on the research results, almost 29% of surveyed students is left- behind by both parent, 7 % of them is left- behind only by mother and 25% only by father.

Majority of the respondents were engaged in some household activity. Generally 45% of respondents worked in agriculture, 20 % respondents cared about their siblings and 90% percent helped with household duties. More than 59 % of students spent daily between 3 – 7 hours working in agriculture and cleaning of house. When age of student influence the engagement in household chores, gender does not seems to play an important role.

Generally, students living in urban areas do not work more than 3 – 4 hours/day but in the rural areas students usually works more hours than in the urban area. The distribution of working hours is shown in Graph 1.



Graph 1. Distribution of working hours

Interestingly, almost 80 % of surveyed students intend to migrate abroad mainly due to economic reasons such as lack of suitable and well-paid job and 36 % of them

have already worked abroad. Based on the opinion of the local experts, the main reasons of migration of youth are mainly due to economic reason including poverty in the Republic of Moldova, better paid jobs abroad, better life condition and access to more quality health and social services, to join to family abroad which is accordance with previous studies. High wage differences (the gross monthly salary is almost 2.5 times lower than in Romania and the Russian Federation) are really important factors for migrants [2].

Binary probit model results – domestic work

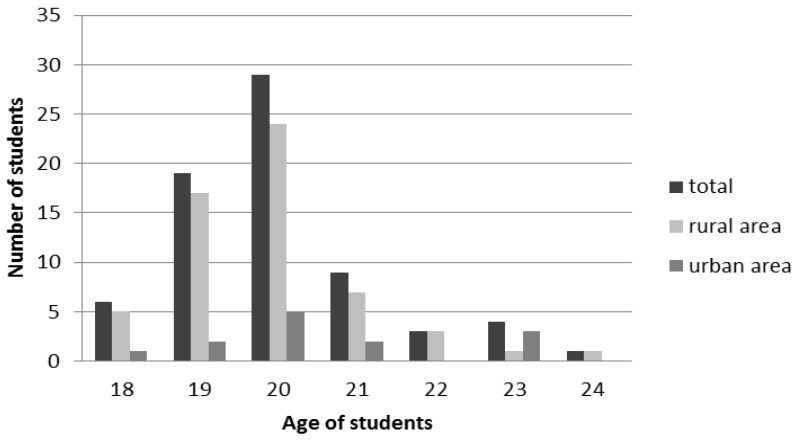
Since previous researches have determine that migration increase the likelihood youth left-behind to undertake domestic work activities [14], based on the results presented in Table 2., involvement in household duties is not influenced by parental migration and neither by gender of student. While Calero [4] have determined that remittances reduce incidence of child work only among the non-poor and in rural areas, our results suggest that students who are living in rural areas have significantly higher probability to be involved in household duties including housework, engagement in agricultural work care about siblings and grandparents.

Table 2. Probit results - work

	Coefficient	*Standard Error*
Gender	0.31	0.27
Age	**-0.05*** **	**0.02**
Rural area	**1.63*** **	**0.28**
Mother´s emigration	0.42	0.31
Father´s emigration	-0.30	0.30
Job	0.47	0.28
Number of observation	121	

Note: * Significant at 10% level ** Significant at 5% level *** Significant at 1% level

Additionally, age of students also has significant effect on the involvement in household and agricultural work duties. Likelihood that youth left - behind will be involved in domestic activities decrease with their age. The age distribution is shown in Graph 2.



Graph 2. Age distribution of involvement in household and agricultural work

Binary probit model results – labor incidence

Using binary probit model, it was found that remittances sent by members working abroad do not significantly influence the likelihood of involvement in the paid job. Moreover, parental migration, gender, age and personal migration abroad in the past do not have effect on the probability labor incidence. Several articles point out gender and age differences influencing child involvement in paid-job for and household chores [11] [14], but our study does not confirm this trend.

Only residence in the rural area significantly decreases the probability of involvement in paid work which is caused by inequalities between the rural and urban areas in case of the employment rate of youth, the wages offered to employees and overall living conditions. The results of probit model are presented in Table 3.

Table 3. Probit results labour

	Coefficient	Standard error
Gender	-0.09	0.25
Age	0.01	0.01
Rural area	**-0.65***	**0.31**
Mother´s emigration	0.18	0.30
Father´s emigration	0.21	0.34
Experience with migration	0.06	0.29
Remittance	0.17	0.34
Number of observation	121	

Note: * Significant at 5% level

CONCLUSION

International labor migration of population, characterized by significant financial flows in form of remittances sent by members working abroad, continues to be one of the most considerable issues nowadays. Since several researches point out the importance of remittances and absence effect of parental departure, our study do not support findings that migration and neither remittances influence youth labor incidence and the engagement in household chores. Additionally, based on our results the most important factor influencing university students´ involvement in household duties and paid - job was area of the residence. Living in rural area significantly decrease the incidence of labor and significantly increase the probability to be involved in household duties including housework, engagement in agricultural work and in care about siblings and grandparents . Additionally, the employment rate of youth, the wages offered to employees and overall living conditions are much worse in rural areas than in the urban areas and therefore majority of surveyed university students plan to migrate in the future which impend the future economic and social development in the Republic of Moldova.

ACKNOWLEDGEMENT

This research was conducted with the financial support provided by the Internal Grant Agency of the Faculty of Tropical AgriSciences, Czech University of Life Sciences Prague, projects number [20165011].

REFERENCES

[1] Ebeke, C.H., The power of remittances on the international prevalence of child labor, Structural Change and Economic Dynamics, vol. 23/ issue 4, pp 452-462, 2012.

[2] International Organization for Migration (IOM), 2012, Extended migration profile of the Republic of Moldova, Available at http://www.iom.md/attachments/285_Extended%20Migration%20Profile.pdf: Accessed 2016-06-06.

[3] Görlich D. & Trebesch C, Mass migration and seasonality. Evidence on Moldova's labour exodus, Review of World Economics, vol. 144/issue 1, pp 107–133, 2008.

[4] Calero C., Bedi A. S. & Sparrow R., Remittances, Liquidity Constraints and Human Capital Investments in Ecuador, World Development, vol. 37/ issue 6, pp 1143–1154. 2009.

[5] Yang D., International migration, remittances and household investment: Evidence from Philippine migrants' exchange rate shocks, The Economic Journal, vol. 118, issue 528, pp 591-630, 2008.

[6] Lücke M., Mahmoud T.O., Pinger P., Patterns and trends of migration and remittances in Moldova, International Organization for Migration, Chisinau, 56p, 2007.

[7] Beegle K., Dehejia R.H. & Gatti R., Child labor and agricultural shocks, Journal of development Economics, vol. 81/ issue 1, pp 80-96, 2006.

[8] Alcaraz C., Chiquiar D. & Salcedo A., Remittances, schooling, and child labor in Mexico. Journal of Development Economics, vol. 97/ issue 1, pp 156-165, 2012.

[9] Koska O. A., Saygin P. Ö., Çağatay S. & Artal-Tur A., International migration, remittances, and the human capital formation of Egyptian children, International Review of Economics and Finance, vol 28/ issue C, pp 38–50, 2013.

[10] Cheianu-Andrei D., Gramma R., Milicenco S., Pritcan V., Rusnac V. & Vaculovschi D., Specific needs of children and elderly left behind as a consequence of migration, Chisinau, 248 p, 2011.

[11] Antman F.M., The intergenerational effects of paternal migration on schooling and work: What can we learn from children's time allocations? Journal of Development Economics, vol. 96/ issue 2, pp 200-208, 2011.

[12] Vanore M., Mazzucato V. & Siegel M., 'Left behind'but not left alone: Parental migration & the psychosocial health of children in Moldova, Social Science & Medicine, vol. 132/ issue 2015 , pp 252-260, 2015.

[13] Pinger P., Come Back or Stay? Spend Here or There? Return and Remittances: The Case of Moldova, International Migration, vol. 48/issue 5, pp 142-173, 2010.

[14] Acosta P., School attendance, child labour and remittances from international migration in El Salvador, Journal of Development Studies, vol. 47/ issue 6, pp 913-936, 2011.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION MULTIDISCIPLINARY SCIENCES AND ARTS

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE IMPACT OF THE GLOBAL EVENTS ON THE TOURISM INDUSTRY OF CITIES

Denis Nechaev

University ITMO, Saint Petersburg, Russia

ABSTRACT

International experience of carrying out Global Events reveals their strong impact on local economy and tourism [1]. While preparing a city for the Global Events, it is indispensable to take the task of the following development and using of created infrastructure into account. One of the main Russian city problems is an underdeveloped transport infrastructure, which impedes the economic and social development generally and negatively affects the tourism development in particular. Due to the complex urban research the strategy of a Krasnoyarsk transport infrastructure development has been created, in anticipation of the 29th Winter Universiade in 2019 [2], which may lay the foundation of the amplification of a city tourist attraction after the Universiade. As a result of the research, the next conclusion has been made: 29th Winter Universiade in 2019 can put Krasnoyarsk on the international map and unlock the historical, cultural and nature potential of this city.

Keywords: global events; tourism; urban innovation; transport Infrastructure;

Introduction

WTTC's latest annual research, in conjunction with Oxford Economics, shows Travel & Tourism's contribution to world GDP grew for the sixth consecutive year in 2015, rising to a total of 9.8% of world GDP (US$7.2 trillion) [3].

The sector now supports 284 million people in employment – that's 1 in 11 jobs on the planet. By 2026, Travel & Tourism is expected to support 370 million jobs in total globally, which will equate to 1 in 9 of all jobs in the world.

SCIENTIFIC 3rd INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS S O C I E M 2 0 1 6

In Russia revival of the economy and creation of new workplaces can happen due to tourism, as during the preparation of major international events takes place considerable modernization of infrastructure, which in a long-term perspective should be used for the development of internal and external tourism.

To increase the tourist attractiveness of cities and regions is a challenge that Russia will have to face. According to the data of the World Economic Forum, Russia is at a 45th place in The Travel & Tourism Competitiveness Index Ranking 2015 [4]. The potential of Russian cities and regions is not fully disclosed. Rich historical, cultural and nature heritage of Russian cities is attractive to both domestic and international tourism. In this article we consider only one criterion by which to assess the attractiveness of a country and city for tourists, however, this one is the key criteria for Russia.

Global Events and Transport Infrastructure

On the whole Travel & Tourism Competitiveness Index (TTCI) is compiled by the fourteen criteria determining the attractiveness of different places on the planet for tourism.

The TTCI structure is based on 14 pillars organized into four subindexes: A) Enabling Environment; B) T&T Policy and Enabling Conditions; C) Infrastructure; D) Natural and Cultural Resources. Among these criteria (subindexes) condition of the road infrastructure (subindex «C») includes the Air Transport Infrastructure and the Ground and Port Infrastructure. It is obvious that accessibility is an important component of the country's and the region's attractiveness for tourism, while in Russia the problem of transport accessibility is one of the most acute problems.

During recent years arrangement of major events has led to a noticeable improvement of the infrastructure, the construction of large projects, including sports facilities, as well as the modernization of transport systems. The Global Events provided a unique opportunity for the city to speed up its urban environmental reform [5] and create a positive environmental legacy for the host city and its country.

Five major international events such as the Summit of the SCO (Shanghai Cooperation Organization), a forum of the BRIC countries in Yekaterinburg in 2009,

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016 3rd INTERNATIONAL MULTIDISCIPLINARY

the APEC Summit in Vladivostok in 2012, the XXVII World Summer Universiade in Kazan in 2013 year, the Winter Olympic games in Sochi in 2014 have led to a significant improvement of the infrastructure of Russian cities, including in the field of transport. The experience of this events shows - transportation as the major element of global events, as for guests of events as for local residents.

Krasnoyarsk is located in the center of Russia on the Yenisey River. A major stop on the Trans-Siberian Railway, it's a charming side trip from Western Russia to Siberia (or vice versa). It's possible to fly from Moscow to Krasnoyarsk's Yemolyanova Airport, and then the Trans-Siberian will take tourists through part of the larger and very beautiful Krasnoyarsk Region.

In 2019 Krasnoyarsk will host the 29th world Winter Universiade [6] and one of the long-term objectives of the city is to maximize the use of the created infrastructure in the future, after the event, as the constructed facilities and the improvement of transport accessibility creates future competitive advantages for the region.

One of the tasks of preparation for the Universiade in Krasnoyarsk in 2019 is creation of a sustainable and modern intermodal and multimodal transport system using a tools of integrated transport planning.

Krasnoyarsk transportation hub is one of the most important passenger transport and logistics centers as a part of the country's transport system. It provides direct and multimodal links between Siberia, the Far East, the Southeast Asia and the central part of Russia. Existing extensive quality characteristics of transport infrastructure do not allow to solve the problems of the growing economy of the region adequately and effectively, as well as the challenges of responding to the demand of the innovation sector for high-quality transportation and logistics services, including during large-scale international events.

The development of transport systems and multimodal connections of Krasnoyarsk transport hub is now becoming an essential criterion for the realization of the innovation model of an economic growth in the region and improvement the life quality of the population.

The purpose of arranging large-scale international events in the city of Krasnoyarsk within the XXIX World Winter Universiade 2019 determines some

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

specific requirements for the development of the transport system and multimodal links of Krasnoyarsk transport hub for this period, while achieving the quality of the city transport system functioning presupposes the existence of an effective management of its transport infrastructure.

External and internal factors causing problems in transport system management:

- Increase in number of cars and growth of individual transport usage intensity
- An increasing urban citizens necessity in mobility
- Decrease of public transport proportion in (passenger) companies
- Disproportion between automobilization and the pace of road construction
- Urban planning problems of a city territory development

For solving the problem of management reorganization of Krasnoyarsk traffic complex and for forming efficiency evaluation criteria of its performance it was essential to lead an all-round territory analysis.

Research methods and results

Current way of transport system development is based on a long-term stable transport development planning, emphasizing the social role of transport planning [7]. For guaranteeing two criteria – "sustainability" and "human-oriented", an integrated analysis of urbanized territories has been carried out.

This approach suggests an interdisciplinary research in order to increase the quality of people's life through transforming urban environment and transport infrastructure. One of the steps was the analysis of transport, urban, social and economic characteristics of urban areas on a micro-level. Complex detailed researches for subsequent forming of transport systems development offers prioritize the social role of transport. Long-term transport policy of modern cities should be oriented on solving a task of people mobility, related to well-planned stable city development and its environment. Such solutions are nowadays described in specialized literature and are applied in practice in some cities [8].

An essential part of mobility researches during the integrated transport planning is a sociological study [9]. Experience of transport surveys was analyzed during the work: MOP – the German Mobility Panel since 1994 [10]; European Platform on Sustainable Urban Mobility Plans [11].

Based on the best experience and analysis [12] an individual technique of studying transport-behavioral patterns, taking specificity of sociological researches in Russia into account, has been developed. The technique allowed to get the following information: an amount and destinations of respondents trips, number of transport means per family, intensity of their use, the most popular and busy public transport stops, an also socio-demographical data of respondents [13].

The research of patterns of travel behavior of population allowed to study intensity and destinations of citizens' trips, discovered importance and business of transport corridors and stopping points.

In order to increase the city attraction for tourists, city points-of-interest and their transport accessibility were analyzed. Attraction points – specific geographically places, which large groups of people recognize as useful or interesting. Attraction points are used in satellite navigation in describing territories, in content-aware systems, in analysis of city development dynamics, geo-attachment of text and so on [14]. Modern approach to points-of-interest analysis involves activity-based land use, transportation, and environment models [15], which is connected with the goal (purpose) of development Russian cities as attractive to tourists.

Conclusion

As a result of the work more than 200 special projects and activities are formed, which are oriented to the development of transport system of Krasnoyarsk and agglomeration, which will form a base for the proficient 29-th Winter Universiade 2019 and provide comfort for transport demand of citizens and agglomeration for a long-term period. In particular, events have affected city public and individual transport, freight

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SCIENCE CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

traffic, airport transport accessibility and organization of pedestrian traffic in a number of areas.

During the Universiade there will be used twenty sports facilities of various functionality and capacity, including eight existing facilities - among them are the Ice Palace "Rassvet", the Ice Palace "Sokol" and the Ice Palace "Pervomayskaya". Five of the existing sports facilities are now under reconstruction: the ski resort "Bobrovyi Log", sports complex "Biathlon Academy", the Palace of Sportnamed after Ivan Yarygin, the Central Stadium and the Ice Palace "Arena Sever".

A regional sport and training complex "Academy of winter sports" is now being built, and it includes ten sports facilities for competitions and training.

The village of the Universiade will be located in the campus of the Siberian Federal University, just near the majority of Universiade sport buildings.

The number of health facilities for the Universiade includes reconstruction of two existing hospitals, and also project development of a medical center in the Universiade village Such a powerful infrastructure will involve new and retrofit transportation branches.

For all the 27 facilities of the Universiade data are generated that show, in particular, accessibility by car, by public transport, pedestrian accessibility from the nearest public transport stop, airport accessibility (the time of car access excluding congestion), the number of parking spaces and type of parking.

Objects reconstruction and construction of new ones, as well as modernization of the transport infrastructure of Krasnoyarsk will allow the city to improve the quality of life and to reach their potential in the tourism sector.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY SGEM 2016

References

[1] Local Development Benefits from Staging Global Events: Achieving the Local Development Legacy from 2012. Available online at https://www.oecd.org/cfe/leed/46207013.pdf

[2] The official site of International University Sports Federation http://www.fisu.net/en/Winter-Universiades-3491.html

[3] World Travel and Tourism Council. Travel and Tourism Economic Impact Summary 2016. Available online at http://www.wttc.org/-/media/files/reports/economic%20impact%20research/2016%20documents/economic%20impact%20summary%202016_a4%20web.pdf

[4] World Economic Forum. Index Results — The Travel & Tourism Competitiveness Index Ranking 2015. Available online at http://reports.weforum.org/travel-and-tourism-competitiveness-report-2015/index-results-the-travel-tourism-competitiveness-index-ranking-2015/

[5] Ho Keat Leng, Noah Yang Hsu. (2015). Emerging trends and Innovation in Sports Marketing and Management in Asia. Chapter 17. Incorporate Environmental Protection into the Olympic Games: The Case of the Beijing Green Olympics. Pp. 289-308.

[6] The official site of 29 Winter Universiade http://www.krsk2019.com/en/

[7] GUIDEMAPS consortium. GUIDEMAPS handbook - Successful transport decision-making a project management and stakeholder engagement handbook. European Comission, 2004.

[8] Social Changeand Urban transport Available online at: http://www.globalstudies.gu.se/digitalAssets/1299/1299523_TD02_SocialChange_Final.pdf

[9] Glenn Yago The Sociology of Transportation. Annual Review of Sociology Vol. 9: 171-190

[10] MOP – the German Mobility Panel. Available online at:

a. https://www.ifv.kit.edu/english/26_MOP.php

[11] European Platform on Sustainable Urban Mobility Plans. Available online at: http://www.eltis.org/mobility-plans

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY

[12] Hess, S., Erath, A. and Axhausen, K.W. Estimates of the valuation of travel time savings in Switzerland obtained from pooled data Available online at http://e-collection.library.ethz.ch/eserv/eth:30468/eth-30468-01.pdf

[13] Schöller-Schwedes, O., & Ruhrort, L. Regional Transport Policy in a Multilevel System. Journal IDEES, 2009. Available online at http://www.idees.net/files/941-222-document/scwedeseng.pdf

[14] Rodrigues F., Pereira F.C., Alves A., Jiang S., and Ferreira J. Automatic Classification of Points-of-Interest for Land-use Analysis // GEOProcessing 2012 : The Fourth International Conference on Advanced Geographic Information Systems, Applications, and Services. Valencia. 2012. P. 41.

[15] Shan Jiang, Ana Alves, Filipe Rodrigues, Joseph Ferreira Jr., Francisco C. Pereira. Mining point-of-interest data from social networks for urban land use classification and disaggregation/ Computers, Environment and Urban Systems.//V. 53, 2015, Pages 36–46

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE IMPACT OF THE ZERO LOWER BOUNDED FOREIGN INTEREST RATES ON A SMALL OPEN ECONOMY

Mgr. Karolína Súkupová

Prof. Ing. Osvald Vašíček, CSc.

[1] Masaryk University, Faculty of Economics and Administration, **Czech Republic**

ABSTRACT

In the paper we analyze the small open economy widely influenced by the foreign economy with bounded interest rates. We analyze the foreign interest rates pass through into a small open economy and impact of the Zero Lower Bound. To evaluate this impact in a real economy we used a dynamic stochastic model of general equilibrium of a small open economy estimated on Czech and European data series. The constraint on the foreign interest rates is modelled using new computational tool DynareOBC designed and created by Tom Holden.

In the second part of our analysis we deal with the foreign capital flows that are implied by the interest rate differential. Czech National Bank uses a nominal exchange rate as an unconventional monetary policy instrument. Stable level of exchange rate may attract foreign investors and that generates pressure on appreciation of the FX rate and the central bank must intervene. This effect may be even stronger when some European central banks decided to decrease policy rates below zero.

Keywords: Zero Lower Bound, foreign capital flows, exchange rate interventions, DSGE models with constraints

INTRODUCTION

The problem of zero interest rates arose after the recession of 2009 and subsequent economic stagnation. Many developed economies experienced exceptionally low interest rates accompanied by very low inflation rates. Such conditions challenge monetary authorities in relation to fulfillment of the monetary policy targets. Monetary authorities were forced to use unconventional tools that substitute the standard monetary policy instrument, i.e. adjusting the policy interest rates.

The second challenge is linked to financial markets and the stability of the financial system. Small open economies that are involved in the open capital market are strongly influenced by its surroundings and the zero lower bound on foreign interest rates has direct consequences on the domestic interest rate and the economy as a whole. The second risk for small open economies is in the foreign exchange rate market.

Very low foreign interest rates create the interest rate differential that makes domestic economy attractive for the foreign investments. In such case, increased capital flows lead to appreciation of the domestic currency. In some small open economies is the nominal exchange rate fixed or stabilized by central bank and increased capital flows may encourage speculations that destabilize the domestic economy.

Since the currency crisis in 1997, the Czech National Bank (CNB) has performed managed floating regime of the Czech Koruna. In the aftermath of the recession in 2009 and subsequent secondary recession, CNB declared asymmetric exchange rate commitment. In the initial phase, the Czech Koruna was depreciated to new level (27CZK/EUR). In the second phase CNB declared its will to defend this exchange rate level against appreciation.

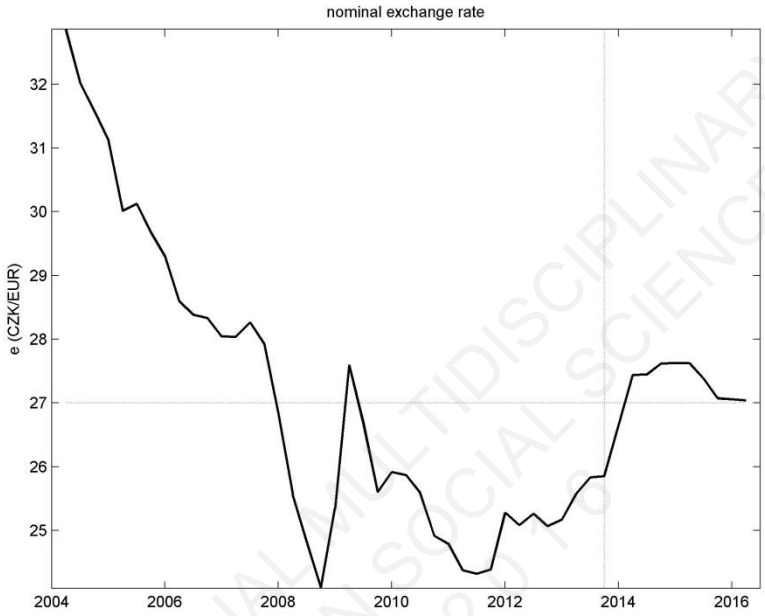


Figure 1: CZK/EUR nominal exchange rate. Horizontal line is equal to the level of commitment; the vertical line denotes the decision to use the foreign exchange rate as an unconventional tool of monetary policy.

The time development of the nominal exchange rate is depicted in the Figure 1. The currency steadily appreciated in a period from 2004 to 2009. The start of the unconventional monetary policy is evident in the last quarter of 2013. First, the currency depreciated and stayed above the level of the commitment. In the last quarters, the currency appreciated to 27 CZK/EUR and CNB had to intervene. The fact that CNB actively defends the currency and decreases uncertainty about the future exchange rate attracts both proper and speculative investments. This is emphasized by decisions of some central banks that were forced to decrease the interest rates in their countries below zero to stabilize their financial systems.

In the following sections, we describe the model structure we used for our analysis and the mechanism of modelling constraints in a DSGE models. Then we provide the results of two analyzed cases – the presence of the Zero Lower Bound on the foreign interest rates and the impact of unexpected foreign capital flows.

MODEL

To represent the economic system we use dynamic stochastic model of general equilibrium (DSGE). The base of the model we used for our analysis is following Alpanda et al. in [1]. The model structure consists of households that offer their labour to intermediate goods producers. The intermediate goods producers sell their products to final goods producer, who use them as the only input and sell their production to households. The third sorts of firms are the foreign retailers, who buy the foreign goods on the foreign markets and sell them to households. Everyone sets their prices in staggered manner, following Calvo in [2]. The model is closed by monetary authority that sets the interest rate following the monetary rule. The model includes the foreign economy that is modelled as a closed version of the domestic economy.

We decided to change some features of the original model. Instead of the Taylor type monetary rule we used the forward looking rule that involves inflation and price level target.

$$r_t = \rho_r r_{t-1} + (1-\rho_r)\left(\phi_\pi(\pi_{t+1} - \pi_T) + \phi_p * P_t + \phi_y y_t\right) + \epsilon_{t,r}$$

The price level targeting is motivated by Holden in [4], who recommends it to obtain more stable solution of the constrained model.

The second change is linked to uncovered interest rate (UIP) condition. We used the condition following Montoro, Ortiz in [5]. The form of the rule enables us to model central banks interventions into the foreign exchange rate (ϖ_t^{cb*}) and analyse the impact of the foreign capital flows (ϖ_t^*).

$$e_t - e_{t-1} = r_t{}^* - r_t - \gamma\sigma^2(\varpi_t^{cb*} + \varpi_t^*)$$

Parameters γ and σ^2 denote risk aversion parameter and variance of the nominal exchange rate respectively.

The model parameters were estimated using seven seasonally adjusted time series of the Czech economy and Eurozone from the period between 2000Q1 and 2016Q1. Both domestic and foreign economies were represented by the time series of the real output, the inflation rate measured by consumer prices and the nominal interest rate (3M PRIBOR, 3M EURIBOR respectively). The link between the domestic and foreign economy is represented by the nominal CZK/EUR exchange rate depreciation. We took the logarithm and the first difference of the time series of the domestic and foreign output to make the series stationary.

The estimation of the model was performed using the toolbox Dynare, the simulations of the model with constraints were performed using the toolbox DynareOBC. All calculations were performed in the system Matlab.

NONLINEAR CONSTRAINTS

To model the Zero Lower Bound on foreign interest rates and asymmetric commitment we used the approach proposed and lately developed into the computational tool by Tom Holden in [3] and [4]. The method is based on so called news shocks. We need to solve the constrained problem

$$(A+B+C)\mu = A_{t-1} + Bx_t + Cx_{t+1} + I_{.,1}y_{1,t-1}$$

$$\forall i \in \{1,\dots,T-1\}, y_{i,t} = y_{i+1,t-1}, y_{T,t} = 0,$$

where T is the maximal time horizon when the constraint is expected to bind and $y_{t,0}$ is the news shock in period t. We horizontally stack the relative impulse responses to the news shocks into the matrix M. If q is the solution of the unconstrained problem, then finding the solution of the problem stated above is equivalent to solving so called "linear complementarity problem", i.e. finding some $y \in \mathbb{R}$ such that

$$y \geq 0, y(q + My) = 0, q + My \geq 0.$$

The mechanism described above was developed into the computational toolbox DynareOBC. This tool enables us to simulate or estimate DSGE models with constraints easily. Interesting feature of this approach is that the constraint in a model is equivalent to expected shock on the bounded variable. For example Zero Lower Bound can be interpreted as "shadow" monetary restriction.

RESULTS

The simulated trajectories of the selected variables are depicted in the Figure 2. The constraint on the foreign interest rate has direct effect on nominal exchange rate through UIP condition. I case that the foreign nominal interest rate is bounded, the nominal exchange rate has tendency to depreciate more than in unbounded case. This is even more significant for the real exchange rate. The ZLB on foreign interest rates pushes the foreign inflation rate lower. As the domestic economy imports goods from abroad, the foreign deflationary pressures come through this channel. The impact on the domestic nominal interest rate is very small, there is some downward tendency, but less significant.

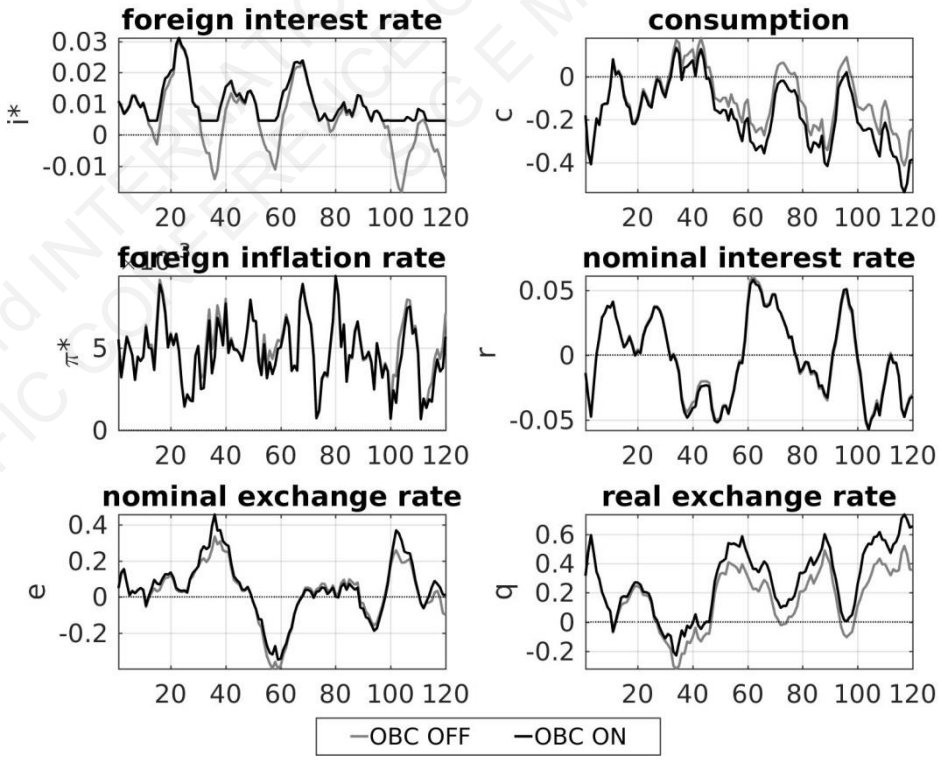


Figure 2: The simulated trajectories of the model with constraint on foreign interest rate.

Interesting and strong impact is evident in consumption. The bound on the foreign interest rates increases the average value of the foreign exchange rate. Households buy foreign assets and the consumption decreases due to the intertemporal substitution effect.

To evaluate the impact of the constraint on foreign interest rates on the domestic economy we analyse the impulse responses that represent the behaviour of the economy. The foreign positive risk aversion shock is equivalent to negative demand shock. Such event decreases the demand for domestic goods and subsequently decreases the prices of domestic goods. Presence of the ZLB causes lower inflation then the unbounded case. The negative impact of decreased foreign demand is compensated by the appreciation of the nominal exchange rate.

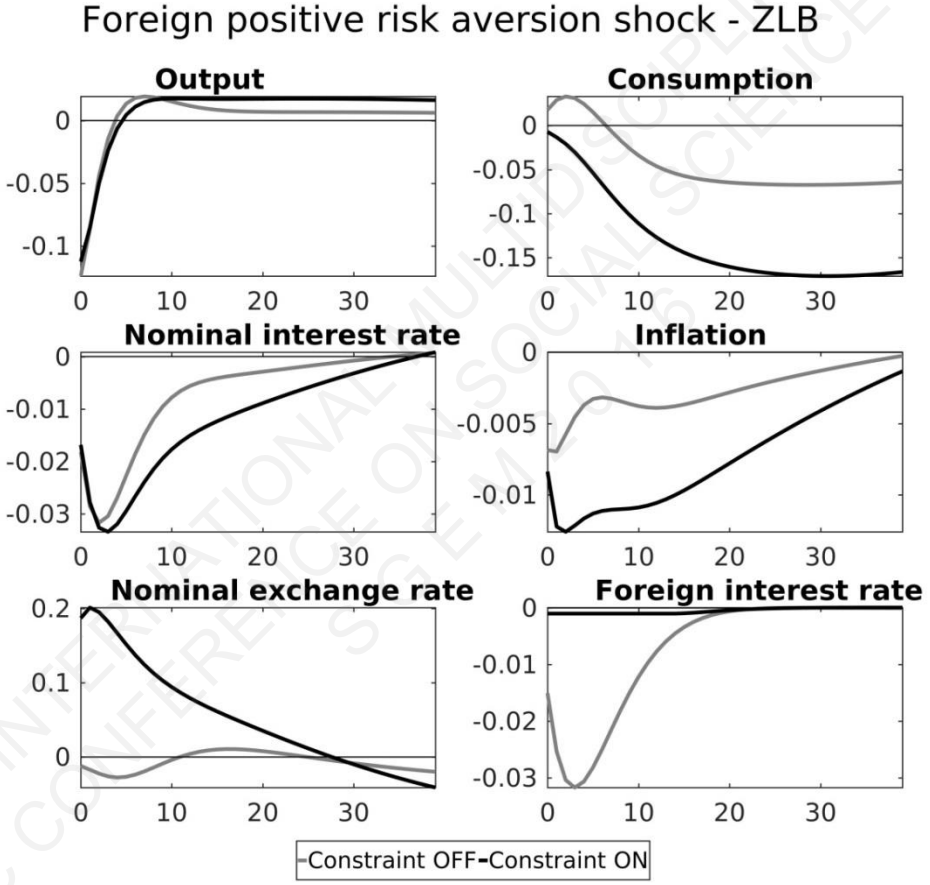


Figure 3: The impulse responses of the selected model variables on the foreign positive risk aversion shock.

Foreign positive technology shock is important for the explanation of current events. The decreased oil prices caused very low inflation worldwide and the ZLB complicated the situation of monetary authorities that needed to perform monetary easing. The impact of the foreign technology shock into the domestic economy is straightforward. Foreign goods are cheaper and the domestic goods are relatively more expensive. That causes decrease in domestic output and increase in consumption, because households start to consume more foreign goods. The constraint on foreign interest rates pushes domestic interest rates down and appreciates the nominal exchange rate. These two

factors compensate the relative change in prices of domestic and foreign goods caused by technology shock. The possible problem is linked to domestic interest rates. The technology shock decreases them and that may be problem if the interest rate is already near zero.

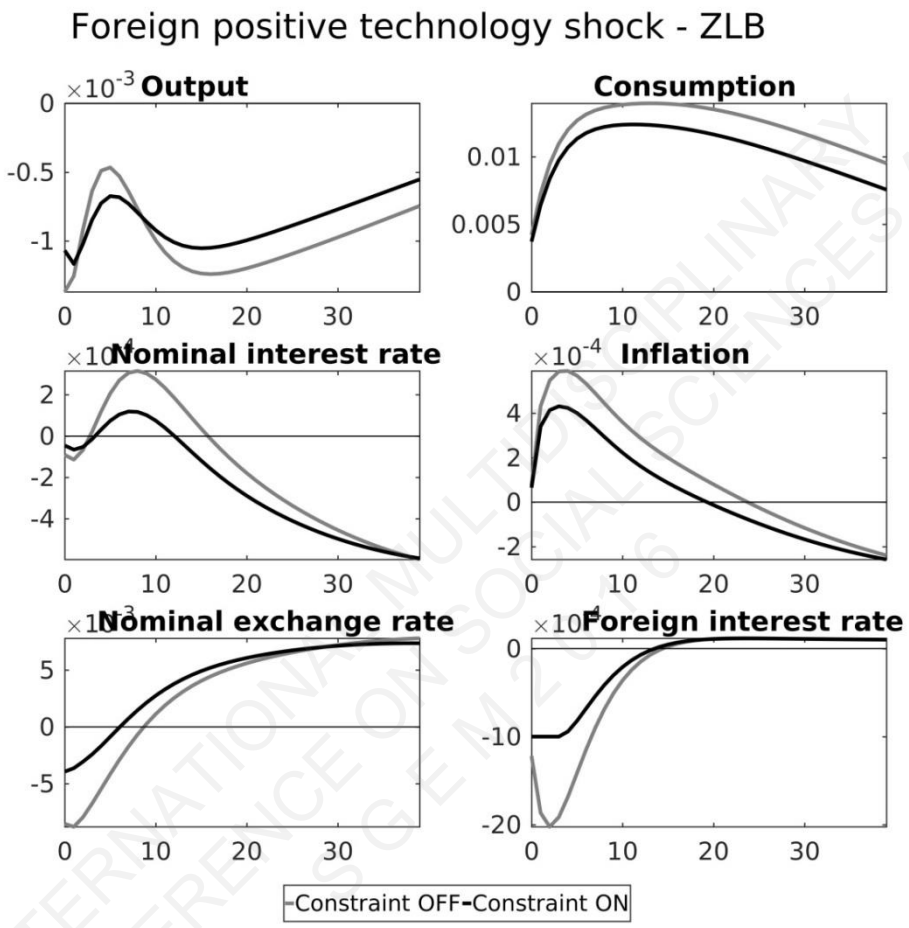


Figure 4: The impulse response functions of the selected variables on the foreign positive technology shock

The last presented result is the analysis of the impact of the unexpected capital inflows into the domestic economy. We compare the floating regime of the exchange rate and the case of asymmetric commitment, i.e. publicly declared level of nominal exchange rate that will be defended against further appreciation. The capital inflows may be linked to unexpected change of monetary policy in some countries, for example decrease of interest rates below zero, or leaving the fixed regime. These events occurred in last months and possibly induced current intervention against the appreciation of the Czech Koruna.

The positive capital inflows shock directly influences the nominal exchange rate that appreciates. Subsequently, the nominal interest rate decreases and consumption increases due to the intertemporal substitution effect. The appreciation causes the decline in output. The asymmetric commitment mutes the appreciation and also the decline in output and nominal interest rate. Generally, it stabilizes the real variables,

nevertheless the central bank must buy foreign currency to hold the exchange rate above declared level. The defense against appreciation is less difficult than the opposite, because central bank may "print" domestic currency to intervene and it is not dependent on the foreign exchange reserves, but the increased monetary base may cause inflationary risks that are desirable now, but may be dangerous in the future.

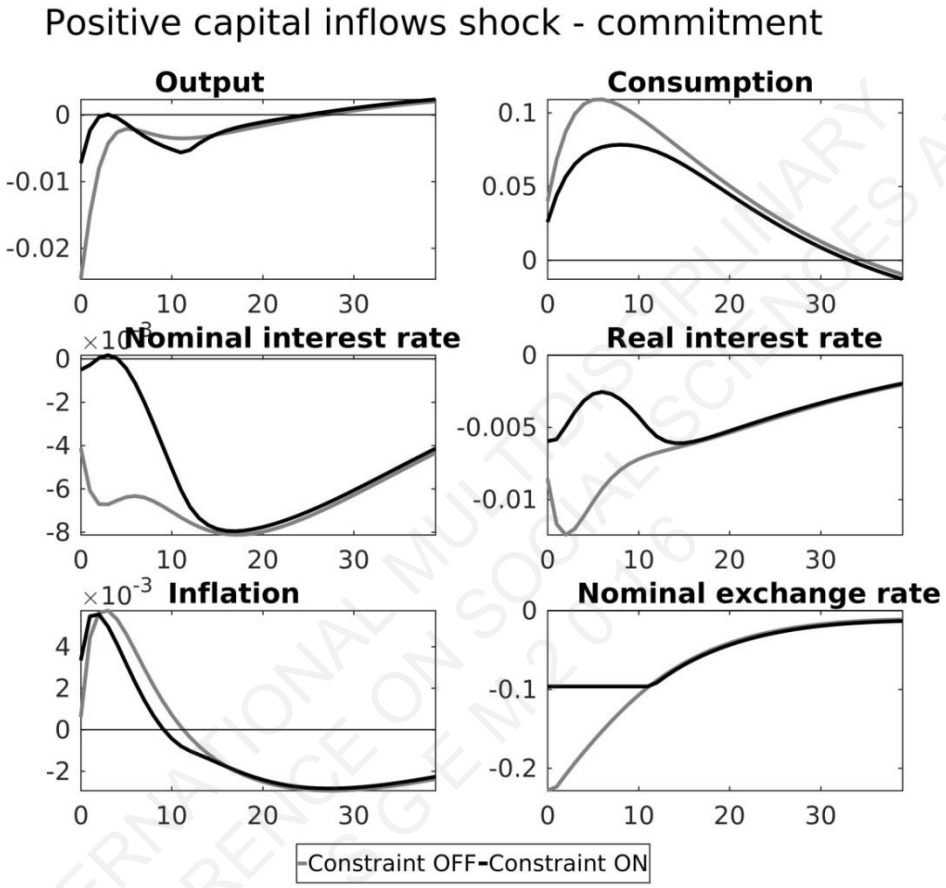


Figure 5: The impulse response functions of the selected variables on the foreign capital inflows shock.

CONCLUSION

In the provided paper we dealt with the Zero Lower Bound on interest rates and its impact on the small open economy. The second objective of the paper was the impact of the unexpected foreign capital inflows on the small open economy. We used the dynamic stochastic model of general equilibrium estimated on Czech and Eurozone data series that represents our small open economy. The constraints in the model are modelled using the approach proposed and developed by Tom Holden in [4].

The analysis of the simulated trajectories and the impulse response functions suggests that the presence of the Zero Lower Bound on the foreign interest rate creates pressure on appreciation of the domestic currency and decreases the foreign inflation rate which influences whole price level in the domestic economy. The ZLB in the foreign sector has downwards effect on domestic interest rate.

The unexpected capital inflows in the domestic economy have direct effect on nominal exchange rate that appreciates. The monetary authority may influence the FX rate by interventions that mute the effect of the capital inflows. The intervention compensates the decrease in nominal interest rates and decline in output. On the other hand, central bank must increase the monetary base and that may bring inflationary risks.

ACKNOWLEDGEMENTS

This work is supported by funding of specific research at Faculty of Economics and Administration; project MUNI/A/1040/2015. This support is gratefully acknowledged.

REFERENCES

[1] Alpanda, S., Kotzé, K. and Woglom, G., The role of the exchange rate in a New Keynesian DSGE model for the South African economy. South African Journal of Economics, 78: 170–191. doi: 10.1111/j.1813-6982.2010.01239.x 2010

[2] Calvo, A. Staggered prices in a utility-maximizing framework. Journal of Monetary Economics. 12 (3). Pp. 383-398

[3] Holden, T. and Paetz, M.: Efficient simulation of DSGE models with inequality constraints. Discussion Paper 1612, School of Economics, University of Surrey. 2012

[4] Holden, T.: Existence, uniqueness and computation of solutions to dynamic models with occasionally binding constraints. Component of the DynareOBC tool.

https://github.com/tholden/dynareOBC School of Economics, University of Surrey. 2016

[5] Montoro, C. and Ortiz, M.: Foreign Exchange Intervention and Monetary Policy Design: A Market Microstructure Analysis. Third draft. 2013.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE INFLUENCE OF THE EXTERNAL ENVIRONMENT ON VALUE PROPOSITION OF CZECH COMPANIES: RESEARCH RESULT PRESENTATION

Peter Kita

University of Technology of Brno, Faculty of Business and Management, Department of management, **Czech republic**

Abstract

Innovation is gaining an ever greater importance in the economic. It offers not only advantages to the customer but also improves competitiveness in a global scale. One of its premises is knowledge of the external environment in order to cooperate with stakeholders. The article's objective is to analyze the external environment of Czech companies from the perspective of marketing and commercial activities as a significant source of value proposition innovation. The link between the article's topic and the innovation policy of the European Union is identified. The article is part of the research project FP-S-15-2627 "Management challenges: theory and practice" of the Brno university of Technology.

Introduction

Modern day markets are driven by innovative value propositions which comprise a complex process starting by market research, new product and technology research and development, and gradual adoption by households and companies. Studies prove that innovation is an indispensable element of competitiveness of companies, regions, countries, and the European Union as one of the main source of knowledge. The concept of innovation means that innovations are vital for a company's long term success and competitiveness. The article's objective is to analyze the influence of the external environment on the value proposition of Czech companies from the perspective of commercial and marketing activities.

While managing innovation processes external factors have to be taken into account. The number and character of relationships with the external environment influence and determine the nature of a particular innovation.

1. Theoretical background

Every company is located in a specific environment which can be divided into an external (macro-environment and particular market) and internal part (includes company specific characteristics, corporate culture [7], management, specific processes, structure; formal and informal relationship). A company oriented at its customer [2], thus uses its external environment as the main source of information for product innovation.

The macro-environment influences every subject participating in the market. It comprises of economic, political, technological, legislative, environmental [4] and international dimensions [5]. Constant change has a considerable impact on corporate activities, as well as the company as a whole. Thus, paying attention to environmental shifts is imperative.

Innovation opportunities are located in another kind of external environment, according to P. Millier [10]. The national, i.e. European system of innovation support. Institutions, in the Czech Republic, which are an example of an innovate national environment are the The Agency of Technology of the Czech Republic, The Technology Center of the Academy of science of the Czech Republic, etc. According to the National Economic Committee of the Czech government to aid innovation efforts in the Czech Republic it is necessary to revisit the national evaluation system of applied research and experimental development in research facilities. It is also necessary to improve the legislative framework of cooperation among research facilities and companies, and stimulate the offer of university programs and lifelong education in innovative entrepreneurship.

Market influences comprise stakeholders (mainly suppliers, competition, customers, governance, non-governmental organizations, the public, shareholders, etc.). Each stakeholder represents a different interest, thus shape the marketspace. Their influence also has a reverse effect on other participating parties. Recognizing what shapes the marketspace necessitates market research to describe how each actor of the market interacts with each other and inspires them to create innovative solutions.

2. Methodology

The external environment in which Czech companies develop marketing and commercial efforts is best described by its turbulent character and discontinuity. The course of the economic cycle is barely predictable, product life cycles are being fundamentally changed which renders their course difficult to predict, judging from past observations. This course of events can be understood as a entrepreneurial challenge to find new opportunities for innovation in a rapidly changing environment. The limited scale of the paper is the reason for the utilization of a selective approach to the issue. The hypothesis is: The external environment of Czech companies is an important factor in value proposition innovation from the perspective of their marketing and commercial efforts. Monitoring of this issue is part of company management. A competitive company should be able to offer an innovative value proposition at least on par with its competition.

Though, innovative thinking isn't spontaneous, it is necessary to obtain information and create a proper image of the environment in which companies operate. This can help the creation of an effective strategy which would minimize the negative impact on the launching corporate activities. This means, customer base structure and the ability to attract new qualified employees.

The results of a survey, conducted in 2015 and 2016 on 115 companies in the Czech Republic (producers and service providers), describe particular aspects linked to the issue. The sample was random and without concrete criteria. Manufacturing companies were divided by number of employees and profit: micro firms up to 10 employees, small companies up to 50 employees, medium-sized companies up to 250 employees, large companies with 250 and more employees. Each of the 115 companies generated a profit. Face-to-face interviews were as a quantitative research method. A standardized questionnaire was used as a tool for gathering data.

3. Research results

This part states the particular research results which describe the perception of chosen macro-environmental, market factors, as well as relationships among external stakeholders and management activities.

3.1. Perception of chosen macro-environmental influences

If a company, based on analysis, is able to identify existing or potential opportunities and barriers, it is also able to define its mission, strategy, and achieve long term goals. The survey confirms that macro-environmental influences are an opportunity for innovation in these cases (table 1).

Table 1 – Perception chosen macro-environmental factors as an opportunity

Environmental factors	Opportunity (%)	Environmental factors (%)	Opportunity (%)
Development of the internet	65	Governmental influence	11
Foreign market demand	58	NGO activities	10
Technological accessibility	57	Currency fluctuations	10
Finance accessibility	50	Unethical competitive behavior	10
New material accessibility	43	Export regulation measure	8
Industrial convergence	34	Price cut measures	8
Product distribution	34	Illegal competitive behavior	7
Increase in importance of ecological factors	26	Influence of different economical-political systems	6
Customer behavior changes	23	Cultural diversity	5
Investor demands and requirements	20	Market instability	4
Legislative	15	Competition intensification	4

Source: own processing

Innovation can be limited by numerous factors. Companies can find themselves in conditions, in which the don't engage in innovation at all or are hindered. It is necessary to recognize the barriers of innovation from a societal perspective, as well as from a company's perspective. From a societal perspective it is important to identify barriers to correctly focus on correcting them. From a company's perspective it is necessary to discover and analyze barriers for innovation to be able to effectuate change via company management. The classification of external factors hampering innovation are stated in table 2.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

Table 2 – Perception of chosen macro-environmental factors as barriers to innovation

Environmental factors	Barrier (%)	Environmental factors	Barrier (%)
Competition intensity increase	72	Ecological factor importance increase	27
Unethical competitive practices	72	Investor demands and requirements	20
Price cutting pressures	71	Financing accessibility	17
Market instability	69	Influence of various economic and political systems	16
Illegal competitive practices	65	Industry convergence	16
Changes in competition rules	54	NGO activities	15
Currency fluctuations	54	Foreign market demand	10
Customer behavior changes	53	Resource accessibility	9
Export regulation changes	44	Product distribution	9
Governmental influence	37	Cultural diversity influence	8
Legislative	36	Development of the internet	5

Source: own processing

3.2. The market environment

The main aim of the study was at marketing activities which the company uses in search of commercial opportunities with regards to the influence of stakeholders.

Table 3 states how the marketing manager is confronted with the innovation of the value proposition first identifies customer needs (95%), market segment (77%), then focuses on product features which should be launched at the right time (70%), at the right place (65%), at the right price (80%).Based on the survey results, Czech companies are mainly customer oriented.

Table 3 – Marketing activity utilization in the for market opportunities

Marketing activities	Utilization (%)	Marketing activities	Utilization (%)
Customer need research	95	Market entry timing	70
Marketing goal setting	81	Product market positioning	69
Customer satisfaction measurement	81	Distribution channel choice	65
Market research	80	Product adaptation	64
Pricing	80	Media choice	60
Market choice and segmentation	77	Marketing aktivity measurement	52
Sales promotion	74	Foreign market choice	49
Marketing communication customization	71	Pricing strategy choice	17

Source: own processing

3.3. Relations among external stakeholders and company management

External stakeholders [13] participate on innovative value creation in different ways depending on their place in the value chain. Thus, they significantly participle into company management activities: planning, organizing, personal management, financial management, stimulation, commercial activity management, controlling, production process management, information management, etc. Since, innovation thoughts don't appear spontaneously, the company should cooperate with the numerous sources of their creation, thus be able to:

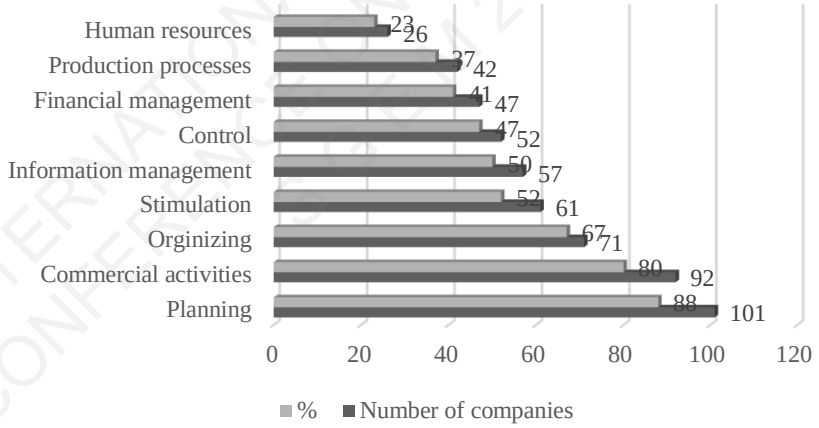
- listen to the customer opinions,
- listen to suppliers and other participants in the vale chain
- listen to expert opinions: innovation centers, science academies [3], research centers, etc. [9].
- Find information in the media, at their distributors, competitors, habitants, governmental institutions, etc.

Due to the limited range of the paper we only state some key external sources of information to illustrate survey results.

3.3.1. Relations between customer and company management

Managing and building relations with customer [1] is key for any company which upholds the customer as their number one priority. The customer becomes an important factor in product innovation (figure 1).

Figure 1: Relations between customers and company management

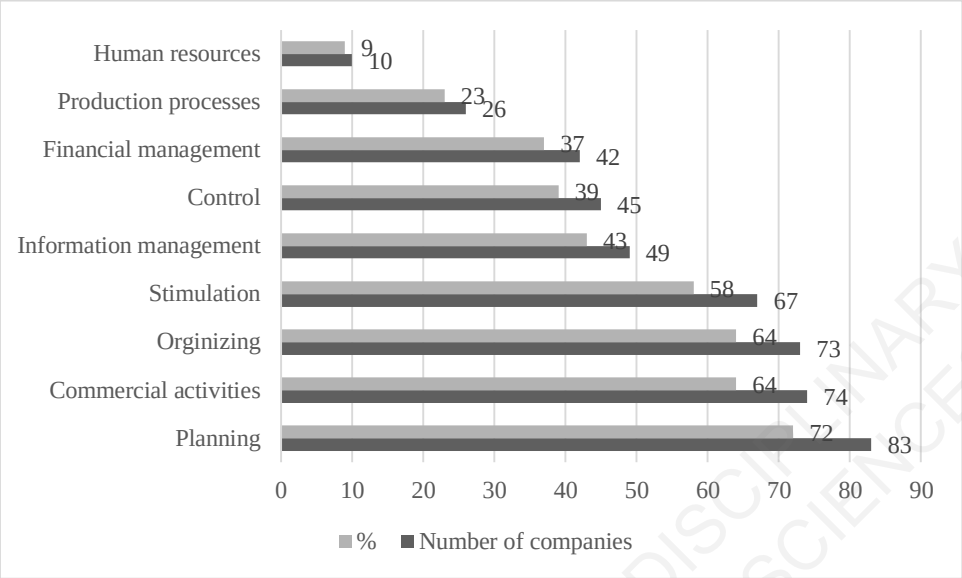


Source: own processing

3.3.2 Relations between suppliers and company management

Supplier are chosen based on the professionality and competitiveness while it is expected of them that these relationships are built on trust. These relationships form the foundation in the process of planning (72%), selling (64%), and other activities like: organization (64%), financial management (58%), control (43%), production processes (39%), information management (37%), employee stimulation (23%), human resources (9%).

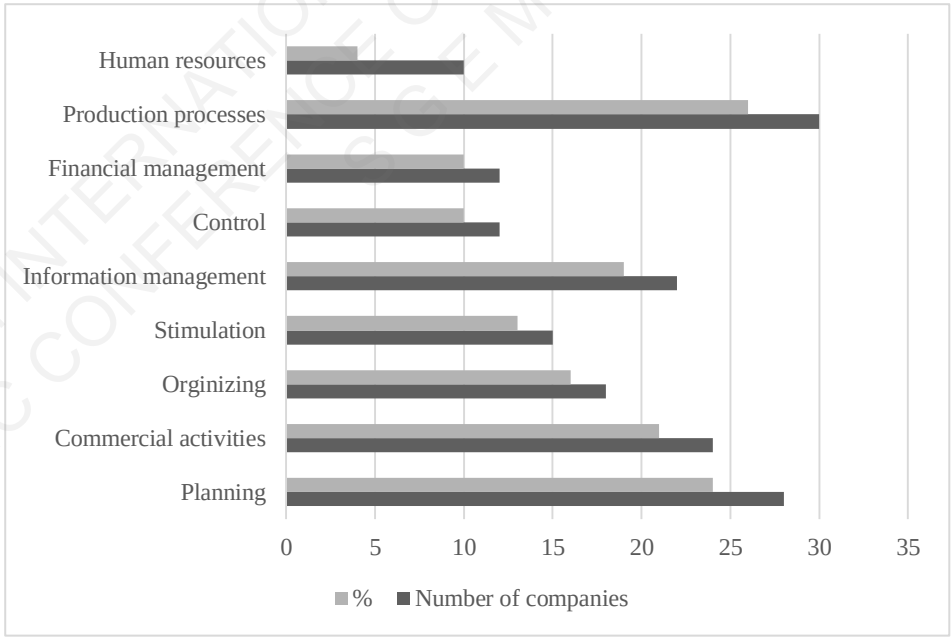
Figure 2: Relations between suppliers and company management



Source: own processing

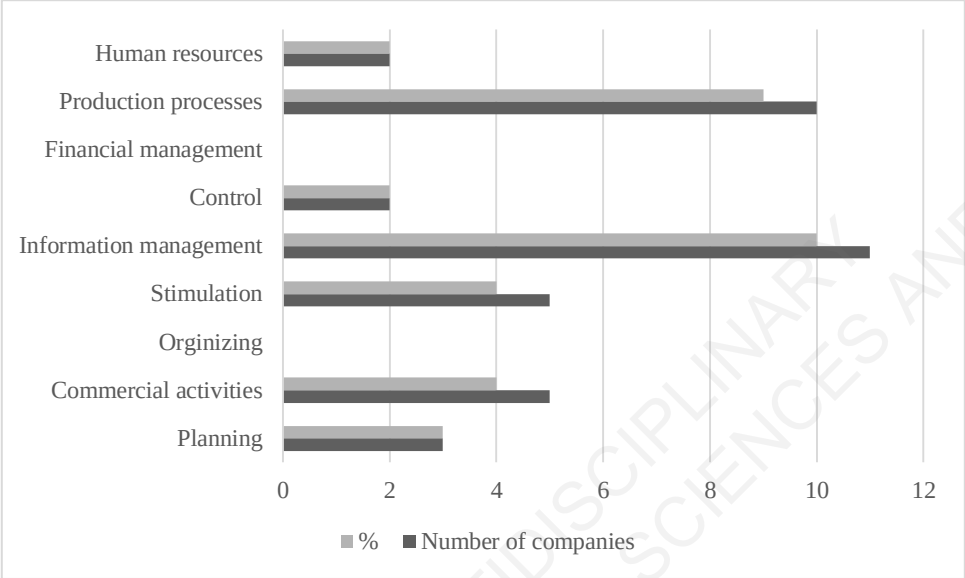
3.3.3 Relations between innovation centers and company management

Figure 3: Relations between innovation centers and company management
Source: own processing



3.3.4. Relations between the science academy, research centers and company management

Figure 4: Relations between the science academy, research centers and company management



Source: own processing

4. Discussion

Value proposition innovation has many sources. The external environment of a company and its shifts can weigh heavily on marketing and commercial activities [6], as well as other corporate activities. It is imperative to take these influences into account. The challenge is to correctly identify these influences which stem from the external environment and analyze their potential reach on the company, as well a way how to compensate and use them to their advantage. Commercial success depends on the company's ability to innovate its value proposition and optimize the interaction with its external environment, as well as among parts of management and the environment. According to Schumpeter [14], innovation is found in novel production processes, products, supplying sources, markets, and organizing. The entrepreneur is the one who activates these sources of innovation and creates novelties to provoke value transformation. The entrepreneur is always on the leading edge of change, reacts to change or provokes it to his advantage.

The survey results allow opportunity specification for innovation of Czech companies. New opportunities to apply innovative thinking demand business model innovation. It is not enough to invest into obtaining new ideas and technologies to innovation the value proposition, but also be willing to innovate the business model. It is important to note that the same innovative idea manifested in two different business models can provide varying economic results. This is enough of a reason to also innovate the business model [8].

The understanding of the relations with corporate partners is important for the formation of a company's value proposition. In this respect, to understand the company's position in the value chain, i.e. among the actors, which helps value creation. To understand the model, i.e. situate the company in a network of partners [11]. This network enables customer value creation, as well as revenue. Identification of relations with stakeholders allowed the recognition of area currently fit for improvement, in the context of customer

SCIENTIFIC CONFERENCE OF MULTIDISCIPLINARY SOCIAL SCIENCES AND ARTS 2016

integration. Those were mainly cooperation with innovation centers, science academies, and research centers.

CONCLUSION

The results show that the innovation potential is significantly influenced by the general framework for a company's functioning defined by its economic environment, social values, natural environment, and the relations with various stakeholder groups. The identification of partner networks and cooperation levels among them and with stakeholder can be subject of later research to better understand sources of value proposition innovation.

REFERENCES

[1] Kita, P.; Kitova Mazalanova, V. Grossmanova, M. 2015.Personality of consumer as a factor of the purchasing behaviour in the retail unit. In *International journal of interdisciplinarity in theory and practice.* pp. 38-43.
[2] Kita, J., Grossmanova, M., Kita, P., Konstiak. P. 2009. Market orientation of the Slovak companies in the field of purchases In Revista Portuguesa de Management : revista científica. - Lisboa : Associação de Estudos e Investigação Científica do ISLA, Vol. 2, num. 1.pp. 13-25.
[3] Kitova Mazalanova, V., Kita, P., Matulcik, J. Strelinger, J. 2015. Policy of privatization in the context of neoliberal changes.In Pour une Europe forte: renover les structures economiques, entrepreneuriales, politiques, territoriales et educative. Banska Bystrica : Belianum. pp. 560-572.
[4] Konstiak, P. et al. 2016. Merchandising management in the context of active sale and sustainable development. Cracow : Foundation of the Cracow University of Economics. p.125.
[5] Konstiak P. 2009. Maloobchod v podmienkach globalizacie.In Pristupy k ponuke podnikov v podmienkach trvalo udrzatelneho rozvoja .Bratislava : Vydavatelstvo EKONÓM, 2009. pp. 180-231.
[6] Konstiak, P. 2001. Niektore aspekty globalizacie a internacionalizacie obchodu na Slovensku / In Trendy rozvoja teorie a praxe v obchodnom podnikani v ere globalizacie : zbornik z medzinarodnej vedeckej konferencie, Mojmirovce, 29.-30. november 2001. - Bratislava : Obchodna fakulta Ekonomickej univerzity v Bratislave, 2001. p. 28-37.
[7] Lukasova, R., Novy, I. et al. 2004. *Organizační kultura*. Praha. Grada Publishing, p. 20.
[8] Magretta, J. 2002. Why business models matter. *Harvard Business Review*, 80 (5).
[9] Mazalanova, V.2012. Fenomen privatizacie i v statnom vzdelavani? In Sapere Aude 2012. Hradec Kralove : Magnanimitas. pp. 551-559.
[10] Millier, P. 2013. *Créer de la valeur a moindre cout*. Paris: Pearson, p.68.
[11] Morris, M., Schindehutte. M., Allen, J. 2005.The entrerpreneur's business model:toward a unified perspective. *Journal of Business Research*, 58 (6).
[12] Shane, A. S. 2007. *Finding fertile grounds*. New Jersey: Pearson Education, Inc.
[13] Simberova, I. 2007. *Rizeni vztahu se stakeholdry na prumyslovych trzich v kontextu současnych marketingových koncepci.* Brno: VUT FP, 2007.p. 128-130
[14] Verstraete, T., Jouisson-Laffitte. 2009. *Business model pour entreprendre*. Bruxelles: De Boeck.

THE INNOVATIVE INFRASTRUCTURE DEVELOPMENT IN THE RUSSIAN ARCTIC

Assoc. Prof. Maria Radion[1]

Prof. Nikolay Didenko[2]

Assist. Diana Zenchenko[1]

[1] Tyumen State University, **Russia**
[2] Peter the Great St. Petersburg Polytechnic University, **Russia**

ABSTRACT

The formation and development of innovative infrastructure in the regions of Arctic zone of the Russian Federation is one of the priority lines of these territories complex development. Structural analysis of the concept of regional innovative infrastructure, its basic subsystems, international experience of innovative infrastructure formation in the Arctic countries (Canada, the USA, Norway and Denmark) are presented in the paper. The typology of Arctic countries is realized on the basis of analysis of innovative development features and factors. Trends as well as problems of the innovative development of the Russian Arctic zone during the period from 2011 to 2015 are revealed. In conclusion, the model of effective formation of innovative infrastructure development in the Russian Arctic zone is presented, as well as basic prospects of its development are identified.

Keywords: innovation ecosystem, innovative development, Arctic.

INTRODUCTION

The idea of the Arctic territories development acts as one of the most priority directions in the world economy evolvement today. Deliberate attention to the circumpolar region can be largely explained due to significant reserves of hydrocarbon resources. By the way, there are also a number of other strategically important issues, such as presence of globally important biological resources, cross-polar flights and Northern Sea Route development, impact on the world environment. More efficient use of the Arctic potential involves an appliance of new technologies. The Arctic zone upon the whole is a unique mechanism of internal innovation processes development, which are carried out through the functioning of innovative infrastructure. In such a situation the need for its formation and furthermost effective operation has definitely increased, as well in the Russian Arctic regions.

METHODOLOGY

Analysis of classical and up-to-date interpretations of the term innovation environment stipulates the necessity to clarify definition in the context of regional development. Innovation environment must be seen as a set of socio-economic, organizational, legal, political and other conditions and factors, integrating mechanisms and tools in order to enable and facilitate implementation of innovations and development of innovation infrastructure, as well as introduction and implementation of effective and innovative projects aimed to improve regional socio-economic development rates [1]. In its turn, an efficient innovation infrastructure should be an open, coordinated, focused, dynamic

and flexible system of institutions providing structural consistency, optimal proportions, which promote the most efficient use of natural and productive resources, research and financial potential; implementation of all the innovation process stages (from technological development to an output of a new high-tech product to a market); inducing of innovation activity and susceptibility to enhance a territory competitiveness and quality of peoples' lives ultimately.

Arctic territories are the parts of eight countries: Russian Federation (Russia), USA, Canada, Denmark, Iceland, Norway, Sweden, and Finland. As a result of the matrix, Russia acts as a leader in the degree of differentiation in the industrial specialization. Overall, today Arctic territories play a role of raw materials net exporters in the global labor division. They are generally defined as the countries that are highly depended on import finished products supply. Service sector can be distinguished as a strategically important developing sector. At the same time, many countries of the circumpolar area are the leaders in terms of innovation development (see Table. 1).

Table 1. Arctic countries' Global Innovation Index (GII) dynamics, 2007-2015 [2].

Country	2007	2008	2009	2011	2012	2013	2014	2015
Sweden	12	3	2	2	2	2	3	3
USA	1	1	11	7	10	5	6	5
Finland	13	13	6	5	4	6	4	6
Denmark	11	8	5	6	7	9	8	10
Canada	8	11	12	8	12	11	19	13
Iceland	20	20	1	11	18	13	12	16
Norway	25	14	10	18	14	16	14	20
Russia	54	68	64	56	51	62	49	48

During the period all the countries, except the US and Canada, have improved their position in the ranking. The analysis of GII dynamics allowed us to draw some conclusions, such as: (1) Sweden is in the top 25 countries on all parameters constituting GII. That demonstrates its high level of innovation. (2) The strength of the US is first-class universities and active research investments. (3) Innovation support infrastructure in Finland and Denmark requires a significant change, since recently there has been a regression in this sector. (4) Public expenditure on secondary education in Canada is an aspect that is worth paying attention to, because Canada took only 65th position within this indicator in 2015. (5) The value of investors' protection index and the percentage of graduates in science and engineering in Iceland has definitely increased. (6) Similar trend was observed in Russia, when the level of employment in knowledge-intensive service sector, the share of women with higher education and the number of national patent applications grew up [3].

In order to identify positions of the Arctic countries zone on the level of innovation development there was carried out cluster analysis using statistical software product «PASW Statistics 18» by means of «K-means» method including 7 indicators, characterizing the state of research capabilities, innovation activity of enterprises and a quality of innovation policies. Top-group with high levels of innovation development involves six countries, excluding Canada (above average level) and Russia (world average level).

Results of the analysis on research activities and strategies for the Arctic development lead to the conclusion that natural resources, scientific activities, environment preservation discussed in [4], protection of indigenous population's interest are the most priority lines of development in the Arctic states [5]. In addition, Nordic countries are characterized with convergence strategy [6] in the implementation of innovation policy and encouraging an extension of international scientific and technical cooperation forms inside the Arctic Council. Divergence strategy is typical for the United States and Canada.

Russia takes the position of an outsider in terms of innovative development among the Arctic countries. We have studied the papers considering socio-economic development in the Arctic by Romashkina [7], Rudenko [8], [9]. The Russian Arctic zone includes territories or parts of 8 regions: Murmansk region (MR); Nenets Autonomous District (NAD); Chukotka Autonomous District (CAD); Yamalo-Nenets Autonomous District (YNAD); Komi Republic (KR); The Republic of Sakha (Yakutia, RS); Krasnoyarsk region (KR); Arkhangelsk region (AR) (see Table 2).

Table 2. The matrix of the main specialization sectors in the Arctic

Region / Industry	MR (10)	YNAD (7)	CAD (6)	AR (6)	RK (5)	KK (5)	RS (5)	NAD (4)
1. Mining	+ 17%	+ 53%	+ 35%					+ 71%
2. Manufacturing	+ 13%							
3. Production and distribution of electricity, gas and water	+ 6%		+ 12%					
4. Wholesale and retail trade, repair of motor vehicles, household goods and personal items	+ 10%	+ 11%						+ 6%
5. Transport and communications	+ 9%	+ 9%						+ 5%
6. Real estate, renting and business activities	+ 8%	+ 8%						
7. Public administration and military security	+ 10%		+ 11%					
8. Health care and social services	+ 8%		+ 5%					
9. Construction	+ 9%	+ 9%	+ 11%					
10. Other industries	+ 12%	+ 10%	+ 16%					+ 9%
11. Heavy shipbuilding				+				
12. Fisheries				+			+	
13. Diamond mining				+			+	
14. Pulp and paper industry				+				
15. Food Industry				+	+	+		
16. Timber industry, woodworking				+				
17. Fuel industry					+	+		
18. Light industry					+			
19. Electricity					+	+		
20. Production of building materials					+		+	
21. Non-ferrous metallurgy						+		
22. Reindeer, fishing and hunting						+	+	

% - share of industry in the total GRP; + - presence of an industry in the GRP structure.

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SGEM2016 SOCIAL SCIENCES AND ARTS

The most differentiated structure of GRP is typical to Murmansk region. The mining industry leads in four Arctic regions. The following Arctic regions' innovative development (2011-2015) ratings were considered: (1) the Russian Presidential Academy of National Economy and Public Administration (RANEPA), (2) the National Association of Innovations and Development of Information Technologies (NAIDIT), Higher School of Economics (HSE) [10]. As a result, it was concluded that current level of Russian Arctic development could be defined as uneven and multi-directional differentiated (see Figure 1).



Fig. 1. Typology of Russian Arctic zone regions on the level of innovation development

Krasnoyarsk Region takes the leading position among the Russian Arctic zone regions due to its industrial specialization (96 percent of Russia's nickel production, 95 percent of the Russian cobalt production, 55 percent of Russia's copper production, 35 percent of global palladium production) and high level of expenses intensity for technological innovations (4.9 percent, which is more than twice as many as an average one in Russia). In addition, Krasnoyarsk Region boosts figures on volume of attracted grants from federal budget aimed to the development of innovation support infrastructure for small and medium-sized innovative enterprises.

Krasnoyarsk Region is also worth paying attention to by reason of its mechanism for implementing science, technology and innovation development policy. The last one is differed in having rules for examination of scientific and technical programs and projects, innovative projects financed by regional budget, monitoring of innovative activity, effectiveness assess of spending allocated for state support of scientific, technical and innovative activity, the presence of the Provincial registry of scientific and technological development and innovation projects.

The second group of regions showing positive dynamics of innovative development includes Murmansk Region and Yamalo-Nenets District. The greatest increase is observed in the position of Murmansk Region – this one coordinates 100% of Russian apatite and nepheline production, 45% of nickel volume in Russia, 16.2 percent of Russia's fish catch. Despite the fact that the level of innovation behind the average for the Russian Federation, the region distinguishes an efficient use of existing capacity (Russian-average indicators of publication activity and technology export) and the presence of port special economic zone "Murmansk". Yamalo-Nenets Autonomous District has a relatively stable level of basic innovation indicators' development; share of enterprises, which are aimed at solving problems and saving material costs of fuel

and energy resources is higher here than the average for Russia. Nevertheless, one of the features of YNAD is low research capacity [11].

The third group includes all other regions of the Russian Arctic, excluding CAD and NAD, in spite of huge natural resources availabilities. Inertia of the enterprises in the implementation of innovations, low social conditions of innovative development, lack of scientific testing facilities, lack of relevant regional development institutions, generally poor conditions of high-tech companies' development and unformed or passive innovative environment in whole could serve as the reasons for such changes.

The analysis shows that there are various factors influenced on the creation of special innovation climate. Complex composition of the Arctic and especially regions of the Arctic zone dictates the use of a differentiated approach to an innovation environment formation for each of the Arctic region.

An analysis of the relationship between total volume of innovative goods and services in the Russian Arctic regions from the one side and the history of the formation and current level of innovation infrastructure development from another one has shown that the quality indicator – an effectiveness of an innovation infrastructure functioning is a fundamental, but not their number (see. Table 3).

Table 3. The structure of Innovation support infrastructure facilities in the Russian Federation Arctic regions

Region	IDPC	TP	TIC	FSI	BI	CC	EPC	TP	CUC	IEC	BSC	CTT	Total
KR	1	1	1	1	4	0	1	2	2	1	1	1	16
NAD	0	0	0	0	2	0	0	1	2	0	0	0	5
MR	1	0	0	0	2	0	0	1	2	0	0	1	7
KR	0	0	0	0	1	0	0	1	1	0	0	0	3
AR	0	0	2	1	2	1	0	1	2	0	0	1	10
RS	0	0	0	0	2	0	0	2	1	0	0	0	5
NAD	0	0	0	0	0	0	0	0	0	0	0	0	0
CAD	0	0	0	0	0	0	0	0	0	0	0	0	0

IDPC – State-owned companies implementing Innovation Development Programs; TP – technology platforms; TIC – Territorial innovation clusters; FI – Financial support institutions; BI- Business incubators; CC – Certification Centers; EPC – Engineering & Prototype Centers; TP – technoparks (including science parks); CUC – Common Use Centers; IEC – Information Expertise Centers; BSC – Business Support Centers for small and medium enterprises; CTT – Center for Technology Transfer.

The relationship between total volume of innovative goods and services in the Russian Arctic regions and the history of the formation and current level of innovation infrastructure development presented in the Figure 2.

MODEL

To improve the innovative development it is necessary to create an efficient innovation infrastructure by means of such conceptual principles as consistency, purposefulness, collaboration, flexibility, adequacy, alternativeness, publicity, legal security, accessibility, regional identity [12]. The formation of the target innovation infrastructure should include the following steps: the global innovation trends and world practice analysis; the identification of the key problems and advantages of regional innovative development; the formation of long-term competitive position in the world; setting goals and objectives of target innovation activities; the formation and realization of

regional innovation ecosystem development programs. It is especially important to monitor and efficiency control the program realization by measuring the results of entities' innovation activities.

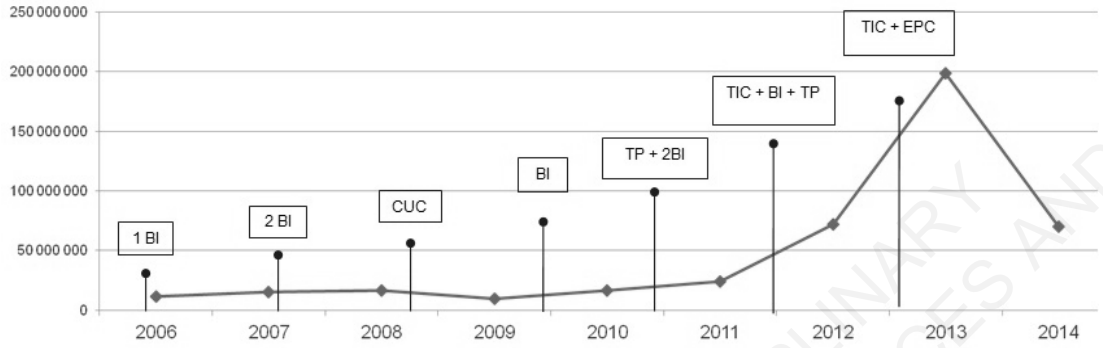


Fig. 2. Dynamics of the total volume of innovative goods and services produced in the Russian Arctic regions, 2006-2014

At the moment, Russia has created a lot of innovation support tools and innovation infrastructure facilities. However, some of them operate inefficiently due to a lack of coordination between them, poor cooperation, horizontal and vertical integration [13]. The regional innovation support infrastructure system should correspond to the regional strategic plan, aimed to improve regional socio-economic development (see Figure 3).

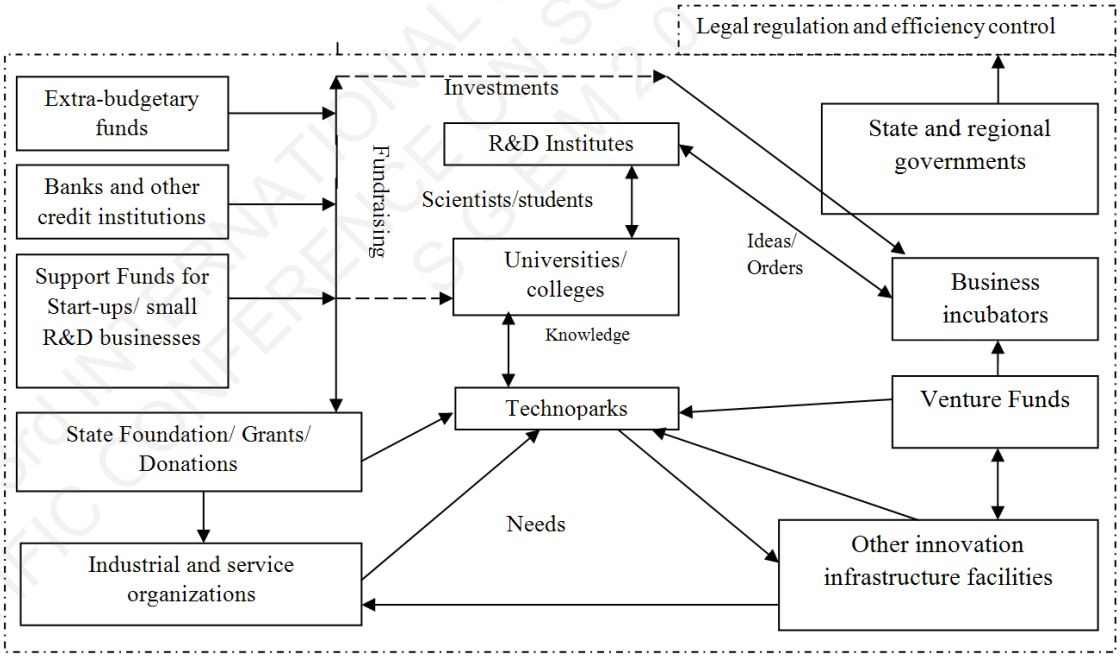


Fig. 3. The target model of regional innovation support infrastructure

The innovation enterprises are the main participants of the innovation process, so their problems should be solved as a high-priority project. Firstly it means the fundraising problems. The research of the world practice shows that one of the most efficient sources of the innovation business financing abroad is the Venture Funds that are such undeveloped in Russia [14]. Another problem is to market a new product. So-called integrators or brokers do not only connect the buyers and sellers, but what is more

important they should collaborate with another regional and international innovation support institutions. Benchmarking should be used to coordinate the scientific research in the Arctic zone, including the international cooperation. Despite the arctic countries there are a lot of others (for example, Asian countries) are interested in participating in further exploration of Arctic areas in partnership with the Russian Federation.

CONCLUSION

An efficient regional innovation infrastructure as a coordinated system should be formed to promote the most efficient use of natural, human, financial, marketing and productive resources, research and development potential; implementation of all the innovation process stages; inducing of innovation activity and susceptibility to enhance a territory competitiveness and quality of peoples' lives ultimately. The usage of authors' models will provide the creating of favorable conditions for innovations growth in the region. Intensive research and development activities in the regions of the Russian Arctic will allow efficient use of rich natural resource potential of the territory, which in the future can have a positive influence on the development of the national economy as a whole, to strengthen its position in the global area.

ACKNOWLEDGEMENTS

The paper is based on research carried out with the financial support of the grant of the Russian Science Foundation (Project No. 14-38-00009, The program-targeted management of the Russian Arctic zone development). Peter the Great St. Petersburg Polytechnic University.

REFERENCES

[1] Lundvall B.A. National System of Innovation. Towards the Theory of Innovation and Interactive Learning, London: Pinter Publishers, 1992.

[2] Global Innovation Index Report. 2015. https://www.globalinnovationindex.org

[3] Strakova L. Benchmarking Regional Knowledge Demand and Supply in Emerging KnowledgeRegions: A Study across Four European Regions, Regional Studies Association Annual International Conference, Prague, 2008.

[4] Rudenko D., Skripnuk D., Environmental Kuznets curve: the case of Arctic Russian regions, International Multidisciplinary Scientific GeoConference-SGEM. 16th International Multidisciplinary Scientific Geoconference (SGEM), Jun 30 – July 6, Albena, Bulgaria, vol. 3/issue 5, pp. 209-216, 2016.

[5] Rudenko D., Didenko N. The System of Well-being Indicators in the Russian Arctic Regions, The European Proceedings of Social & Behavioural Sciences, Vol. VII, pp. 514-521, 2016.

[6] Rudenko D., Didenko N. National Disparities in the European Union: Convergence or Divergence? International Conference on European Integration, May 19-20, Ostrava, Czech Republic, pp. 813-822, 2016.

[7] Romashkina G.F. Modernization processes in the regions of Urals federal district, Sotsiologicheskie Issledovaniya, issue 1, pp. 19-+, 2015

[8] Rudenko D. The population dynamics in the Russian Arctic, M.I.R. (Modernization. Innovation. Research), vol. 6/issue 7, pp. 51-57, 2015. DOI: 10.18184/2079-4665.2015.6.4.51.57

[9] Rudenko D.Y. A comprehensive approach to the study of poverty in the region, Regional Research of Russia, vol. 4/issue 3, pp. 143-151, 2014.

[10] Pogodaeva T.V., Rudenko D.Yu. Actual tendencies of Russian Arctic region's innovation development, Modern problems of science and education, issue 6, doi: 10.17513/spno.2014.6, 2014, http://www.science-education.ru/ru/article/view?id=16005

[11] Nalimov P., Rudenko D., Socio-economic Problems of the Yamal-Nenets Autonomous Okrug Development, Procedia – Economics and Finance, vol. 24, pp 543-549, 2015.

[12] Pogodaeva T., Zhaparova D., Efremova I. Changing Role of the University in Innovation Development: New Challenges for Russian Regions, Procedia – Social and Behavioral Sciences, vol. 214, pp 359-367, 2015.

[13] Fitjar R.D. Region-building in the Arctic Periphery: the discursive construction of a petroleum region, Human geography, vol. 95B/issue 1, pp. 71-88, 2013.

[14] Gurkov I. Business innovation in Russian industry, Post-communist economies, vol. 16/issue 4, pp. 423-438, 2004.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
SGEM 2016

THE INTERNATIONAL TRADE OF SHELLED FRUIT: A LONGITUDINAL ANALYSIS THROUGH SOCIAL NETWORK APPROACH

Assistant Prof. Gioacchino Pappalardo[1]

Ph.D. Valeria Allegra[1]

Ph.D. Gaetano Chinnici[1]

Associate Prof. Salvatore Bracco[1]

Full Prof. Alfonso Silvio Zarbà[1]

[1] Department of Agriculture, Food and Environment (Di3A) University of Catania (Italy).

ABSTRACT

This paper aims to present an overview on the trade of the main species shelled fruit (Almonds, Hazelnuts, Pistachios and Walnuts) fresh or dried, with reference to the main producing Countries and geographical areas. The analyzed data refer to the period from 2002 until today, during which occurred new competitive scenarios generated by evolution of the consumption patterns, which influenced the growth and development of the shelled fruit sector. For doing this, in this paper, the network analysis approach has been used to understand the structure and the dynamics involved in the shelled fruit trade taking place between the main producing countries on a global level. The representation of international trading of shelled fruit as a network is a useful tool to understand and measure phenomena such as the globalization of the trading of shelled fruit between countries. The results show that the main producing countries have - in the last fifteen years - increased their trading of shelled fruit on "global" scales.

Keywords: Nuts, Trade, Globalization, Network Analysis

INTRODUCTION

The concept of "globalization" has, in the last twenty years, contributed to the betterment of the socio-economic conditions worldwide, though with some differences across geographical macro-areas, such as the north and the south of the world [1]. Globalization has been described as an interdependent system between countries, defined by the size and intensity of their reciprocal relations [2], [3]. In terms of international trading, globalization contributes towards an increased involvement on the part of any given country in the global trade [4]. Globalization has been extensively discussed in international economy research, which has contributed to the understanding of the structural characteristics of international trading networks [5], [6], [7]. However, an area of research that hasn't been investigated enough yet, is the one relative to the analysis of "communities" that might be present within a network of international trading [8], [9]. In this scenario the objective of the present paper, is to understand to what extent the structure of the global trading network of nuts products, has changed in the last two decades. In addition to what has already been debated in the scientific literature about the international trade of nuts products [10], [11], [12], [13], this paper aims to answer a research question not widely discussed in the scientific literature, that

is: how does the network of worldwide trading of nuts products evolved on a global scale?

In order to answer this question, we have used the network analysis approach drawing on longitudinal data (2002-2014) relative to the international trading of nuts products ([14], [15]. More specifically, through some network measures (density and network centralization) it has been possible to evaluate the structural properties of the nuts trading network over the last years and, through this, understand the dynamics of trading relations between the main producing countries on global scales.

METHODOLOGY

The evaluation of the structural characteristics of the trading network of nuts has been carried out taking into account (in a cumulative way) the following fruit (UN COMTRADE classification): 080212: Almonds, fresh or dried, shelled. 080222: Hazelnuts and filberts, fresh or dried, shelled. 080232: Walnuts, fresh or dried, shelled. 080250: Pistachios, fresh or dried. The research focused on the ten major producing countries of nuts in the world, differentiated for each product category, listed alphabetically in the following Table 1. The network measures used in the present paper are those reported on Table 2.

Table 1. List of examined countries

080212(*)		***080222(**)***		***080232(***)***		***080250(****)***	
Ranking	*Country*	*Ranking*	*Country*	*Ranking*	*Country*	*Ranking*	*Country*
1	Australia	1	Azerbaijan	1	China	1	Afghanistan
2	China	2	China	2	France	2	Australia
3	Iran	3	France	3	Iran	3	China
4	Italy	4	Georgia	4	Italy	4	Greece
5	Morocco	5	Iran	5	Mexico	5	Iran
6	Spain	6	Italy	6	Romania	6	Italy
7	Syria	7	Poland	7	Spain	7	Madagascar
8	Tunisia	8	Spain	8	Turkey	8	Syria
9	Turkey	9	Turkey	9	Ukraine	9	Turkey
10	USA	10	USA	10	USA	10	USA

Note: (*): Almonds, fresh or dried, shelled. (**): Hazelnuts and filberts, fresh or dried, shelled. (***): Walnuts, fresh or dried, shelled. (****): Pistachios, fresh or dried.

Table 2. Network measures

NETWORK MEASURES	DESCRIPTION/ WAY OF CALCULATION
Network centralization	Degree to which an entire network is focused around a few central nodes.
Network density	Number of ties in a network expressed as a proportion of the maximum

	possible number of ties.

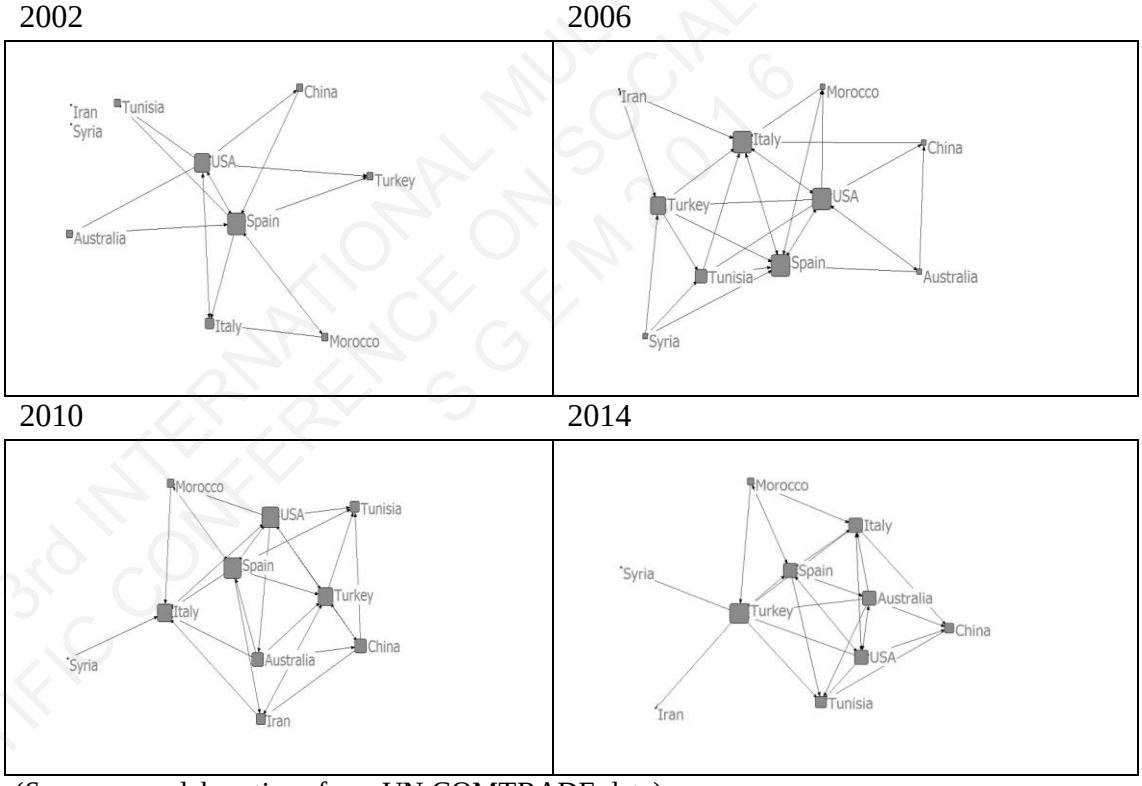
RESULTS

The results of the research of the "Almonds, fresh or dried, shelled" show that, on a global scale, the network density value has more than doubled during the examined period (2002-2014). This means that the international market of the "Almonds, fresh or dried, shelled" has become more globalized and every country has increased the number of their trading partners (Table 3).

Table 3. Values of network measures in the principal countries producers of "Almonds, fresh or dried, shelled"

NETWORK MEASURES	2002	2006	2010	2014
- Network density	5.1	9.7	11.2	12.7
- Network Centralization	50.00%	51.85%	46.30%	37.96%

(*Source*: our elaborations from UN COMTRADE data)



(*Source*: our elaborations from UN COMTRADE data)

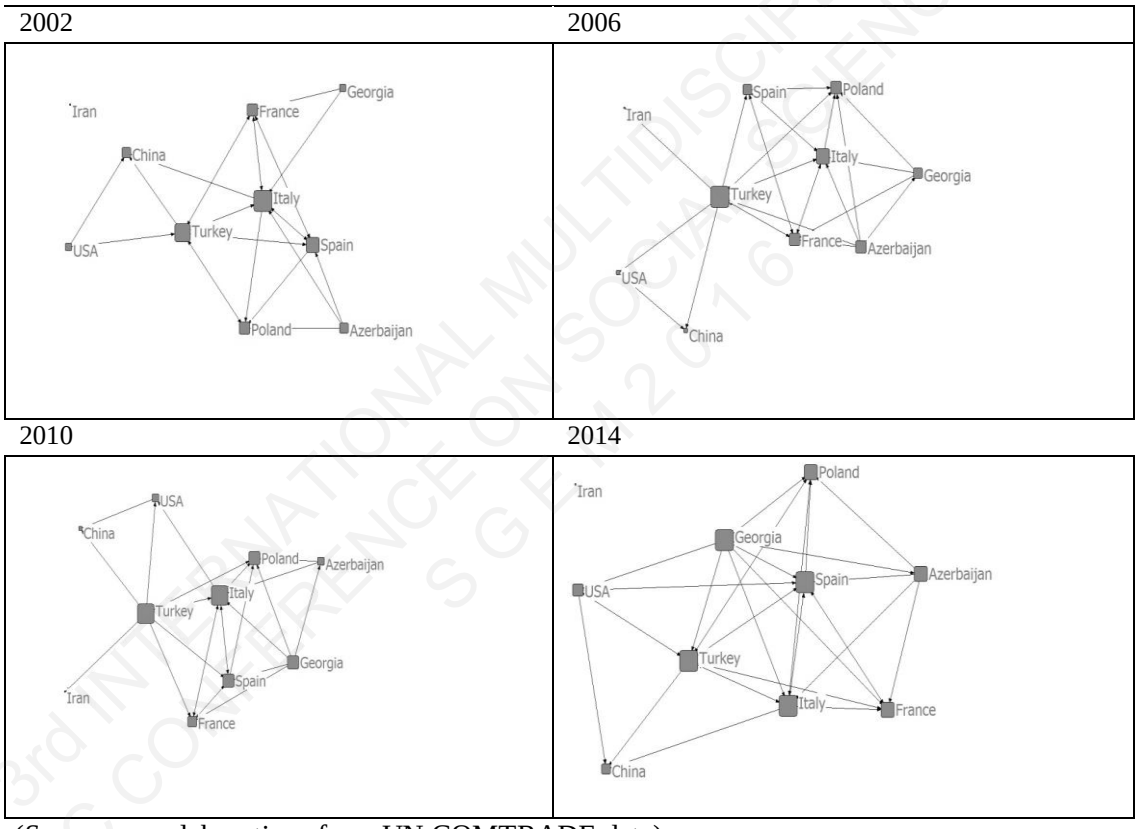
Figure 1. Graphical representation of trade relations of "Almonds, fresh or dried, shelled" among the main producers in the world

This result is also confirmed by the fact that the trading network of "Almonds, fresh or dried, shelled" has become less "centralized" in 2014 compared with the year 2002. In fact, the value of the network centralization index has decreased from 50.0% in 2002 to 37.96% in 2014. This means that the increase of trading has concerned a large number of countries over the 2002-2014 period, whilst until 2002 the commerce of "Almonds,

fresh or dried, shelled" was mainly a business of just a few producing countries, such as Italy, Spain and the USA (Figure 1). With reference to "Hazelnuts and filberts, fresh or dried, shelled", the value of the network density over the examined period, has grown with constant rates, rising from 7.2 in 2002 to 10.6 in 2010 and 12.2 in 2014 (Table 4).

Table 4. Values of network measures in the principal countries producers of "Hazelnuts and filberts, fresh or dried, shelled"

NETWORK MEASURES	2002	2006	2010	2014
- Network density	7.2	9.3	10.6	12.2
- Network Centralization	43.98%	41.67%	46.30%	38.89%



(*Source*: our elaborations from UN COMTRADE data)

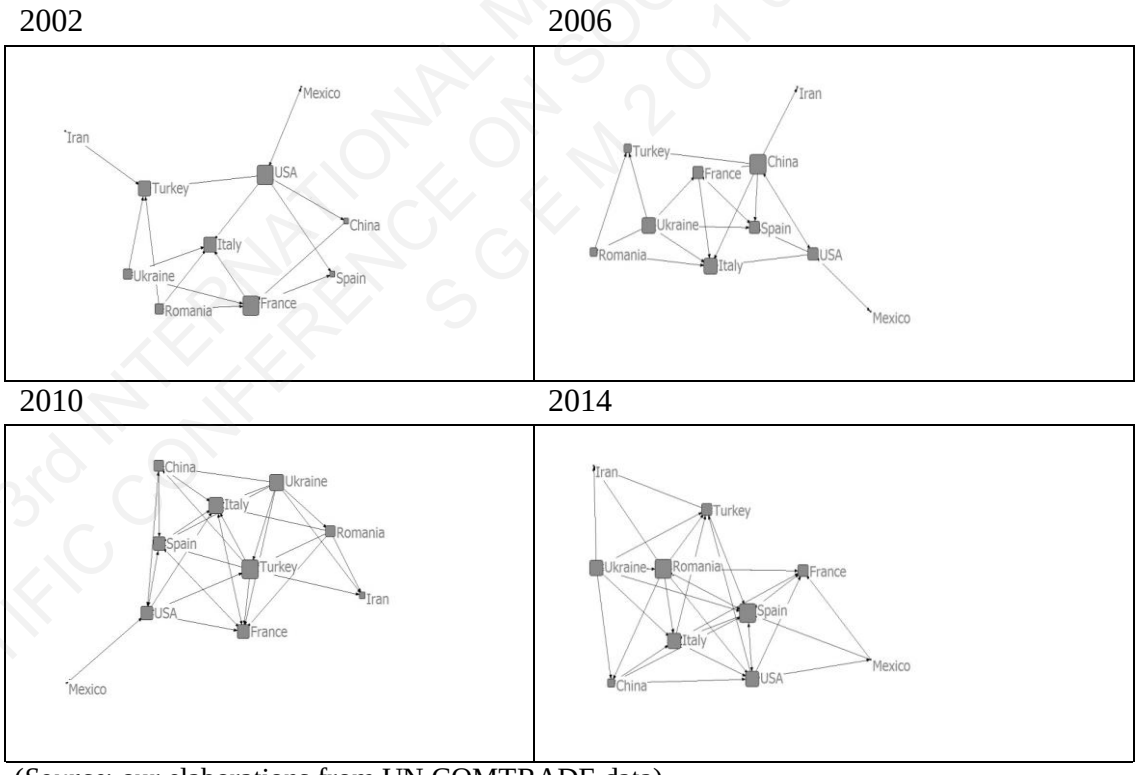
Figure 2. Graphical representation of trade relations of Hazelnuts and filberts, fresh or dried, shelled among the main producers in the world

Therefore, the global exchange of "Hazelnuts and filberts, fresh or dried, shelled" becomes more and more important in the main producing countries as well as is shown by the decrease of the network centralization degree which rose from 43.98% in 2002 to 38.89% in 2014. In fact, Turkey, Italy, France and Spain in 2002 were the most important exporting countries, while in 2014 they were joined by other countries in particular Georgia, which has gradually become one of the main exporting countries in the world (Figure 2).

Moving on to the "Walnuts, fresh or dried, shelled" and analyzing the period under consideration, it is possible to note that the value of network density has more than tripled. In fact, in 2002 the degree of density was 3.9 and then increased steadily until reaching the value of 14.4 in 2014. Therefore, the trade network of "Walnuts, fresh or dried, shelled" among the main producing countries has become denser. As for the network centralization index, Table 5 shows an unchanged trend (29.17) in the period between 2002 and 2010, while increases in 2014 (that is, equal to 34.26). Figure 3 shows that in the period from 2002 to 2010 almost all the producing countries, except Mexico and Iran, were placed in a network "central" position. Instead, in 2014 the degree of network centralization increases especially in favor of Romania and Spain, demonstrating an increasing specialization of these countries in trading of "Walnuts, fresh or dried, shelled".

Table 5. Values of network measures in the principal countries producers of "Walnuts, fresh or dried, shelled"

NETWORK MEASURES	2002	2006	2010	2014
- Network density	3.9	8.2	12.0	14.4
- Network Centralization	29.17%	22.22%	29.17%	34.26%



(*Source*: our elaborations from UN COMTRADE data)

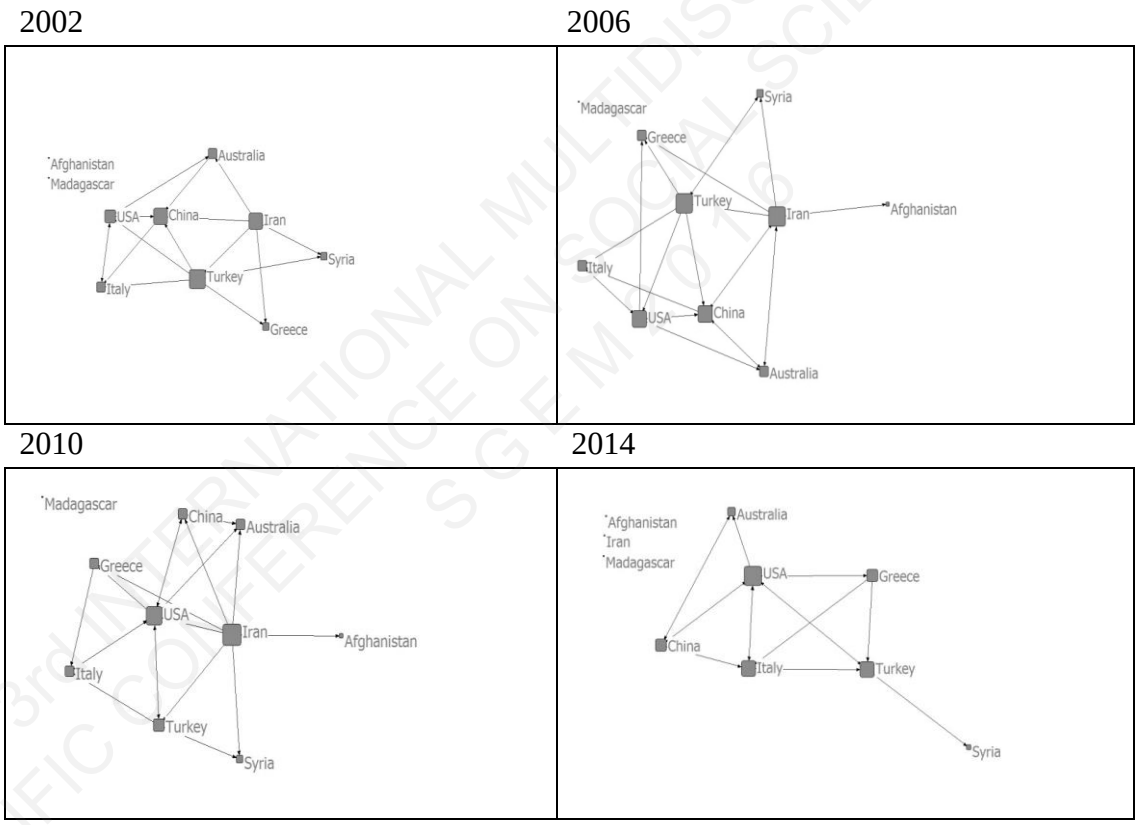
Figure 3. Graphical representation of trade relations of Walnuts, fresh or dried, shelled among the main producers in the world

Finally, the trade of "Pistachios, fresh or dried", shows a density index from 5.0 in 2002 to 9.4 in 2010 and then decreased to 6.4 in 2014. This result highlights that the trade of

"Pistachios, fresh or dried" among the main producing countries shows a trend not well defined over the examined time. The value of network centralization increases from 32.22% in 2002 to 41.20% in 2014 (Table 6). Looking at Figure 4, it is possible to note that the amount of pistachios commercialized by the US, Italy, Turkey and Greece have increased in 2014, causing a significant change compared to the scenario of fifteen years ago.

Table 6. Values of network measures in the principal countries producers of "Pistachios, fresh or dried"

NETWORK MEASURES	2002	2006	2010	2014
- Network density	5.0	8.7	9.4	6.4
- Network Centralization	32.22%	43.98%	39.81%	41.20%



(*Source*: our elaborations from UN COMTRADE data)

Figure 4. Graphical representation of trade relations of Pistachios, fresh or dried among the main producers in the world

CONCLUSION

Through the network analysis approach and the discussion of some structural features of the trading network, it has been observed how the international trading of nuts products – between 2002 and 2014 – has become more globalized, that is, of increased activity

and less dependent on a few countries. Central to this transformation has been the development and the strengthening of positions of some countries which have, at the same time, become export markets for developing nations. Whatever the evolutionary processes that in the last decades have crossed the nuts sector, Mediterranean countries still maintain a central role in production and trade of nuts which should keep even in the long term. The analysis carried out in this study could be important to determine the location of the nuts sector on global level, in order to understand the trends and develop models for future policies of support consistent with the needs of the sector. The future role that the processing industry of nuts should fulfill in the examined context, calls for the development of new strategies and programs aimed at promoting integrations among the different steps of the nuts supply chain.

Many questions however, remain unanswered. Future research on the international trading of nuts products should focus on at least the following three aspects: 1) the extent to which the globalization of the trading of nuts products is the outcome of economic liberalization policies, of trading costs reductions, and of preferential business agreements; 2) The issue of how to measure and establish the actual borders of the economic integration between different countries. 3) The extent to which trading takes place more within restricted boundaries as opposed to global ones.

REFERENCES

[1] Paganetto L., Becchetti L. (2001). Globalizzazione, rivoluzione tecnologica e commercio internazionale: le nuove sfide. Lavoro presentato alla Conferenza Annuale della Società Italiana degli Economisti, Roma Ottobre 2001.

[2] Thalassinos E. (2007). Trade Regionalization, Exchange Rate Policies and EU-US Economic Cooperation. European Research Studies, Volume X, Issue (1-2), pg. 111-118.

[3] Bhattacharya, K., Mukherjee, G., Saramäki, J., Kaski, K., e Manna, S. (2008). The international trade network: weighted network analysis and modelling. Journal of Statistical Mechanics: Theory and Experiment, page P02002.

[4] Lanfranchi, M., Giannetto, C. (2013). Analysis of the economic evaluation of an Italian farm in response to the economic financial crisis that the EU is going through. Quality - Access to Success, 14 (Suppl. 2), pg. 119 – 124.

[5] Kim S., Shin E-H. (2002). A Longitudinal Analysis of Globalization and Regionalization in International Trade: A Social Network Approach. Social Forces, 81 (2), pg. 445-468.

[6] Clark R. (2012). World-system position and democracy, 1972-2008. International Journal of Comparative Sociology, 53 (5-6), pg. 367-399.

[7] Zarbà, A.S., Allegra, V., Pappalardo, G. (2013). Current scenarios in the Romanian agri-food trade inside the EU. Quality - Access to Success. Vol. 14 (S1), pg. 85-92.

[8] Newman, M. e Girvan, M. (2004). Finding and evaluating community structure in networks. Physical review E, 69(2):026113.

SCIENTIFIC CONFERENCE WITH INTERNATIONAL MULTIDISCIPLINARY PARTICIPATION SOCIAL SCIENCES AND ARTS SGEM 2016

[9] Piccardi, C. (2011). Finding and testing network communities by lumped Markov chains. PLoS ONE, 6(11): e27028.

[10] Scott, J. (1991). Social Network Analysis: A Handbook. Newbury Park, California: Sage Publications.

[11] Halliburton, K., & Henneberry, S.R. (1995). The Effectiveness of U.S. Nonprice Promotion of Almonds in the Pacific Rim. Journal of Agricultural and Resource Economics, 20 (1).

[12] Kinnucan, H.W & Christian, J.E. (1997). A Method for Measuring Returns to Non price Export Promotion with Application to Almonds. Journal of Agricultural and Resource Economics, 22 (1).

[13] Wang, H., Wang J., W. D., & Wang, F. (2005). Current global almond trade and its consumption patterns analysis. Forestry Studies in China, 7 (4).

[14] Nemeth, R. Smith, D. (1985). International trade and world-system structure: A multiple network analysis. Review (Fernand Braudel Center), 8(4), pg. 517-560.

[15] Smith D. A., White D. R. (1992). Structure and Dynamics of the Global Economy: Network Analysis of International Trade 1965–1980. Social Forces, 70 (4), pg. 857-893.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
SGEM2016

THE MARKET AND IDEAS OF EXPERIMENTAL REGIONAL ECONOMY

Ph.D. in Economics, Associate Professor Larisa Makhova

Ph.D. in Economics, Associate Professor Olga Lenkovets

Saint-Petersburg Mining University (SPMU)**, Russian Federation**

ABSTRACT

The article describes the features of the Russian economy; shows the strengths of an isolated economic space, defines its characteristics and identifies major social challenges. It finally concludes on the need to establish an economic school, with a capability to be transformed into the headquarters for the regional development, and then for the national development.

The paper has revealed a paradoxical fact – at the moment, no nation on the planet fully understands the market mechanism. Whichever country will be the first to discover it, it will promptly take the lead in the world economy, and will serve as a trigger for the emergence of a fundamental social power, and simultaneously of humane society, provided that at the time the global economy does not absorb everything.

Keywords: isolated economic space, international oligopolies, government formations of transnational nature, corporate formations, experimental regionalization of economy.

INTRODUCTION

The economic slump has made Russia face a very hard choice, as it has predetermined two paths for the country's further development. The first path suggests making use of science and research as a platform to form the national economy. The second path is an economic policy based on raw materials export, which means Russia will be destined to remain a world raw materials appendage on the global scale. Accordingly, the choice of either development path will shape not only the economic role of our country but also its political, social, and cultural status in the international community.

Throughout the historical period, Russia had no way (for various reasons) to follow the line in the market economy, which was pursued by the Western countries. The economy in our country progressed along a totally different route and under totally different conditions.

Bringing the Russian economy to higher levels requires focusing all scientific efforts on the work to develop and test ideas of the advanced market in an isolated economic environment. After all, there are facilities designed for testing engineering and technological achievements (such as industrial parks, innovative industrial complexes, etc.). However, Russia has nothing similar to test results of scientific research in economics, and this is apparently why the science of economics is so poorly developed.

The world practice shows that the isolated economic environment is very successfully leveraged by corporate entities which, in turn, demonstrate the world their excellent performance by growing into transnational entities.

The isolated economic environment enables corporate entities to completely subordinate all their business activities to the company's interests. It should be noted that corporate entities are uniform economic formations that build their internal production communications so that they can develop adequate economic policies, avoid threatening laws of the market and maintain their market position.

No wonder that transnational corporations are now in the lead in the global economic space. They often perform functions similar to the ones of governmental bodies. In addition, transnational oligopolies and monopolies are holding a significant world market share in special application products.

The main principle of the global oligarchy is the prevalence by one part of the world community over the other, in other words, establishing its planetary dominance. To this end, the global oligarchy also makes use of national resources and by doing so ruins the national economy, and discredits the national idea.

Being efficient users of market principles (thanks to their isolated economic environment), global corporations pose a challenge to "the very idea of a democratic political system" [1, p. 7]. At the moment, transnational corporations are extending their influence over the countries with medium and low living standards. But it is not improbable that in the near future they will redirect their attention to highly developed countries as well.

The tendency toward the increasing power of oligopolies and monopolies began to take shape in the early 20th century. Modern international corporations acquire absolute independence which is only characteristic of state institutions. Corporations are working to become subjects of international law, legitimize their security forces, using the guise of security departments to create private armies and police, are trying to infiltrate international companies, etc [2].

Hence, corporations are a kind of state formations of a transnational nature. From an economic perspective, they are much more powerful than territorial government organizations and through this may reduce the effectiveness of any (without exception) national economy by drawing this or that country in the regime of non-equivalent foreign trade exchanges and debt bondage and subordinating national elites to their material, ideological and political interests.

Researchers note that weakening and complete elimination of national economies allow transnational capital to move freely for the economic benefits of entire countries and continents [3, c.10].

The isolated economic environment is beneficial for corporate organizations as they operate under a single ownership, which excludes any competing interests of other owners.

Another important value provided by the isolated economic environment is that such environment is an extremely fertile soil to forge the collective mind, as the team's operational efficiency will be assessed directly by the markets. Such assessment is most adequate because the entity's goals will match market interests from the very beginning.

We should also note that the direct market assessment of their activity helps economically autonomous transnational entities objectively determine their economic results and bring corporations to a completely new level of performance, while contributing to the socialization of their personnel. Thanks to this, the entities successfully develop their business while all major social problems are also addressed (Fig. 1):

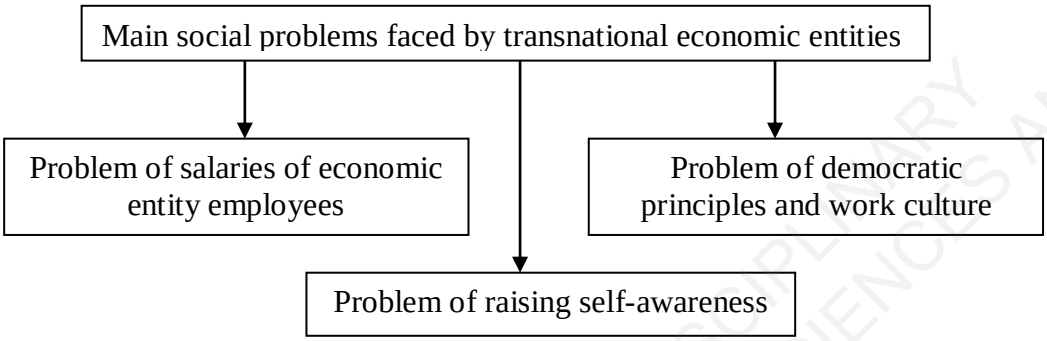


Fig. 1. Social problems of transnational economic entities.

1. Problem of salaries of economic entity employees.

Salaries depend on the general performance, so employees are interested in a fair approach to the payment of employment. Management, in turn, should adequately assess the labor input of each employee, and make its best efforts so that all employees can prove themselves as professionals in their field and as personalities to the fullest extent.

Today Russia is dominated by the absolute power of property owners, which is hardly conducive to the vision and application of research-based management principles. Salary levels are quite low and, unfortunately, do not result into better employee performance.

2. Problem of democratic principles and work culture.

Addressing the problem of democratic principles and the work culture will contribute to more efficient decision-making in the general economic policy of the country.

In Russia, democracy is "implanted" from above with politics being over culture, which leads to the degrading cultural level of the nation.

3. Problem of raising self-awareness.

This issue includes the work on the continuously increasing level of self-awareness since collective teams are new forms of work cooperation, which facilitate understanding of social networks, exchanges of experience and knowledge, and joint action in problem solving.

Thus, transnational corporate entities recreate the integrity of the work and abilities, which were emphasized by Aristotle and Plato.

Russia possessed this quality throughout its historical development, but years of reformation failures have caused the level of self-awareness to become considerably lower in our country.

At the moment, corporate self-regulation systems are being carefully studied by the world community. Thus was established the International Academy of Corporate Governance and Business. Since 1992, systems of transnational corporate management have been using for the management of the national economy. However, we believe that this activity is not only fruitless but totally meaningless.

Applying the corporate management system at the national level is a real utopia. The science of corporate economic environment and science of the national economic environment are completely different areas of economics.

Corporate science is based on internal production relations. Corporate entities are economic entities which are characterized by a single market participant, integrated property and a holistic economic environment. They are isolated in all aspects of economic activity:

- organizational,

- social,

- economic,

- informational,

- legal.

Corporate entities are at all times directly influenced by market laws, and therefore their performance is evaluated directly by the market without any administrative, legislative and bureaucratic barriers. All this makes it possible to create less dependent internal production relations and often the ones absolutely independent of the outside world.

State entities differ from the corporate ones in that they included a large number of market participants, each of which has its own economic environment and interests. None of the countries in the world has managed to combine these various activities, as there is no appropriate scientific substantiation. As a result, this function is performed by the market, and only some of the regulatory elements are assumed by the state.

Those countries, which have learned to leverage the favorable trends in the national economy, are progressing much more effectively. Some countries demonstrate national arbitrariness which leads domestic formations to be transformed into transnational oligarchic and oligopolistic associations merging with national associations.

Accordingly, weak domestic formations cannot withstand the onslaught of transnational and national oligarchic associations, because the latter has an embedded propensity to globality.

For example, Russia's economy is formed under conditions dependent on the global economy, and this is why the national arbitrariness in unacceptable to it. Russia can neither transfer authority over its economic environment to anyone else, of course, if it wants to stay Russia, nor control the redistribution of economic power [4, p. 8].

Presently, domestic entities are unable to rely on the scientific and research platform of the developed market, because there is no such platform in place. This state of the science and practice makes economists come up with the paradoxical judgments. According to them, on the one hand, Russia has an emerging market, and on the other, the market is confronting numerous challenges. When science cannot provide a clear economic policy, the market operates by itself. By being competitive, the market brings

the social proportion to the equilibrium through imbalances, inequalities, destruction, bankruptcy, inflation and a crisis. So, the market is based on the laws of competition. It is these laws that will be a starting point as long as society itself does not learn to follow them.

Predicting any abnormalities in production relations is currently beyond the capacity of national entities, and this explains why the market generates new niches on a regular basis, which are immediately filled with businesses. Society does not yet have comprehensive knowledge about the market to efficiently manage the national economy.

Efficient business practices require devising a theory that could correctly explain manifestations of the market laws in the economy of state entities. This is the purpose of the economic theory – not to impose its own laws on the economy, but rather explain the objective ones. Not to make up economic laws, but disclose them, as were disclosed Newton's laws, theory of relativity, etc. In addition, it also requires discovering manifestations forms related to the market laws.

The economic theory failed to give society complete knowledge of the market, and turned from a leading science into a secondary one. When applying the scientific and research approach to economic reforms, it is necessary to distinguish between the terms "market economy" and the "market mechanism" (Fig. 2). There is a wide variety of market economies – every country has its unique market economy that is different from all the rest, which, in turn, is associated with different historical factors behind its formation.

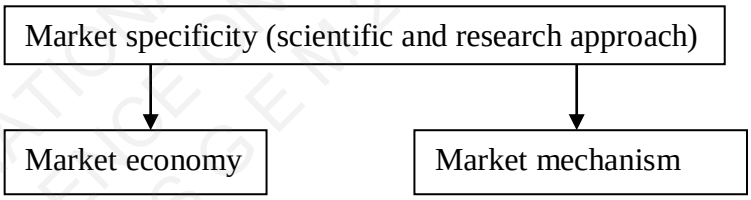


Fig. 2. Market specificity determined by the scientific and research approach.

Additionally, each country has its own level of development of the market with its inherent national colors. On the contrary, the market mechanism is a single universal mechanism. National scientific and research schools vary from one another only in that they study it in various ways.

Countries may be rich (due to various historical factors) or poor. However, currently no country in the world has command of the market mechanism. Whichever country will be the first to come to know this mechanism, it will secure a leading position in the global economy in the short term and will contribute to the growth of fundamental social powers, and simultaneously of humane society, of course, provided that at the time the global economy does not absorb everything.

The market mechanism has enormous power, and it cannot be underestimated. It operates according to the laws of Newtonian mechanics. It may be applied as the laws of physics are applied to the plane design. The market mechanism can be used in the design of national economies exactly the same way. Unless this mechanism is used, an

economy is unlikely to be able to go on the path of profitable growth and will remain with unpredictable future under the "yoke" of the market power.

A scientific review of the issues of economic practice should use the idea of experimental regionalization of the economic system of a subject of the Russian Federation. This approach may yield much better results than all natural historical (evolutionary) processes. Stimulating research capabilities in the management of the regional economic system will form efficient institutional practices in the market economy management.

Methods offered by existing institutions do not meet all needs of the practice. It requires completely new approaches and studies in methodology. In the regional economic environment, we believe, research activities will develop based the needs to address economic issues. There is no doubt that needs promote scientific advancement much faster than a dozen of academic universities.

Universities can play a positive role in society only when the impact of scientists and researchers on economic development will take its rightful place. With its ability to propose new ideas and put them in practice, the higher school thanks to its knowledge excellence can achieve the priority in managing the economy, and researchers and scientists will be able to become a political game changer. Then universities will be modified to be the headquarters of the region, and later of the whole country.

Russia should generate relevant scientific ideas through its regional policies, in particular by engaging the regions, which are creating the economic environment for the self-reproducing subject of the Russian Federation, and which are settling controversial theoretical assumptions regarding market reforms.

Such regions would be able to take the lead in domestic economics, adjust Russia's institutional atlas and become the country's key institutional resource to formulate scientific and research principles of market reforms.

The regional economic environment is a multifunctional experimental field to test economic management methods. It is instrumental in developing mechanisms for the optimal combination of state regulation and self-government in the marketplace. However, this requires attracting higher economic institutions.

An economy developing on the basis of current knowledge entails the requisite combination of higher economic institutions, economic practices and common interests. The country's economic issues and issues of the higher school should be identical.

Economic institutions can not be separated from the national economic base so that their educational effect would be visible in practice. In this regard, Russia needs a state economic university, whose main purpose is to develop effective methods of management. Such university would help elaborate a theoretical and methodological basis to manage the market economy.

For example, consider the Russian Market Research University. To test the effectiveness of the University's direct involvement in the economy, it is necessary to use an isolated economic environment of the pilot region. With the close cooperation between the University and regional authorities, it is necessary to try to create a unique market model of the economy, and then bring it to the national level.

An efficient market mechanism is necessary not only by our country, but all the advanced countries as well. The world economy is always the search for a high quality economic system of social development. The economic progress depends on how soon a theory of the developed market will be suggested [5].

If global processes outrun us, we will have to quit the idea of a national high-performance economy. The market will manage the economic processes by itself through transnational entities which, in turn, will work for their own economic environment.

Nevertheless, managing economic processes will still require effective tools. Sooner or later, scientific and research management methods, which were not adopted in state entities, will begin to function in transnational corporate entities, and then all transnational oligopolies or monopolies will seek to win over other players.

The absence of scientific and research basis, we believe, will force Russia to integrate into the world economy as a raw materials appendage which will have to break up into a number of subjects of the world market and exist according to the laws of individual self-developing systems.

However, as researchers note, Russia still has all chances to establish a new empire which will take into account the entire available modernity, an empire which will be open, flexible and internally cohesive. It is the formation of a new empire, which will allow Russia not to get completely under the control of global processes and fully dissolve in the anti-Russian globalization [4, p. 2]. Neglecting the peculiar Russian way of the market development and imposing a specific "western" or "eastern" line on the country appears as a simple disrespect for the history of the country.

CONCLUSION

It should be also noted that the concept of an "open" or "closed" world economy should be introduced in terms of national sovereignty. For example, to open the Russian economy to national interests and close it to global interests.

All Russian regions (this way or another) are now being exposed to economic risks, both to internal and external ones:

- on the one hand, the inefficient regulation of the domestic market,

- on the other hand, the country is being invaded from the outside.

All this presents major challenges for a new scientific approach to the implementation of effective market-based rearrangements (both on the regional and national levels).

Thus, the Russian scientific and economic strategy requires a scientific and research basis, and it will determine the country's foreign policy. To learn to apply the knowledge gained, motivate all academics and researchers, and define a new, institutional line of economic growth adequate to the market – only by succeeding in these objectives our country will be able to reach a high level of economic development.

SCIENTIFIC CONFERENCE 3rd INTERNATIONAL WORKSHOP ON DISCUSSING SCIENCES AND ARTS

REFERENCES

[1] Auzan A., Satarov G. The priorities of the institutional reforms in economic modernization. // Voprosy ekonomiki. 2012, No. 6 – p. 42–64.
[2] Popov G. Key problems in the development of the Russian economy and mechanisms of their realization. // Theoretical and Practical Aspects of Management. 2011, No. 10 – p. 24–34.
[3] Kochurova L.I. Market development in an isolated economic space. // Theoretical and Practical Aspects of Management. 2006, No. 7 – p. 24–34.
[4] Kochurova L.I. The Business market – the abnormal form of the market. // Montenegrin Journal of Economics. 2010. No. 12. – p. 14–21.
[5] Kopein V.V., Kochurova L.I., Filimonova E.A. States of the planetary world are threatened with a financial danger. // Montenegrin Journal of Economics. 2010. No. 11. – p. 22–47.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE MICROBREWERY AS AN INTERESTING OPPORTUNITY FOR SMALL AND MEDIUM-SIZED BUSINESSES

Ing. Ladislava Kuchynková, Ph.D.;

Masaryk University**, Czech Republic**

Abstract

The globalization of the beer industry has reached such a level that today, more than ever before, customers are looking for a variety in flavours from smaller breweries, which in turn need to offer a high-quality product in terms of the limited regional market in which they operate. At the moment, there is a beer revolution in the Czech Republic, with dozens and dozens of new microbreweries opening each year. This article will prove useful by providing an analysis of the business opportunities and the market in this area. Due to the characteristics of the product which microbreweries offer, it is incumbent upon them to build an appropriate company image. Based on a case study of one Czech brewery, which is part of this paper, it will be shown that the positive image of a company is an important precondition for gaining the loyalty of customers who will give less attention to the other competitors, which in turn will lead to the long-term prosperity of the company in question.

1. Introduction

A microbrewery is understood to be [1] a beer producer whose sales (volume of beer produced) do not exceed 5,000 hl/per year; which does not have its own distribution network; which does not export its beer; whose products are not available in normal shops with the exception of specialized beer stores; whose products are mainly consumed in self-run public premises; which is not owned by a state enterprise; whose owner is usually a physical person (or a legal entity with a minimum number of directors); and whose owners often have an emotional bond to this particular sector which is not purely economic.

Thanks to microbrewery restaurants, we can see the preservation of traditional brewing methods which are gradually being lost in the modern industry. Modernization, pressure to extend the shelf life of beer and cost reduction have gradually led to beers from large breweries being much more similar in taste, while the difference in taste between beer from a microbrewery and beer from a large brewery has become much greater. However, thanks to economies of scale, large breweries will always be economically better off than smaller ones. In terms of distribution channels, this economic edge is perhaps most evident in their ability to secure favourable conditions when negotiating with various retail chains. On the other hand, one great advantage for microbreweries is that this competitive struggle does not apply to them, allowing them significant scope to develop their operations at the regional level.

Dozens of microbreweries are opening every year in the Czech Republic, and they now total more than 300. However, despite their growing number, they only account for roughly one percent of beer production in the Czech Republic, although according to experts they are starting to become a recognized part of the brewing industry. One of the reasons for their growth is consumers' desire to try something new and to taste a more varied assortment than is offered by most of the large breweries. Due to the fact that it

has smaller facilities, a microbrewery can experiment with more unusual tastes and can gradually expand this range of products. The growing demand for unusual beers among Czechs is related to the interesting business potential offered by microbreweries.

2. An attractive business opportunity

One important influence on the return on investment is the amount of the initial investment which depends primarily on the size of the facility, the quality and the design, as well as the degree to which it is financed by credit. It also depends on the level of operating costs in the form of electricity, water, sewerage and gas. Equally important is the cost of employing a qualified brewer and other professionals and assistants involved in production. The return on investment also depends on the selling price and on the volume and number of different beers produced. Other decisive factors include the form of distribution, sales costs (pump equipment) and sales support (signage, glasses etc.). Unlike the larger players, the rate of excise tax is halved for microbreweries. Return on investment for a microbrewery is generally seven years [2], and one representative of the Czech–Moravian Association of Microbreweries stated that it was a relatively safe investment, as only a few such facilities had gone bankrupt since 1990. One of the reasons for this is the fact that microbreweries operate within a different customer segment, they do not negotiate with retail chains and they do not need to get their products into pubs, so they do not have to pay extra money to publicans.

A representative from the Bohemia Brewing Centre consultancy firm stated that [3] the threshold at which a microbrewery can be profitable is an annual production of approximately 500 hl, which is about four barrels daily. A brewery which sells less is not economically viable. However, there are also breweries in this country which are more about the owner's hobby or the prestige of a gourmet restaurant than about the profitability of the business plan. The minimum amount of investment for the smallest microbreweries is around 3 million CZK (for a brewery with an annual output of 1,000 – 2,000 hl, investment varies from 3 to 5 million CZK), which will cover the set-up of the production infrastructure (facilities for producing malt and yeast, bottling etc.), but not the purchase of the building. The site for a microbrewery has to be chosen very carefully as it will have to rely on its own distribution. For this reason, the ideal situation is for the microbrewery to offer its beer in its own restaurant, which will be part of the production facility and which will also make it more attractive for visitors. These days, people are prepared to travel several kilometres to try local specialities, or to stop off at a recommended place on the way to another destination. The choice of locality is also crucial in terms of the quality of the local water, as not all drinking water is suitable for beer production. Building a water treatment facility is a costly affair for a new microbrewery, as is the transportation of water from elsewhere, as 7 litres of water are required to make 1 litre of beer.

Brewing is a regulated trade requiring appropriate training, and it is necessary to comply with a whole series of standards when running a brewery. A detailed list of these requirements is provided by the Brewing Code, where those interested in the trade can find out the requirements for establishing and operating a microbrewery and what criteria each declared type of beer has to meet. At present the basic standard for monitoring production is the HACCP (Hazard Analysis of Critical Control Points). As far as government agencies are concerned, the main supervisory body for brewery operators is the Czech Agricultural and Food Inspection Authority. Finally, there is the added complication that it is necessary to establish the microbrewery as a so-called

bonded stock with all the administration that entails, because as an alcoholic beverage beer is subject to excise duty. In the early days of the business, therefore, it is advisable to hire a professional with the relevant certification and experience who will help to start up production, ensure that the required standards are met and also oversee the quality of the product. It is not necessary to hire a professional brewer on a permanent basis as it is possible to train a local person who has an interest in this work. Over time they will become a qualified and irreplaceable employee due to the fact that is necessary to monitor the process more or less every day, as beer production is a continuous process.

A microbrewery can produce beer at a cost of between 7 and 30 CZK per litre [3]. This wide range is principally due to operating costs. Even if it is possible to produce beer cheaply at the lower level (7 CZK per litre) a microbrewery cannot base its competitiveness on this fact. Although the beer made in a microbrewery using traditional methods has a shorter shelf life, there is practically no use of chemicals in production, which appeals to consumers' growing interest in various organic products. Another necessary condition for market success is the distinctive style of the microbrewery and its range of original specialities. Potential economic hazards for microbreweries are represented by these five facts [1]:

- Additional costs incurred in realizing the entire investment, as the amount set by the contractor is not necessarily the final amount due to specific features of the area where the facility is being built.
- Rises in input prices, particularly electricity.
- The calculations do not include investment for renewal and the cost of repairs and servicing, etc.
- Operational costs, particularly for the running of restaurants and other wages, were missing from the provisional calculation.
- The calculations do not include the costs for promotional items (glasses, beer mats, napkins, etc.), which ordinary restaurants usually receive as standard from the industrial breweries.

One Czech microbrewery producer [4] ascertained from his own market research that small-brewery owners started off as traditional owners of average restaurants who had no more than 1 million CZK in savings and who set up a microbrewery through a loan secured either on their home or restaurant. All of these operators recorded a growth in visits to their establishment of between 100% and 400% during the first two years of operation, with nearly all of the local regulars gradually switching over to the local beer and dozens of tourists becoming regular visitors. Within two years, the majority of operators offered only their own beer and stopped ordering traditional beers from the established suppliers. They discovered that it paid to promote their own brand and that the owners' pride in their own brand was viewed very positively by guests as further evidence of the quality of the local beer. All of the operators agreed that offering their own beer not only added to their own popularity, but also that of the community where their business was located. The residents of the area were also proud of "their" brewery because they had somewhere to go for good beer and to take visitors to experience a local speciality. This finding is closely linked with the issue of the image of the company and its products, which will be examined in the next chapter.

3. The importance of corporate image

Corporate image, which in general is the sum of the ideas, opinions, perceptions and experiences linked to the entity, can consciously or unconsciously be an important factor in consumers' decision making and behaviour. In business practice, image can be defined as "a generalized and simplified symbol based on the aggregate of a person's perceptions, ideas, opinions and experiences in relationship to a company, its products, employees, etc." [5]. Image cannot be bought; a company has to acquire it, it has to earn it, which can take some time, while, on the other hand, it can be lost very quickly. Image is not permanently assigned to individual subjects or entities; it has a high value, but one which is difficult to express financially; and it is easier to destroy it than to establish it [6].

Given a situation where the quality and price of a group of products is equal, particularly in the case of consumer goods, then the image of a company or its brand [7] will be decisive, as it creates an additional emotional value which differentiates it from the rest. According to Pelsmacker [8] a positive image gives a firm authority, which can provide a basis for success and prosperity. A positive image of a company can motivate customers to make a purchase, even if they do not have sufficient information about a firm or product. It also helps to overcome problems in the relationship with stakeholders and can attract key people such as investors, new employees, partners, etc. Another reason why image is important for companies is that it positively influences customers' trust in a firm to a significant degree [9].

As the Czech market contains such a high number of breweries, be they large, medium-sized or small, it is crucial for them to distinguish themselves from one another, and here an important role is played by the individual parts of the marketing mix and especially the image the manufacturers are trying to create. There are general factors which contribute to the image of a beer, such as the environment in which it is drunk, the variety of local and international brands on offer, the brewing tradition in that particular country or region, the food which is served with the beer, and the social events and gatherings of which beer is an integral part. Some attributes of the image of beer and breweries may appear to be marginal compared to taste and price, but it is necessary to take into consideration that many of these elements are of great interest to collectors and are sought-after souvenirs. These include glasses, cans, beer mats, labels and bottle-openers, which are objects which can promote the image and sales of beer [10].

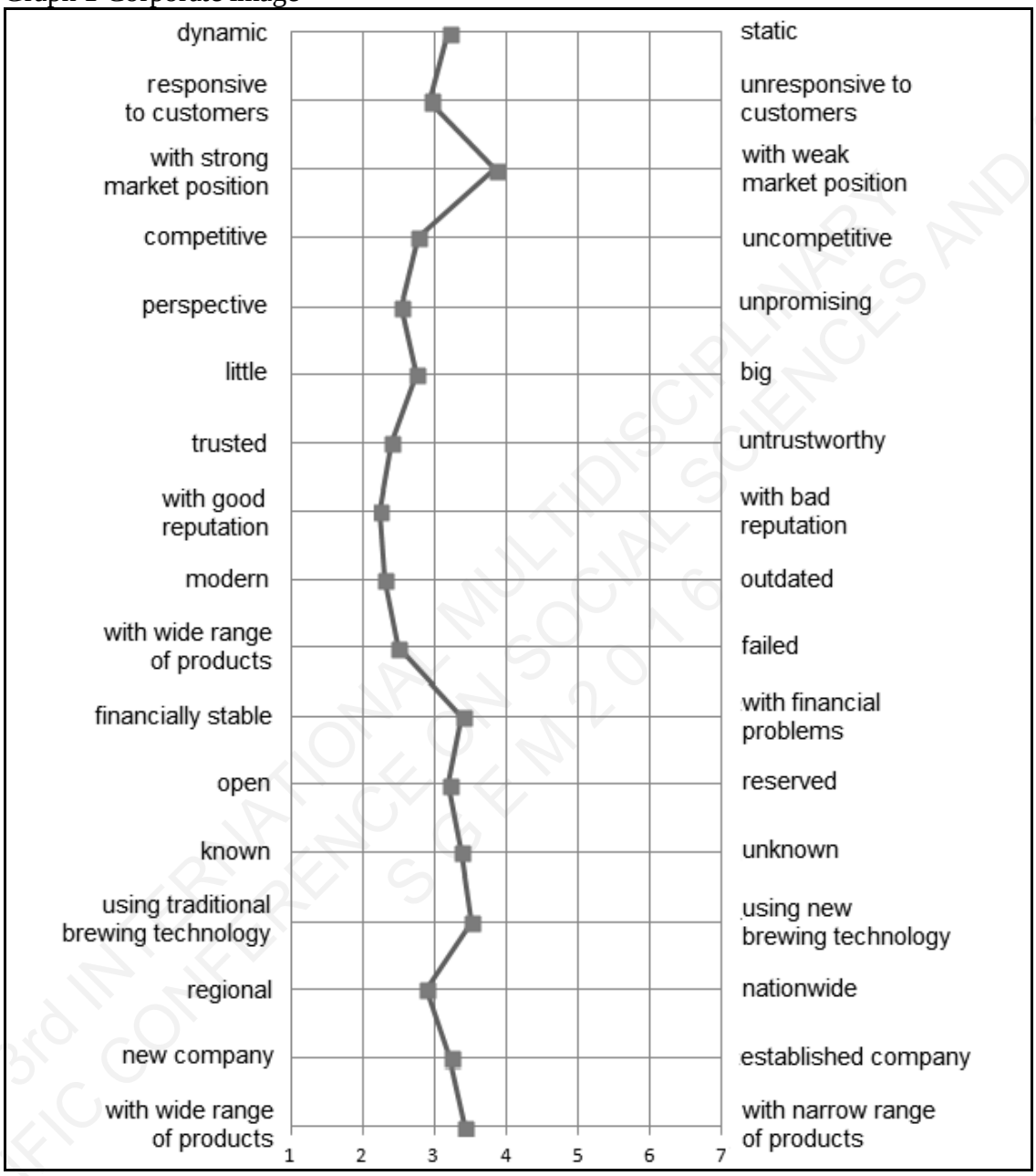
4. A case study analysing the image of a Czech microbrewery

A questionnaire survey [11], which was designed to determine the current image of one Czech microbrewery, was completed by 210 people, either online or in printed form. The respondents were chosen according to the anticipated representativeness of their views in relation to the research project, which meant that they were potential or current customers. Almost 60% of the respondents stated that they came from or lived in the place where the brewery was sited or within 20 kilometres of it.

A detailed examination of the brewery's image was carried out using a semantic differential comprising 17 contrasting pairs, an evaluation of which is given in Graph 1. The results of the semantic differential showed that the company was mainly perceived positively, with the respondents' assessment approaching a neutral, average value in only a few cases. The image of the brewery is that of a small, regional brewery which is successful, has good prospects and, even though it is not evaluated as being very well known, is viewed as competitive by the respondents. Also related to corporate image is

the very pleasing fact that the respondents perceived this particular establishment as being trustworthy with a good reputation.

Graph 1 Corporate image



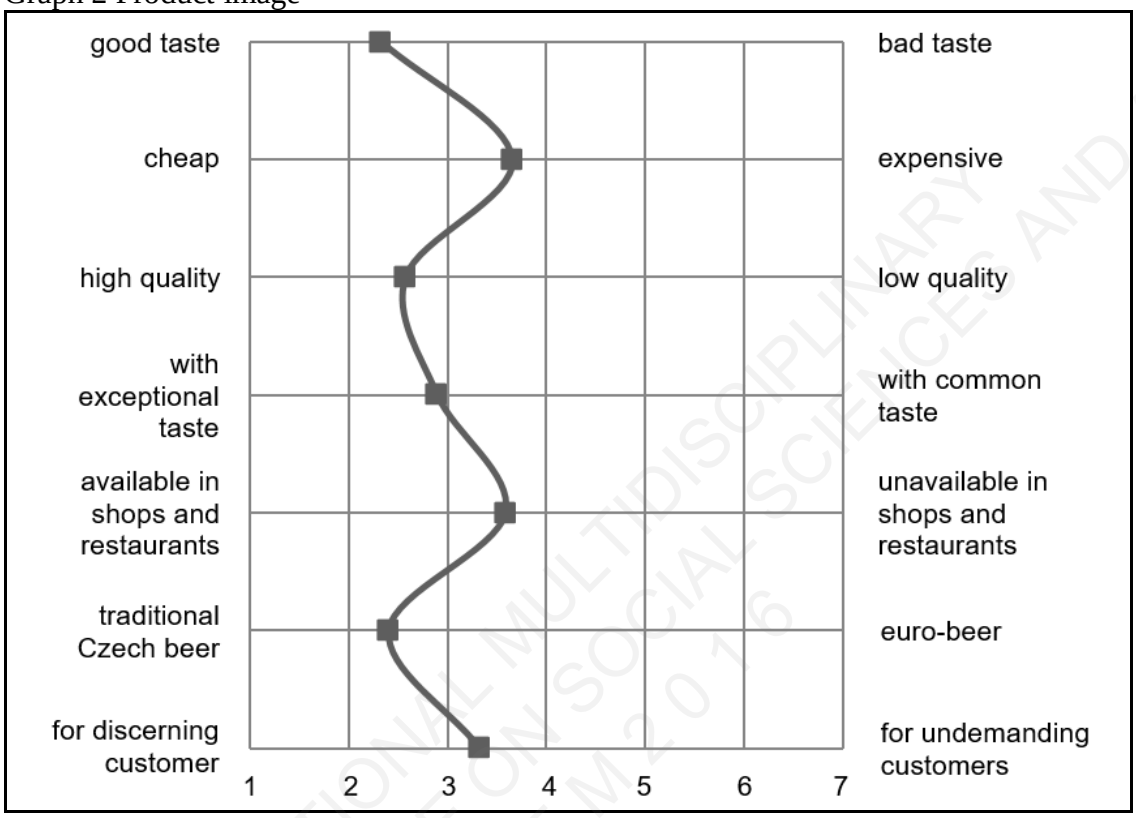
Source: [11]

Graph 2 sets out the research results concerning the image of the brewery's products. The beer produced at this brewery was rated as tasting good and being of relatively high quality. The beer can also be said to have a taste which can be distinguished from that of other beers and is considered to be for more discerning customers. The respondents had the strongest views when it came to the traditional character of the beer, and they would certainly not include it in the category of Euro-beers (mass-produced beer with a homogenized taste, in most cases brands produced by large breweries). The local beer obtained a more neutral score in terms of price, where it is not classed as an expensive brand, and in terms of availability in shops and

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016 3rd INTERNATIONAL MULTIDISCIPLINARY

restaurants. Naturally, views on availability differed significantly for people living near the brewery, who evaluated this variable as adequate, and people from other regions, who on the whole rated the beer's availability as poor.

Graph 2 Product image



Source: [11]

This particular microbrewery is thus perceived as trustworthy with a good reputation, as well as modern and successful, which is also demonstrated by the fact that people evaluated it as financially stable. Its size is also commended, and it is viewed as a competitive regional brewery with a promising future, since it has shown itself to be dynamic and open to new ideas rather than conservative. Among the public, the brewery has also established an image of being responsive to customers, offering them a relatively wide range of high-quality products in the form of a unique, tasty, traditional Czech beer which is also characterized by a good price/quality and price/taste ratio. Based on the results and the theory of the relationships between product and corporate image, it can be stated that there is a positive interaction between them for the brewery under research. Since establishing a positive image is a long-term process and negative influences can leave their mark on it very quickly, it is advisable to monitor its development with the brewery's customers and take any necessary steps to alter its future course.

5. CONCLUSION

Contemporary Czech consumers of beer are far from being conservative, and a number of new trends are emerging on the Czech market. Over the past decade, there has been evidence of changing beer preferences among the younger and middle-aged generation, which can also be seen in the boom enjoyed by flavoured and low-alcohol beers [12]. Consumers are more inclined towards specialist beers and increasingly

favour beers with more distinctive flavours over Euro-beers. This fact is good news for small, mainly regional breweries and microbreweries, which unlike the largest national breweries have not experienced a decrease in sales [13]. In the majority of cases, microbreweries have higher prices than the brewery giants; however, this does not deter beer drinkers, as they realise they are paying extra for higher quality and favour uniqueness and variety over a homogenized taste. There is also a difference in presentation, as small breweries cannot afford to invest as much in advertising and therefore have to rely on good, high-quality beer [14]. As was mentioned earlier, many factors are involved in the creation of a company's corporate image. In this particular industry, a high symbolic value has been attached to Czech beer as the national drink, and a strong degree of beer patriotism is evident in the Czech Republic, which is reflected in the fact that Czechs are convinced of the uniqueness of their beer, which they consider the best in the world [15]. If breweries are able to build a positive image for themselves, then it can be assumed that this fact will also work in their favour.

References

[1] Maier, T.; Fabiánová, A. *Economic Aspects of Setting up a Microbrewery Restaurant.* Kvasný průmysl, Vol. 57, Issue 9, pp. 330 – 336, 2011. ISSN 0023-5830.
[2] 5. ČTK. *V Česku loni vzniklo padesát minipivovarů. Jejich počet se blíží 300.* In> iDnes.cz [online]. 18.3.2015. Dostupné z: http://ekonomika.idnes.cz/cesko-zaziva-boom-minipivovaru-d3v-/ekonomika.aspx?c=A150318_153509_ekonomika_rny
[3] 2. Houser, P. *Minipivovar může být koníčkem i úspěšným byznysem.* In: Podnikatel.cz [online], 16.1.2009. Dostupné z: http://www.podnikatel.cz/clanky/minipivovar-muze-byt-konickem-i-uspesnym-byznysem/
[4] Czech Mini Breweries s.r.o. Dostupné z: http://www.mobilnipivovary.cz/proc-provozovat-minipivovar/
[5] 7. TOMEK, G., VÁVROVÁ V., 2001. *Výrobek a jeho úspěch na trhu*. 1. vyd. Praha: Grada, 352 s. ISBN 8024700530.
[6] 8. FOSTER, T. R. JUNGMANN, V., 2002. *Jak získat a udržet zákazníka*. 1. vyd. Praha: Computer Press, xii, 117 s. ISBN 8072266632.
[7] 13. NĚMEC, P., LITTOVÁ J., 1999. *Komunikace korporací*. Vyd. 1. V Praze: Vysoká škola ekonomická v Praze, 172 s. ISBN 8070795751.
[8] 10. PELSMACKER, D. P., GEUENS M., van den BERGH J., 2003. *Marketingová komunikace*. Praha: Grada, 581 s. ISBN 8024702541.
[9] 11. LONG-YI, L., CHING-YUH LU 2010. The influence of corporate image, relationship marketing, and trust on purchase intention: the moderating effects of word-of-mouth. *Tourism Review of AIEST - International Association of Scientific Experts in Tourism*, 65(3), pp. 16-34.
[10] 12. KOCIÁNOVÁ, Š., 2011. *Image piva jako součást pivní kultury*. In: Strategie.e15.cz [online]. 28.4.2011 [cit. 2014-03-29]. Dostupné z: http://strategie.e15.cz/prilohy/s-retail/image-piva-jako-soucast-pivni-kultury-572444
[11] 3. Tuhá, M. *Analýza image podniku*. Diplomová práce, 98 s. Brno: Masarykova univerzita, Ekonomicko-správní fakulta, 2014.
[12] 14. HROMÁDKOVÁ, T., 2012. *Jak vyrobit nové pivaře: Radlery mají mladé zákazníky odlákat od limonád*. In: Ihned.cz [online]. 12.8.2012 [cit. 2014-03-28].

Dostupné z: http://life.ihned.cz/c1-56978480-jak-vyrobit-nove-pivare-radlery-maji-mlade-zakazniky-odlakat-od-limonad
[13] 15. PETR, M., 2014. *Pivovarští obři ztrácejí zákazníky. Rostou menší výrobci.* In: Lidovky.cz [online]. 23.2.2014 [cit. 2014-03-28]. Dostupné z: http://byznys.lidovky.cz/pivovarsti-obri-ztraceji-zakazniky-rostou-mensi-vyrobci-p3p-/firmy-trhy.aspx?c=A140221_155252_firmy-trhy_jzl
[14] 16. HOMOLKA, M., 2011. Malé pivovary v kraji nestačí vařit pivo, mají už i pořadníky. In: Idnes.cz [online]. 19.3.2011 [cit. 2014-03-28]. Dostupné z: http://brno.idnes.cz/male-pivovary-v-kraji-nestaci-varit-pivo-maji-uz-i-poradniky-plb-/brno-zpravy.aspx?c=A110314_1548374_brno-zpravy_dmk
[15] 6. VINOPAL, J., 2013b. *Pivo v české společnosti v roce 2013*. Centrum pro výzkum veřejného mínění, Sociologický ústav AV ČR, v.v.i. Praha, 8 s. Dostupné z: http://cvvm.soc.cas.cz/media/com_form2content/documents/c1/a7131/f3/OR131120a.pdf

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES & ARTS
3rd INTERNATIONAL MULTIDISCIPLINARY
S G E M 2 0 1 6

THE POSITION OF TURKISH AIR TRANSPORTATION IN EUROPE

Assist. Prof. Dr. Burak Çamurdan[1]

Assist. Prof. Dr. Suna Çetin[2]

Res. Assist. Selim Gürgen[3]

Assoc. Prof. Dr. Melih Cemal Kuşhan[4]

[1] Pamukkale University, Honaz Vocational School, Honaz, Denizli, **Turkey**
[2] Kırıkkale University, Department of Industrial Engineering, Kırıkkale, **Turkey**
[3] Anadolu University, Vocational School of Transportation, Eskişehir, **Turkey**
[4] Eskişehir Osmangazi University, Department of Mechanical Engineering, Eskişehir, **Turkey**

ABSTRACT

Turkish civil aviation has been rapidly grown in recent years. Particularly, today Turkish Airlines is one of Europe's largest airlines. This rapid growth realizes with the competition among the companies both in Turkey and the world. Due to this growth, Turkish air transportation connects many places to each other in the world. In this study, Turkish air transportation was discussed in terms of quantity and quality.

Keywords: Civil Aviation Transportation, Turkish Aviation, Civil Aviation Management

INTRODUCTION

Today, air transportation is growing rapidly due to globalization. All countries demand to have a share of this growth. Naturally, this causes a big competition between all countries of the world in the field of air transportation.

Air transport has always a strategic role. From past to present, airlines have potential for providing high-speed mail services, and subsequently medium and long-term passenger transport. Technology now allows the carriage of much larger cargo pay-loads in a more reliable way. These strategic functions are used to pursue international policies of social, political, and economic integration within large countries such as Canada, the US, and Australia, but also take on international significance from the 1930s within the imperial geopolitical systems centered mainly on the UK, France, Germany, and other European countries when technology allowed for intercontinental services to be developed.

Air transport is highly regulated and protected in the world. The role of the air transportation becomes important after the technology used in World War II. British Imperial Airways, for example, only carried about 50,000 passengers to the colonies in the 1930s; a figure hidden in the public media coverage given to the importance of colonial air networks. Technology shifts as an offshoot of military developments in World War II changed this with the introduction of planes with far longer ranges, faster speeds, enhanced lift, and the increasingly ability to cope with adverse weather conditions. Air traffic control, navigation, communications, and airport facilities have also improved considerably, and more recently the underlying management structure of the supplying industries has enhanced efficiency.

SCIENTIFIC CONFERENCE 5GC 2016 INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS

Table 1. The ten largest international airlines by scheduled passenger-kilometers [2]

Airlines	Millions
Delta Air Lines	290,862
United Airlines	287,547
Emirates	230,855
American Airlines	208,046
China Southern Airlines	166,074
Southwest Airlines	162,445
Lufthansa	143,403
British Airways	137,204
Air France	134,528
Air China	112,247

Table 2. Total international passenger traffic 2015 [3]

Rank 2015	Rank 2014	Airport, Country, Code	International Passengers	
			Enplaning and deplaning	Percent change
1	1	Dubai, AE, DXB	77,453,466	10.7
2	2	London, GB, LHR	69,816,491	2.5
3	3	Hong Kong, HK, HKG	68,071,282	8.2
4	4	Paris, FR, CDG	60,366,933	3.0
5	5	Amsterdam, NL, AMS	58,245,545	6.0
6	6	Singapore, SG, SIN	54,836,000	2.9
7	7	Frankfurt, DE, FRA	53,994,154	2.4
8	8	Incheon, KR, ICH	48,720,319	8.5
9	10	Bankong, TH, BKK	43,251,807	16.3
10	9	Istanbul, TR, IST	42,302,859	11.1
11	11	Taipei, TW, TPE	38,104,007	7.6
12	12	London, GB, LGW	36,667,769	6.4
13	13	Kuala Lumpur, MY, KUL	34,438,229	0.0
14	15	Madrid, ES, MAD	33,765,583	14.1
15	14	Munich, DE, MUC	31,313,329	3.5
16	20	Doha, QA, DOH	30,906,303	17.3
17	16	Tokyo, JP, NRT	30,547,564	3.2
18	17	New York NY, US, JFK	30,020,301	6.5
19	18	Barcelona, ES, BCN	29,067,531	6.7
20	19	Rome, IT, FCO	28,280,267	5.4

The air transport industry is now large – it accounts for about 1% of the GDP of both the EU and the US – and is vital in many industries such as tourism, exotics, and hi-technology. It is an important transporter of high-value, low-bulk cargoes. International aviation moves about 40% of world trade by value, although far less in physical terms. The market is served by a diversity of carriers, some specializing in long-haul international routes and others in short-haul markets. Table 1 offers some indication of the scale of larger airlines involved. To handle the interface between land and air

transport the world's major airports have grown to handle millions of international passengers (Table 2) and tons of cargo each year, and many have been significant catalyst facilitating, in particular, the growth of modern hitechnology industries and tourism about them. Last years, passenger air services globally link around 15,500 airports; with the fastest growth in air services over the past three decades being in the Europe-Asian Pacific markets [1].

TURKISH AIR TRANSPORTATION

Civil aviation activities in Turkey have been parallel to the developments in the world. With the advent of the Republic, greater importance was given to aviation. The first significant step of the Turkish Republic in civil aviation was the foundation of Turkish Aeroplane Society on 16 February 1926. Another important development is the foundation of State Airlines Administration on 20 May 1933, which constitutes the groundwork of Turkish Airlines and Directorate General for State Airport Authority. Its mission was to provide both air transport and the operations of aerodromes. Thus, air transport begun between the principal cities of Turkey [11].

The development of air transport in Turkey in 1950s made it necessary to separate the functions of "air transport" and "operations of aerodromes". The functions were separated under Law No. 6623 of 21 May, 1955, in accordance with which air transport was entrusted to the Turkish Airlines Inc. Law No. 6686 of 28 February, 1956 had placed the administration of the aerodromes, ground services, air transport, air traffic control and aeronautical communications under the responsibility of the Directorate General of the State Airports, which has its own legal personality and budgetary annex (General Directorate of State Airports, 2006:8). In this way Turkish Airlines was reorganized as a corporation managed and operated under private law. On the other hand, in order to provide ground handling and catering services to airlines, a state owned company, Uçak Servisi Anonim Şirketi (USAŞ), was established under the management of Turkish Airlines in 1958. The developments in Turkish Civil Aviation Industry ceased in 1950s, and there had been no remarkable developments until 1983 [11].

So, Turkish air transportation sector has developed greatly during recent decades and this sector currently plays a crucial role in the public air transport both in Europe and other parts of the world. Turkish airlines have developed not only their capacity, but they have also been successful in improving their services in comparison with other operators in the market which has resulted in an increasing willingness among passengers to choose these companies for their travel. Therefore, Turkish civil aviation has gained a good reputation globally. Moreover, Turkish air transportation has grown both in national level and global level [4]. EUROCONTROL has reported a growth for Turkey from being the seventh in air traffic in 2006 to the first in air traffic in 2015 [5]. Turkish Airlines corporation (THY) conducts air transportation as one of the main air transporters in Turkey and is recognized as a preferred airline in the world. In 2016, Turkish Airlines has reported a flight schedule to 277 cities and in 126 countries (Figure 1). In terms of profitability, Turkish Airlines has reported an operating profit of 2450500000 Turkish lira in 2014 with a 137 percent increase in sale revenues compared to 2013 figures [6].



Figure 1. A B737 of Turkish Airlines on Kigali Airport of Rwanda [7]

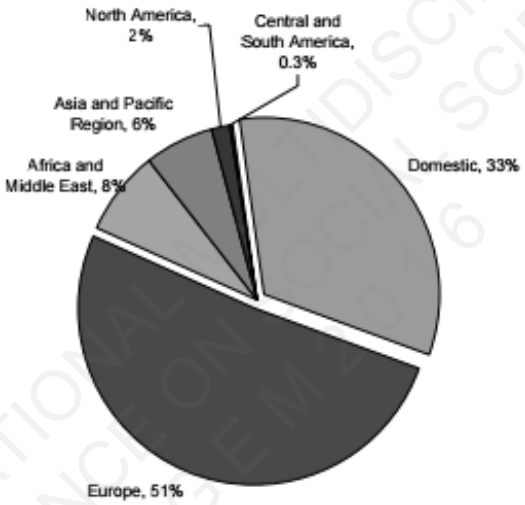


Figure 2. Regional distribution of scheduled passenger trips originating in Turkey [12]

Airlines registered in Turkey carry 43 million passengers and 298,000 tons of freight a year from and within Turkey. Among the many reasons that people and businesses use air transport, people rely on it for holidays and visiting friends and family; while businesses use air transport for meeting clients and for the speedy and reliable delivery of mail and goods often over great distances. The air transport network, the "Real World Wide Web", offers practical, fast and reliable transport across the globe. The regions which travelers fly to and from underline its global reach (Figure 2). Airlines registered in Turkey directly employ 20,000 people locally, and support through their supply chains a further 50,000 jobs. Examples of these supply-chain jobs include those in the distribution sector delivering aviation fuel; and jobs in the catering sector preparing the meals served on airlines. A further 20,000 jobs are supported through the household spending of those employed by airlines and their supply chain. These airlines directly contribute around TL 2.6 billion to the Turkish economy (GDP). The sector contributes indirectly another TL 2.2 billion through the output it supports down its supply chain. A further TL 0.9 billion comes from the spending of the employees of the airlines and their supply chains. Overall, these airlines contribute over TL 5.8 billion to the economy and support 90,000 jobs in Turkey [12].

EUROPEAN AIR TRANSPORTATION

Despite an extensive road and rail network, 43% of international travel within the EU was by air in 2013 [9]. Air travel is particularly important for peripheral nations such as Spain and Greece and island nations such as Malta and Cyprus, where a large majority of border crossings are by air [9]. A large tourism industry also attracts many visitors to Europe, most of whom arrive into one of Europe's many large international airports – major hubs include London Heathrow, Istanbul Atatürk, Paris-Charles de Gaulle, Frankfurt and Amsterdam Schiphol (Table 2). The advent of low cost carriers in recent years has led to a large increase in air travel within Europe. Air transportation is now often the cheapest way of travelling between cities. This increase in air travel has led to problems of airspace overcrowding and environmental concerns. The Single European Sky is one initiative aimed at solving these problems [5].

Within the European Union, the complete freedoms of the air and the world's most extensive cabotage agreements allow budget airlines to operate freely across the EU [5]. Cheap air travel is spurred on by the trend for regional airports levying low fees to market themselves as serving large cities quite far away. Ryanair is especially noted for this, since it primarily flies out of regional airports up to 150 kilometers away from the cities they are said to serve. A primary example of this is the Weeze-Skavsta flight, where Weeze mainly serves the Nijmegen/Kleve area, while Skavsta serves Nyköping/Oxelösund. Ryanair however, markets this flight as Düsseldorf-Stockholm, which are both 80–90 kilometers away from these airports, resulting in up to four hours of ground transportation just to get to and from the airport.

Today, 267 airlines from different parts of the world are grouped by the international classification of International Air Transport Association (IATA). These are Europe and Russia (102 airlines), North America and Canada (48), China and North Asia (28), Asia Pacific (32), Africa and Middle East (57). It is obvious that IATA has the largest number of airlines from Europe.

Table 3. Percent of inputs and outputs by airline type [8]

Shares of output revenues	Passenger	Cargo	Other	Salaries	Capital	Fuel	Other
Full service airlines							
Average	78.1	10.3	10.9	22.2	11.3	25.3	41.5
St. dev.	10.6	8.5	7.2	7.8	4.0	8.4	8.5
Low cost airlines							
Average	93.5	0.2	6.3	23.2	11.0	27.2	38.6
St. dev.	4.4	0.6	4.5	10.4	4.5	12.3	14.0

Table 3 shows some of the main features of the airlines of Europe. Passenger revenues range from 49% for Eva Airways to 98% for Norwegian Airlines. As most (low-cost carriers) LCCs do not carry cargo, they have the highest shares of passenger revenues. Other revenues come mainly from selling maintenance and engineering services, catering, leasing of own aircraft, sale of fuel and sale of goods but these are a small share, and account only for 27% for Japan Airlines, the carrier with the largest share.

The airlines vary considerably in size, with an average doing 66,155 million available seat kilometers (ASKs), The largest company is American Airlines doing 283,364 million while the smallest one, Cyprus Airways, registers 3,067 million [8].

TURKISH AIR TRANSPORTATION IN THE EUROPEAN AIR TRANSPORTATION

The European Union and the Turkish authorities have today initialed an aviation agreement which will remove nationality restrictions in the bilateral air services agreements between EU Member States and Turkey. This agreement will allow any EU airline to operate flights between any EU Member State and Turkey, where a bilateral agreement with Turkey exists and traffic rights are available.

This so-called "horizontal'" aviation agreement does not replace the bilateral agreements in place between EU Member States and Turkey, but adapts them to bring them into line with EU law. Currently, there are 42 such horizontal agreements between the EU and 50 countries worldwide. More than 800 bilateral air services agreements have already been modified by the joint efforts of the European Commission and EU Member States to replace nationality rules with the principle of EU airline designation.

The agreement is an important step towards further strengthening EU–Turkey aviation relations and will encourage traffic between the EU and Turkey. Air transport is crucial for relations between the EU and Turkey, linking people, cultures and businesses. Turkey is one of the key aviation partners of the EU. Passenger traffic between the EU and Turkey reached more than 25 million in 2008, making Turkey the third largest external aviation market for the EU in number of passengers, after the United States and Switzerland.

The agreement will open the way for further cooperation between the EU and Turkey in civil aviation including in the areas of aviation safety, security, air traffic management, technology, research and industrial cooperation, consumer and environmental protection, and competition [10].

Table 4. The biggest airlines of the world by number of countries served

Airlines	Countries served
Turkish Airlines	126
Lufthansa Group	83
Emirates	83
Air France-KLM	78
International Airlines Group	78
Qatar Airways	74
United Airlines	70
Delta Air Lines	68
Singapore Airlines	66
Etihad Airways	60

CONCLUSION

It is seen that Turkish Airlines is one of the biggest airlines in the world as given in Table 4. On the other hand, Turkey, which has 7 airlines companies member of IATA, is the third country after Russia and Germany in Europe. Involvement of Turkey in the European Union is very important due to the potential capacity in aviation. In case of the joining, both Turkey and European countries will benefit from the relationships.

REFERENCES

[1] Keb B., The Impacts of Globalisation on International Air Transport Activity, Global Forum on Transport and Environment in a Globalising World, Guadalajara, Mexico, 10-12 November 2008, pp 40.
[2] (2016) The IATA website [Online]. Available: http:// http://www.iata.org
[3] (2016) The ACI website [Online]. Available: http:// http://www.aci.aero
[4] Amirhassan A., Determinants of Profitability in the Airline Industry: A Comparison with Turkish Airlines, Doctoral dissertation, Eastern Mediterranean University, 2014.
[5] (2016) The EUROCONTROL website [Online]. Available: https:// www. eurocontrol.int
[6] THY 2014 ANNUAL REPORT, 2014.
[7] (2016) The New Times website [Online]. Available: http://www.newtimes.co.rw/
[8] Cristina B., A´ lvaro C., Elena S., Airlines performance in the new market context: A comparative productivity and efficiency analysis, Journal of Air Transport Management, Portugal, vol. 14, pp 270–274, 2008.
[9] (2016) The Eurostat website [Online]. Available: http://ec.europa.eu/eurostat/ statistics-explained
[10] (2016) The European Commission website [Online]. Available: http://europa.eu/rapid/press-release
[11] Ender G., The Evolution of Turkish Air Transport Industry: Significant Developments and the Impacts of 1983 Liberalization, Yönetim ve Ekonomi, vol. 17, pp 63-91, 2010.
[12] Oxford Economics, Economic Benefits from Air Transport in Turkey, 2011.

SCIENTIFIC CONFERENCE 3rd MULTIDISCIPLINARY SCIENCE AND ARTS

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE POSITIONS AND PROSPECTS OF RUSSIA IN THE GLOBAL OIL MARKET IN TERMS OF ITS STRUCTURAL TRANSFORMATION

Dr., Prof. Vitaliy Minashkin

PhD, Khudoynatov Zhan

Plekhanov Russian University of Economics (PRUE), **Russia**

ABSTRACT

Tendencies in the oil market transformation are currently one of the main geopolitical factors across the globe. Statistical research of the oil market and its structure plays a key role in the light of increased competition for new exploration fields, distribution channels and markets between major companies and countries. The results are widely used in many areas from making commercial decisions on companies' level to foreign policy considerations of countries and unions.

The article investigates the structural changes in the main indicators of the global oil market in recent years. It analyzes the contribution of individual countries and regions in the total volume of proven oil reserves, its production, consumption, exports and imports. Individual and generalizing indicators of structural changes are used to quantify the dynamics of the processes.

The trends of the global oil market that have been identified and studied in the article began to emerge in recent years and presumably will continue in the medium term. The key determinants of the market developments and its current structural changes are formulated. The position of the Russian Federation concerning the change in the global oil market is stated. Technological and operational problems that hinder the development of the Russian oil complex at the current stage are presented.

Keywords: The global oil market, mining and oil consumption, oil exports, Russian oil complex.

INTRODUCTION

Oil is the main energy source. Its production and consumption are increasing dynamically due to development of global economy. Besides, crude oil is the top-selling raw product in the world. Nowadays the amount of proven oil reserves, exploration rate, oil export and import volumes and oil prices directly affect the prosperity and life standards of residents from all continents as well as correlation of forces between the leading countries on the global stage. Despite the fact that during the recent years future energy development is being reconsidered, oil still is the most important prime source of energy that determines its impact on the economy and politics, safety and state's economic growth.

The oil market is a specific industrial market, and it has a number of features that need to be taken into account during the analysis. It is necessary to take into consideration the specification of the commodity itself, its exploration field, composition, grade and brand. It is important to make allowance for the factors determining the supply and demand of

oil in the market at every certain period of time, as well as regional aspects of oil sales and consumption.

DEVELOPMENT AND CURRENT STATE OF THE RUSSIAN FEDERATION OIL COMLEX

Russia currently is seeking to maintain and improve its position in the global oil market, as oil export is one of the most stable and highly profitable sectors in the Russian economy. It is a very important factor for the progressive development of the national economy and the source of funds for the solution of primary social and economic problems. Over a long period of time the Russian Federation stands as one of the leaders in terms of reserves, production and export of oil in the world [1]. The largest volumes of oil production in Russia were in the 1980-s reaching 600 million tons per year (Figure 1).

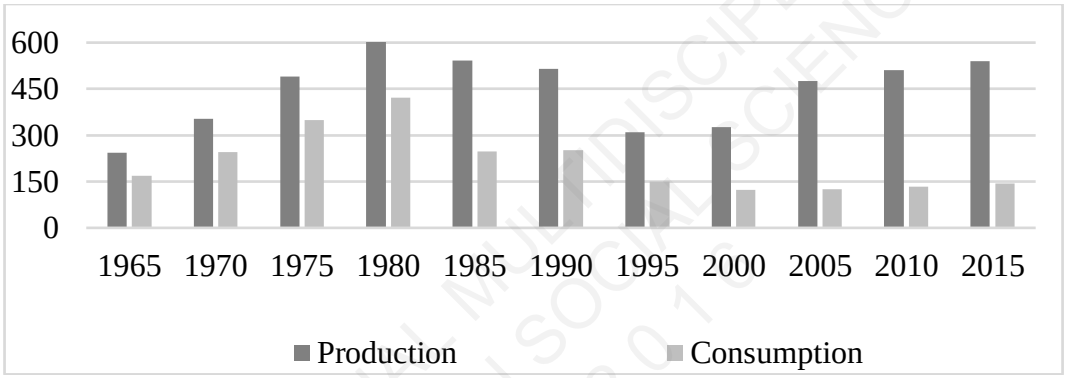


Figure 1 – Oil production and consumption in the Russian Federation in 1965-2015., million tons[1]

During the period from 1990 till 1999 oil production declined by 40% and reached the level of 305 million tons per year. In the first place these tendencies can be explained by the economic situation in the country: transition from centrally-controlled economy to market-based economy led to institutional changes. Moreover, it reduced the investment inflows into the industry, which negatively affected exploration works.

By the end of the 1980-s existing fields began to exhaust and since 1994 oil reserves increase has not compensated extraction volumes. The sizes of new fields have reduced. Increase in oil reserves has been achieved mainly due to additional exploration of previously discovered fields as well as inferred reserves requalification into explored ones. All the above mentioned has led to reduction in oil production in the country.

However, in the early 2000-s there was a change in this trend and a steady recovery in production volumes started. Average annual growth amounted to 4%. After 2007 production growth rates significantly decreased again and in 2015 an increment was 1.2% YoY.

Currently the oil complex of the Russian Federation is a multilevel system covering all levels from geological exploration to refining, transportation and sale. The structure of the oil industry is a complex system consisting of oil producers, refineries, servicers, geological and oil exploration geophysics organizations, transportation, construction and

[1] Source: BP Statistical Review of World Energy June 2016 http://www.bp.com

engineering companies, universities, research and project institutions [2]. However, it is necessary to mention that oil production is still the basis of the complex and other structural units should be viewed as its infrastructure.

At the beginning of 2016 there were 299 oil and gas condensate producers in the Russian Federation that have the license for the use of subsurface resources, including:

- 117 organizations within the structure of 10 vertically integrated companies with the total share of 87.0% of the national oil production as of 2015 year-end, including Gazprom;
- 179 independent production companies;
- 3 companies operating under the terms of production sharing agreements [3].

The raw material base of the Russian oil complex consists of hydrocarbons natural reserves. Oil production is currently carried out on the territory of 7 oil provinces, including the West Siberian province with more than 2/3 of the total production and the Volga-Ural province with about 1/4 of the total production.

It is necessary to mention that the development of the country's oil complex at the present stage is characterized by technological and operational problems among which the most important are the following:

1. Low level of oil extraction efficiency;
2. Inefficient use of associated gas (usually it is burnt) that results in a profit reduction for oil companies and causes significant damage to the environment due to emissions. The annual burning of associated gas in Russia is about 20 billion m3;
3. A high degree of capital funds depreciation in oil refining industry (up to 80%) and low quality of oil products due to the use of outdated technologies;
4. Slow implementation of new technologies and innovations, which is essential at this stage due to the increased proportion of reserves difficult to extract (super viscous oil, natural bitumen), the need for development of offshore fields and deep horizons in mature oil and gas provinces.
5. The slowdown of oil production growth rates which leads the industry stagnation.

Further development of the oil complex of the country is only possible when the above mentioned problems are solved by the use of new technologies for oil production and refining, as well as more efficient use of recoverable resources.

In addition to the impact on the macroeconomic situation in the country, the oil complex helps to maintain the ruble exchange rate, formation of a successful social policy and growth in the economy of investment resources. Russia's economy is still dependent on the incomes of oil and gas companies due to which a significant part of the federal budget and about 70% of export are formed. The market value of oil and gas companies is half of the capitalization of the Russian stock market.

Key areas of activities of the Russian Federation Government in the sphere of state policy concerning the development of the oil complex are aimed at improving the competitiveness of the industry. In accordance with the "Energy Strategy for the period till 2030", approved by the Russian Government dated 13 November, 2009 no.1715-p, it is planned to take actions to create favorable conditions in the industry, stimulating the development of oil refining and petrochemical industries, developing exchange trade of resources, in

SCIENTIFIC PROGRESS: MULTIDISCIPLINARY RESEARCH IN SOCIAL SCIENCES AND ARTS CONFERENCE PROCEEDINGS

particular, there is a necessity in establishment of regulatory frameworks for the development of trade of energy derivatives (futures, options, etc.) for rubles and use the results of the exchange trades as indicators for the entire pricing system for Russian resources [4]. At the same time, the effectiveness of these measures largely depends on the situation on the global oil market, and structural and dynamic changes that take place on this market. Under conditions of sanctions, announced by Western Europe and the US against the Russian economy, strong and stable positions of Russia in this market are becoming significantly relevant.

MAIN TENDENCIES OF STRUCTURAL CHANGES OF THE GLOBAL OIL MARKET

Tendencies that have developed in the global oil market after the crisis of 2008 will be considered. Changes of total proved oil reserves are determined by such factors as depletion of the producing fields and the discovery of new ones, which, in turn, comes with varying degree of intensity as a result of continuous improvement of exploration work oil production technologies.

Overall, during the period from 2009 to 2015 oil reserves increased by 11.0%, which in absolute terms amounted to 168.4 billion barrels. Proven world oil reserves at the end of 2015 reached 16976 trillion barrels. It should be mentioned that the contribution of the various regions of the world to total reserves increment was not the same. Thus, in the Middle East countries reserves are estimated at 803.5 billion barrels, which corresponds to 47.3% of total world reserves of raw materials [5].

Great value of the absolute increment of reserves in 2010 (107.3 billion barrels) is associated with the discovery of large deposits of Carabobo and Junin in the east of Venezuela in the Orinoco Oil Belt, as well as with reserves revaluation of Chicontepec field in the Gulf Coast. Pemex company is planning to develop a technology for effective mining in the areas over the next two decades.

For the quantitative assessment of the dynamics of individual countries' shares in the proved reserves, total structure average indicators of structural changes have been used - the average "absolute" increment and the average growth rate of each country's shares in the total volume of the studied parameters.

The results show that in both absolute and relative terms, Venezuelan share significantly increases every year. Indicators of Saudi Arabia, Canada, Kuwait, UAE and Russia decrease slightly. It should be pointed out that the reduction in the relative amount of reserves of Saudi Arabia, Canada, Kuwait and the United Arab Emirates has been stable in recent years.

It is noteworthy that Russia's losses in the structure of the world's leading reserves are minimal. During the studied period, the proven oil reserves on the territory of Russia have not changed significantly and by the end of 2015 proven oil reserves had stabilized at the level of 5 - 6% of the global value. This has allowed our country to occupy the sixth position according to this indicator. It should be noted the that the backlog from the United Arab Emirates with their unchanged reserves of the countries that occupy the following positions in the ranking in recent years, is gradually decreasing.

In general, the distribution of the proved oil reserves by individual countries during the analyzed period remained relatively stable - the relative share of individual countries after 2010 on average changes by no more than 0.3 percent. At the same time, the dynamics of the coefficients convincingly demonstrates the tendency of reduction of structural changes in proven oil reserves. This indicates that the structure of the reserves, taking into account the achieved level of exploration works technologies, is now stabilized and it will not be a factor of changing market conditions in the near future.

World oil production has grown by more than 1/10, or to 474 900 000 tons since 2009. By the end of 2015, average daily oil production in all oil-producing countries collectively amounted to almost 12 million tons.

Changes in oil production volumes in the studied period are primarily due to the increasing needs of the global economy. At the same time, the dynamics of production is also influenced by such factors as armed conflicts between countries - producers of oil, political instability in the Middle East, the confrontation between oil companies of the developed countries and OPEC, who are trying to regulate oil production volumes for the purpose of their pricing policy.

It is necessary to pay attention to changes in the United States policy regarding oil production volumes in the country. Gradually reducing production volumes and bringing them to a level slightly exceeding 300 million tons by the end of 2008, starting from 2009 the United States began significantly increase its volumes annually – in 2012 the increment amounted to 48.7 million tons or 14.1 %, in 2013 – 54.3 million tons, or 13.8%, in 2014 – 74.8 million tons or 16.7%. Exactly this circumstance became the cause of price pressure from Middle Eastern producers who are trying to force a competitor who is strengthening their position out of the market.

Structural changes in the overall index of oil production in the context of the top ten oil-producing countries are shown in Table 1.

Table 1 - Structural changes in the total oil production volume in different countries 2009-2015.

Country	Relative share increment, percentage points	Relative share growth rate, %
Venezuela	- 0.9	77.5
Iraq	1.4	145.2
Iran	-1.1	79.2
Canada	1.0	125.6
China	0.0	100.0
Kuwait	0.3	109.7
UAE	0.8	125.0
Russia	-0.5	96.1
Saudi Arabia	1.3	111.1

SCIENTIFIC CONFERENCE SGEM 2016 3rd INTERNATIONAL MULTIDISCIPLINARY SCIENCES AND ARTS

USA	4.7	156.6
Other countries	-7.0	82.3

Data from Table 1 suggest that the distribution of oil production by countries - the leaders of the past five years as a whole remained relatively stable. Besides, the above-noted significant increase in oil production, both in absolute and in relative terms for the relative share of the United States, to a less extent - Iraq, Canada and Saudi Arabia deserves attention. It should be emphasized that the United States, without having substantial proven oil reserves, at the same time has become one of the two leaders in the production of hydrocarbons and has almost reached the Saudi Arabia by this indicator and got ahead of the Russian Federation. At the same time the growth rate of the US relevant share in the total production volume over the studied period increased steadily from 1.4% to 11.8%.

The largest decline in the share of oil production in recent years is observed in Iran and Venezuela. The reduction of Russia's share in the structure of the world's leading oil producer is also the case, but on the average it does not exceed 0.1 percent per year. It is noteworthy that the role of other countries in oil production is quite noticeable. Although their relevant share in the production index is declining steadily, but still remains high; the share of these countries now is accounted for nearly 1/3 of the total oil production.

Oil consumption for the period from 2009 to 2015 increased by 9.7% or 382.6 million tons and reached 4331.3 million tons by 2015. For the six studied years the average daily global oil consumption has increased by more than 1 million tons and in 2015 amounted to 11,9 million tons.

At the same timesaver the whole studied, except for the last year, the consumption volumes exceeded oil production volumes which, in the first place, was due to changes in the economy's needs for energy and consequently the use of existing reserves. It should be noted that in 2010 – 2011 and in 2013 the excess was more than 50 million tons. It was only in 2015 when oil production was more than 30 million tons higher than the amount of this energy source volume consumed by the economy for the first time for a number of years which is certainly a negative signal.

The world leaders in oil consumption are the United States and China, which currently provide one-third of the global demand for hydrocarbons.

The scale of China's oil consumption over the studying period increase annually – the growth rate of relevant share of this country in total world consumption ranges from 108.7% in 2010 to 104.0% in 2015. It should be noted that the backlog of Chinese consumption from the United States is consistently decreasing. It is noteworthy that Russia's share in global oil consumption has remained relatively stable, falling only slightly by 0.2% in 2015.

In today's global economy based on international cooperation in the energy sector, the export-import operations in the oil market are especially important. In recent years, the total volume of oil exports in the world was steadily increasing and it amounted to 1977.2 million tons by the end of 2015.

The ratio of individual regions in the export transactions in the international oil market as a whole remained stable, but it was undergoing directional structural changes. The former

Soviet States, APAC countries, Canada and the United States have strengthened the impact on the international oil market. The Middle East countries, West Africa countries, South and Central America countries, on the contrary, reduced the share of oil exports (Figure 2).

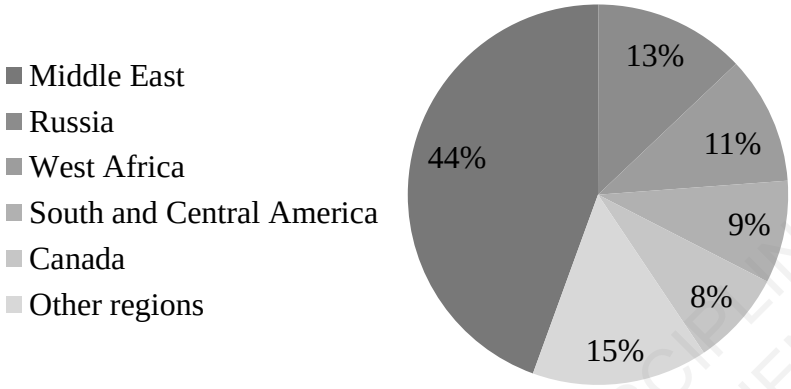


Figure 2 – The structure of oil export in 2015, %.

The absolute leaders on oil imports nowadays are Europe and the United States, whose shares of imported oil accounted for 43.2% by the end of 2015. There is a tendency of sustained reduction in the relevant share of Europe and the United States in total imports. Especially the United States should be allocated, this country annually decrease its share of oil imports, on average more than by 1 percent thus reducing its energy dependence on external suppliers.

CONCLUSION

In general, summing up the analysis of dynamics of the main indicators of the global oil market, it is necessary to note the tendencies that have begun to emerge in recent years, namely: the substantial increase in proven oil reserves in South and Central America; the increase in demand for oil resources from the economies of a number of rapidly developing Asian countries, primarily China and India; price war of the OPEC countries and the USA in order to counteract the development of promising shale deposits, which is one of the factors in a significant reduction of oil price, formed in the last two years; sharp increase in US oil production alongside a consistently high production increment in the Middle East. The latter circumstance greatly exacerbates the confrontation on the world oil market between the US and Russia, when the share of Russia, together with other post-Soviet countries, after 2000 accounts for more than 1/3 of the annual absolute increase in oil exports.

Consideration of the above mentioned tendencies allows to identify those areas of the oil market transformation which enable to generate the most accurate picture of the prospects for its development as well as to determine the targets for the Russian Federation in this area. Moreover, it should be noted that the functioning of the Russian oil complex at the present stage is also characterized by a number of technological and operational problems that have been accumulated in recent years and the timely and effective solution to this problems will largely affect the prospects for the Russian oil complex's further development and increase its competitiveness in the global oil market.

REFERENCES

[1] The Federal State Statistics Service. - http://www.gks.ru/.

[2] A.A. Tolstonogov Estimation of development prospects for Russian oil complex by increasing its investment attractiveness // Modern problems of science and education. - 2014. – no. 5.

[3] Ministry of Energy of the Russian Federation. - http://minenergo.gov.ru/.

[4] Energy Strategy of the Russian Federation till 2030 approved by the RF Government dd November 13, 2009 no. 1715-p.

[5] BP Statistical Review of World Energy June 2016. – http://www.bp.com/content/dam/bp/excel/energy-economics/statistical-review-2016/.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE RELATIONSHIP OF THE REGIONAL INNOVATION POTENTIAL AND THE LEVEL OF SMALL AND MEDIUM-SIZED ENTREPRENEURSHIP DEVELOPMENT IN RUSSIA

Prof. Dr. Tatiana Dubrova[1]

PhD Student Anna Ermolina[2]

Ass. Prof. Dr. Michail Esenin[3]

[1,2,3] Plekhanov Russian University of Economics, Russia

The aim of this article is to analyze the relationship of innovation potential and its main components with the level of small and medium-sized enterprises development in Russian regions. Based on international and Russian experience the regional innovation potential was evaluated using the multilevel approach. It includes the calculation of the partial sub-indices reflecting the innovation potential components in the regions (resources, infrastructure and effectiveness of innovation) as well as the composite index evaluation based on them. Principal components analysis of the variables characterizing small and medium-sized enterprises density in a region and these enterprises contribution to regional employment allows obtaining generalized characteristic of the level of small and medium-sized enterprises development. By the values of resource and effectiveness components of the innovation potential the typological groups of Russian regions were highlighted. The analysis reveals a significant moderate positive relationship between the level of small and medium-sized enterprises development (in particular, the groups of micro and small enterprises, medium-sized enterprises) and the composite index of innovative potential as well as sub-indices characterizing its components. For medium-sized enterprises this relationship with the resource and effectiveness components is higher because medium-sized enterprises are more involved in innovation activities. Currently, the contribution of small enterprises to innovative development of Russian regions is negligible, so the level of small entrepreneurship development depends mostly on regional infrastructure than on other aspects of innovation. Finally, practical recommendations were developed to stimulate entrepreneurial activity taking into account regional specificities.

Keywords: small and medium-sized enterprises, innovation potential

INTRODUCTION

Small and medium-sized entrepreneurship (SME) is the essential part of economy in developed countries. According to OECD data (2013), in European countries the proportion of SMEs in the total number of organizations exceeds 99.0%, SMEs provide 60-70% of workplaces in the EU, and the proportion of SMEs in added value varies from 53.2% in Hungary to 74.4% in Estonia [1]. Besides a significant contribution of SME to employment and added value, small firms supporting their competitiveness become the producers and providers of innovations [2].

Compared to European countries, the contribution of SME to Russian economy is not so substantial. Russian SMEs provide only 25% of permanent workplaces and their share in GDP equals 20-21% approximately [3]. The innovative activity of small business also

remains relatively low in Russia. According to Rosstat survey (2013), the proportion of small firms implementing technological innovations was equaled to 3.1% in mining and quarrying, 5.1% in manufacturing and 2.2% in electricity, gas and water supply correspondingly.

This research aims to analyze the correlation between regional innovative potential and the level of SME development to promote business participation in the modernization of Russian economy. The term regional innovative potential means the complex estimate of regional innovative development and its capabilities that characterizes its various components: human, financial, scientific, technical and others [4]. Nowadays there are a large number of innovation indexes of Russian regions as well as approaches to measure SME development in Russian regions. However, as a rule, these two fields are studied separately. In particular, the correlation between SME development and the components of innovative activity in the regions has not been studied properly yet.

Thus, this research aims to:

- estimate the innovative potential of Russian regions using the complex characteristic and its components;
- define typological groups of Russian regions with different characteristics of innovative potential;
- rank Russian regions by the level of SME development and to evaluate its relation to regional innovative potential and its components.

This study contributes to the design of support measures for SME and to promote SME innovative activity taking into account regional differences.

BACKGROUND

The exploration and evaluation of regional innovative potential take an important place in innovative policy making considering effective using of territorial resources. In recent decades, a large experience in monitoring and evaluating regional as well as country innovative potential was gained. The existing approaches are based on the systems of indicators characteristic of the innovative development in a particular area. The problem of territorial innovative potential is explored by the European Commission, OECD, the World Economic Forum and the World Bank, United Nations Industrial Development Organization (UNIDO) and many others.

There are various systems of territorial innovative potential and its components estimation. The indexes of innovative development can be the part of complex competitiveness indexes. The most common innovation indexes are the European Innovation Scoreboard (EIS), the International Innovation Index, and the Global Innovation Index (GII). At the regional level the monitoring of innovative development exists in the EU (Regional Innovation Scoreboard, RIS) and the USA (Portfolio Innovation Index, PII).

The existing estimation systems of innovative processes are developed in a majority of countries; the methods of international comparisons are also commonly used. Until recently there were almost no studies of Russian regions innovative development and its complex estimation because of the absence of innovative activity statistics in the regional context. The examples of recent Russian studies in the area of regional innovative activity are the index of innovative development of Russian Federation designed by the Institute of Economics RAS on the basis of the EU methodology [7], similar to the European

Innovation Scoreboard the composite index of innovation activity developed by V.N. Kiselev [8], the index of innovative development of Russian regions designed by the Association of Innovative Regions of Russia [9], Russian regional innovative index of National Research University Higher School of Economics [6].

MATERIALS AND METHODS

The current research is based on the official Rosstat data (2013) for Russian regions. To eliminate territorial differences, regional economies size, various population of Russian regions, all analyzed indicators are calculated in relative terms.

As the complex estimate of regional innovative potential the innovation index calculated as the weighed geometric mean of three components (sub-indexes) is used: (1) the resources of innovative activity, (2) infrastructure and (3) the results of innovative activity. The first two sub-indexes have the weights of 0.3 and the last one, the sub-index of the results of innovative activity has the weight of 0.4 in the final index. Each of the sub-indexes consists of several relative indicators presented in Table 1. These indicators have equal weights within the sub-index.

Thus, used approach includes the following steps: preliminary, exploratory data analysis (identifying and replacing extreme values, correlation analysis); normalization of initial values considering the influence of selected indicators on innovative processes; calculating complex regional innovation index.

To identify extreme values on the first step box-plots of initial indicators were built. The values exceeded three interquartile range were replaced by minimum (maximum) acceptable values: $x_{\min} = q_1 - \Delta$, $x_{\max} = q_3 + \Delta$, where q_1, q_3 - the 1st and the 3rd quartiles correspondingly, Δ - the value, equaled to three interquartile ranges. The selected indicators do not have strong correlation.

On the second step calculating re-scaled scores was applied, that means the calculation of the ratio of regional indicator value to Russian average indicator value if the indicator positively influences on innovative processes. Thus, re-scaled indicator value exceeded 1.0 means the regional advantage compared to Russian average level. The reverse transformation was applied when the indicator negatively influenced on innovative processes. For example, high degree of fixed assets deprivation has a negative impact on the resources of innovative activity so the ratio of Russian average to regional value was calculated in the study.

The final step contains the calculation of the geometric mean of re-scaled indicators to sub-indexes of innovative potential and the following calculation to the composite characteristic using the described above weights.

Table 1 – The structure of regional innovation index

Sub-index	Indicators
The resources of innovative activity	The number of students (ISCED 5 – 6) per 1 000 population aged 15-72
	The proportion of employed population having completed tertiary education in total employment, %
	The number of researchers per 100 000 employed population

	The degree of fixed assets deprivation, %
	The renovation coefficient of fixed assets, %
	The proportion of non-budget finances in domestic R&D expenditures, %
	Investments in capital stock as % of GRP*
	Direct foreign investment per one employed, $$$
Infrastructure	The proportion of organizations using the Internet in total number of organizations, %
	The proportion of organizations taking part in join R&D projects in total number of organizations, % (mining and quarrying, manufacturing, electricity, gas and water supply)
	The number of personal computers per 100 employed
	The number of active users (individuals) of the Internet per 100 000 population aged 15-72
	The number of innovative infrastructure objects per 100 000 population aged 15-72
The results of innovative activity	The proportion of organizations realizing innovations in total number of organizations, %
	The proportion of innovative goods and services in total amount of goods and services, %
	The proportion of high-technology and knowledge-intensive industries in GRP, %
	The number of high productive workplaces per 100 employed population

Note: * - Gross Regional Product
Source: compiled by the authors

Thus, the review and analysis of existing Russian and foreign methodologies allowed to obtain regional innovation index considering innovative activity of medium and large-sized enterprises that is relevant to the research aims. The main advantages of the described approach are the robustness of extreme values, clear and obvious interpretation of the results, usage of the official statistics and the coverage of all Russian regions.

RESULTS

The level of SME development is generally determined by three key indicators: (1) SMEs number per 1 000 labor force population or employed population in a country or region; (2) the proportion of employed on SMEs in the whole employment and (3) the proportion of added value in GDP (GRP) or SME revenue (turnover) in the whole revenue (turnover). In the aim of the analysis the first two indicators which do not use value terms were selected. The existing correlation between these indicators allowed moving to the single principal component characterizing the general level of SME development in Russian regions. The same general characteristics were calculated to describe the level of development of various size groups of enterprises. In all cases principal component analysis (PCA) led to a slight decline of informational content (no more than 15% of total dispersion).

Bivariate Pearson's correlation coefficients and rank Spearman's correlation coefficients show significant moderate positive correlation between the index of regional innovative potential and the level of SME development in Russian regions. In particular, Pearson's correlation coefficient between the index of innovative potential and the level of small and medium-sized enterprises equals 0,625, between the index of innovative potential and the level of micro- and small-sized enterprises development is equaled to 0.613. The rank correlation coefficient between the index of innovative potential and the level of micro- and small-sized enterprises development equals 0.532. The analysis has shown the increasing of the correlation among larger size groups of enterprises that corresponds to the previous results indicating innovative activity growth with firm size growth. The same findings were received in the analysis of innovative activity of Russian and European small-sized industry enterprises creating technological innovations [10, 15].

In the analysis of separate components of the index of innovative potential and their correlation with the level of SME development it is important to note the strongest correlation with the sub-index of infrastructure (the correlation coefficient exceeds 0.6), whereas its correlations with the sub-indexes of resources and results are weaker (0.546 and 0.494 correspondingly). The described tendencies are more typical for micro- and small-sized enterprises which level of development is mainly determined by infrastructure promoting regional innovative development as well as business growth. Medium-sized enterprises level of development is more correlated with results and resources rather than with infrastructure. Medium-sized enterprises have a greater impact on regional innovative activity than small-sized and microenterprises so their correlation with the results of innovative activity is stronger.

At the next step of the research the typological groups of Russian regions with various combinations of the innovative potential components were defined. The first and the third typological groups include regions with balanced values of the sub-indexes of resources and results of innovation activity. The first group contains regions with high and medium values of analyzed sub-indexes whereas the third one consists of the regions with low (below medium) values of these sub-indexes. The regions with unbalanced values of the described sub-indexes (high and medium values of the resources and low results of innovative activity and vice versa) are presented in the second group.

This classification was compared with SME (including microenterprises) level of development based on the described above principal component. This quantitative variable was recalculated into categorical one that allows defining high, medium and low level of SME development. According to chi-squared criterion, the significant correlation ($p<0.05$) between typological groups of innovative potential and the level of SME development in Russian regions is observed.

This relationship for small-sized enterprises (including microenterprises) is presented on the Fig. 1. More than half of the regions from the first typological group have high level of small entrepreneurship development and only 3.4% of them have the low one. In the third typological group with low values of resources and results of innovative activity almost 61% of Russian regions have low level of small-sized enterprises development and less than one fifth has high level of development. Finally, in the second typological group the distribution of the regions by the level of small entrepreneurship development is more uniform.

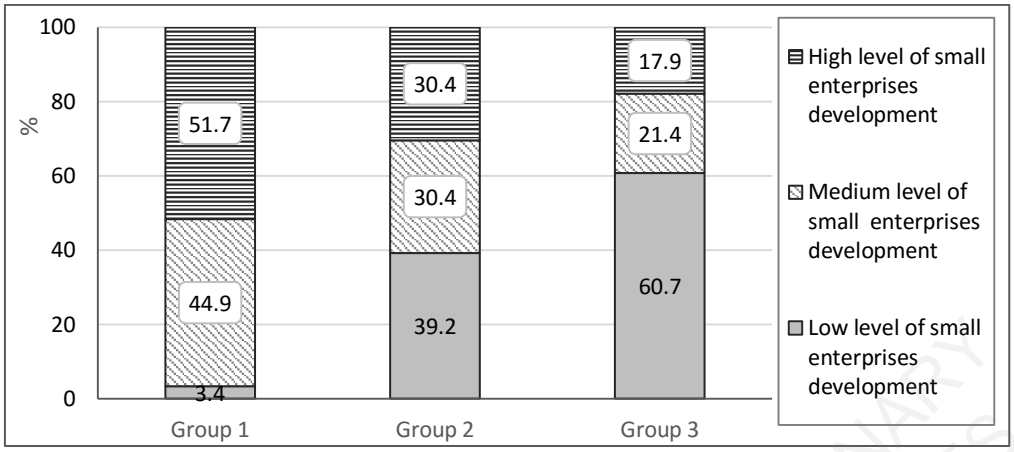


Figure 1 - The distribution of Russian regions in the typological groups by the level of small-sized enterprises development

In the second typological group two sub-clusters can be defined: (1) with high resources and low results of innovative activity and (2) high results and low resources of innovative activity. The analysis has revealed higher infrastructure level in the second sub-cluster that may explain high results of innovative activity based on its restricted resources.
Developed infrastructure is the necessary condition of SME development. Chi-squared criterion applied in the analysis of correlation between the level of SME development and the sub-index of infrastructure (after their conversion into categorical variables) shows the significant correlation for micro-, small and medium-sized enterprises (Fig. 2).

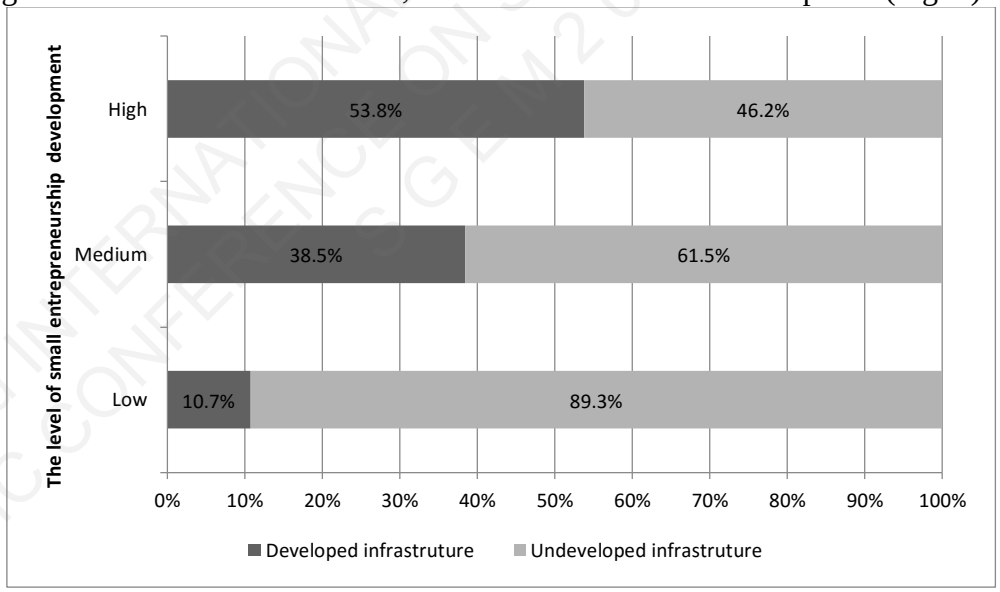


Figure 2 - The distribution of Russian regions by infrastructure development in the clusters with various levels of small entrepreneurship development

The results of the current research have shown the moderate positive correlation between regional innovative potential and the level of SME development. In the gap of the innovation index components the relation with infrastructure is stronger for micro- and small-sized enterprises whereas medium-sized enterprises demonstrate stronger correlation with the results of innovative activity that can be explained by their more

active participation in this type of activity. Cross tables analysis with chi-squared criterion has shown the significant correlation between the level of SME development and the sub-index of infrastructure. First of all, infrastructure influences notably on the results of innovative activity in the regions with low values of resources for its creation.

CONCLUSION

The regional innovative potential is influenced by various components of territorial development – human resources, the level of technical development, business investment activity, governmental support of innovations, etc. Business plays an important role in innovative process becoming the consumer of innovations as the adoption of existing technologies into production as well as the producer of its own innovations. The comparison of the innovative activity of Russian SME with developed countries shows that currently innovative capabilities of Russian SMEs are not completely created.
The current analysis aims to explore the correlation between the level of innovative development of Russian regions and the level of SME development. The realized approach has allowed calculating the complex estimation of regional innovative potential based on the aggregation of three sub-indexes (resources, infrastructure and results of innovative activity). The analysis has revealed the moderate positive correlation between the index of regional innovative potential and the level of SME development in Russian regions; moreover, the correlation increases with larger size of enterprises. It is important to note that this correlation is mainly explained by the positive correlation with the indicators of infrastructure. Furthermore, for small-sized enterprises (including microenterprises) its correlation with the component of infrastructure is higher. The level of infrastructure development contributes to regional innovative development as well as the creation of favorable business environment that is necessary for successful small business functioning.

ACKNOWLEDGEMENTS

The research was supported by the Russian Humanitarian Science Foundation (project №16-02-00716)

REFERENCES

[1] Financing SMEs and Entrepreneurs 2015: An OECD Scoreboard, OECD Publishing, Paris, 2015.
[2] Kul'kov V.M, Russian economic model, TEIS, Moscow, 2009.
[3] The development of SME in Russian Federation. State Council Report, Moscow, 2015.
[4] Bahtizin A.R., Akinfeeva E.V. Comparison estimates of regional innovation potential in Russian Federation, Forecast problems, Russia, issue 3, pp. 73-81, 2010.
[5] Bortnik I.M., et al. Indicators of innovative development of Russian regions for the purposes of monitoring and control, Innovative economics, issue 11, pp. 2-13, 2013.
[6] Ranking of innovative development of Russian regions. Vol. 2, ed.: Gohberg L.M., Moscow, 2014.

[7] Volkova N.N., Rubinshtein A.A., Romanuk E.I. Monitoring methods of NIS of the Russian Federation and international comparisons of innovation activity. Institute of economics RAS, Moscow, 2010.
[8] Kiselev V.N. Comparative analysis of innovation activity of subjects of the Russian Federation, Innovations, issue 4, pp. 44-55, 2010.
[9] Bortnik I.M. et al. A system of measurement and monitoring innovative activity in Russian regions, Innovative economics, issue 9, pp. 48-61, 2012.
[10] Dubrova T.A., Esenin M.A., Shulaeva O.V., et al. The methodology for monitoring of small entrepreneurship development in Russia: Monograph/ Publishing and Trading Corporation «Dashkov & C», Moscow, 2015. - 248 pp.
[11] Russian European SMEs, 2014/2015. – SMEs start hiring again. – November 2015/ SME Performance Review 2014/2015. – 162 pp.
[13] Annual Report on European SMEs 2013/2014 – A Partial and Fragile Recovery. Final Report -July 2014/SME Performance Review 2013/2014– 124 pp.
[14] Small and medium entrepreneurship in Russia. Statistical handbook. Rosstat, Moscow, 2015, - 96 pp
[15] SME Investment and Innovation. France, Germany, Italy and Spain, Editor by J, Abel-Koch, BPI, 2015.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE ROLE OF INFORMATION SYSTEMS IN THE MANAGEMENT OF TOURISM AGENCIES IN ROMANIA

Prof. Dr. Cezar Mihalcescu

Lecturer Dr. Beatrice Sion

Lecturer Dr. Alexandra Marginean

Romanian-American University, **Romania**

ABSTRACT

The main objective of this paper was the identification of opinions, attitudes and behaviors within tourism agencies in Romania regarding the use of information systems. The rationale for the choice of this topic was mainly to provide relevant information on a real situation in the tourism market, namely the use of information systems in tourism economic units, more precisely tourism agencies.

Statistical inquiry was the method applied in order to find out about the information systems employed by the agencies, and to identify both their weaknesses and benefits [3]. The results of the inquiry showed the opinions of the users, but, more importantly, the type of information systems available in agencies and the advantages that they bring. The inquiry was the tool of gathering data. For data interpretation and analysis the statistical program SPSS was resorted to.

The findings consist in the fact that managers introduced change in their companies in order to simplify and eliminate useless data and in order to utilize IT systems [2] that would help people work better with data. The emphasis falls on people's training, so that they should understand the business, on correlating employee performance with company performance and on using information and IT software effectively in doing business. Competitive edge will be gained by those companies which obtain superior results in business through the synchronization of three elements: employee management, information and IT [3].

The impressive advancements in the last decade of information technology have numerous applications in tourism. These technologies, together with progress in the area of telecommunications have contributed to the modernization of tourism services. The use of information technologies in tourism has allowed in-depth knowledge of both demand and supply in tourism, the tracking of tourism types, of means of transport, hotel reservations and the study of the tourism market overall [4].

Keywords: information systems, tourism agencies, Romania, management, inquiry

1. General objectives of the research

The fundamental objective of this paper is the *identification of opinions, attitudes and behaviors that can be found in tourism agencies in Bucharest as far as the use of information systems is concerned. This research has been performed on a sample of five representative agencies in Romania (Bucharest)*.

1.1. Specific objectives

• the study of the motivation lying behind the choice of the information systems used, which triggered that choice for the management of the tourism agencies;
• the identification of the most used information systems in tourism agencies;
• the analysis of the quality of the information systems and of the quality-cost ratio;
• the identification of the difficulties that the above-mentioned agencies are confronted with in using the information systems;
• the investigation of the management representatives' opinions, perceptions and options regarding the use of information systems in tourism agencies;
• the analysis of the use of Internet services by tourism agencies.

The choice for this research was inspired mainly by the desire to provide relevant information regarding a current situation on the tourism market concerning the information systems that tourism agencies should be using in order to make the sales process of tourism products more efficient, to increase their profitability as well as the satisfaction of the final consumer [7].

2. Drawing up the inquiry

Gathering statistical data in the research process is one of the most important issues, as the accuracy of the results and conclusions depends directly on the volume and quality of this data.

In designing an inquiry, "the first step is defining the objectives of the research (choosing a relevant set or sample), then thinking about the questions, applying them and then, at the final stage, interpreting the results" [1].

Thus, with the help of the method of statistical inquiry, a questionnaire containing eight representative questions was drawn up and applied on a sample of five important tourism agencies in Bucharest in order to find out which are the information systems employed by the companies, as well as their downsides and benefits.

Four people were inquired from each company, meaning a total of twenty, having different ages, genders and jobs, but all using the systems implemented by the agencies where they work.

2.1 Description of the research sample

The project addresses tourism agencies in Bucharest. Among the interlocutors we had targeted in view of performing the research, we finally established to interview five tourism agencies. In this study, the inquiry was addressed to tourism units, the structure of the final choice of people we had a dialogue with also relying on the position the respondents occupied in the respective unit [6].

As a result of the inquiry, we found out both the opinions of the users of information systems and the benefits that these bring in their professional lives.

2.2 Instruments used

In order to collect the data we used as an instrument the inquiry, the processing of which was accomplished with the help of the *IBM SPSS 22 statistical program (Statistical Package for Social Sciences)* which is the newest version of program of statistical analysis of a data base so far [5].

3. The analysis and interpretation of statistical data

The direction of research concerns tourism agencies in Bucharest, focusing on the attitude and know-how of employees regarding the information systems as well as their perception on how these systems are used, the analysis being approached from both a qualitative and a quantitative point of view [8].

All the subjects involved agreed to participate and were assured of the confidentiality of the results.

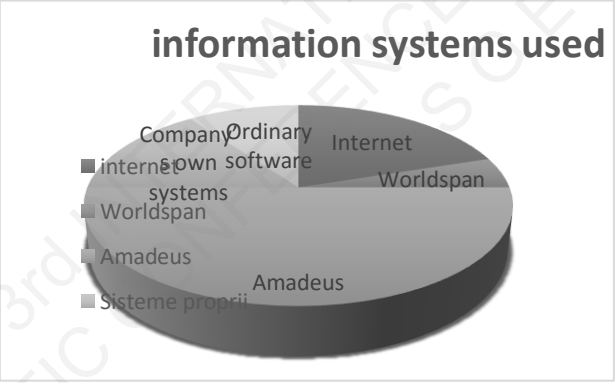
We did not face any problems in applying the inquiries, the subjects manifesting a real interest in the testing situation, so that all the results were validated. The statistical processing of the data from the five tourism agencies (which requested us to keep their identity confidential) is presented in the tables and charts below, which have been created using Microsoft Office 2016.

Hence, in what follows we can see the results of the statistical analysis.

Table no. 1: Which are the information systems that you are currently using?

	System used	Frequency	Percent	Valid Percent
Valid	Internet	4	20%	20%
	Worldspan	1	5%	5%
	Amadeus	10	50%	50%
	Company's own system	3	15%	15%
	Ordinary software (Word, Excel, databases)	2	10%	10%
	Total	20	100%	100%

Chart no.1 – Statistics regarding the type of information systems used



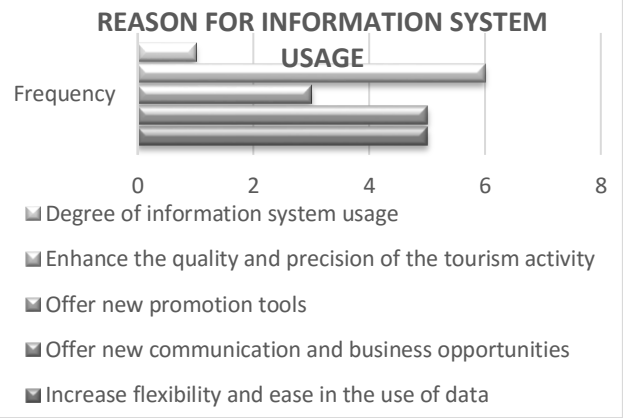
From chart and table 1, we notice that the most commonly used information system in tourism agencies in Bucharest is Amadeus, with a significant 50%, whereas the Internet, the company's own systems, ordinary software (Word, Excel) and Worldspan are used substantially less (as it appears clearly from the representations), as these make up only together the percentage held by Amadeus.

Table no. 2: What is the reason why you have chosen to use information systems?

		Frequency	Percent	Valid Percent
Valid	Increase flexibility and ease in the use of data	5	25%	25%
	Offer new communication and business opportunities	5	25%	25%
	Offer new promotion tools	3	15%	15%
	Enhance the quality and precision of the tourism activity	6	30%	30%
	Degree of information system usage	1	5%	5%

	Total	20	100%	100%

Chart no. 2 – Statistics regarding the reason for information system usage



The data analysis in table and chart 2 shows that the main reason for the use of information systems is to improve the quality and precision of the tourism activity, followed closely by the offering of new communication and business opportunities and the increase of flexibility and ease in data processing in the system. We should by no means ignore the fact that tourism agencies want to use new online promotion instruments for package tours.

Table no. 3: The importance granted to the cost level of the information system

		Frequency	Percent	Valid Percent
Valid	Unimportant	1	5%	5%
	Little important	2	10%	10%
	Indifference	1	5%	5%
	Important	10	50%	50%
	Very important	6	30%	30%
	Total	20	100%	100%

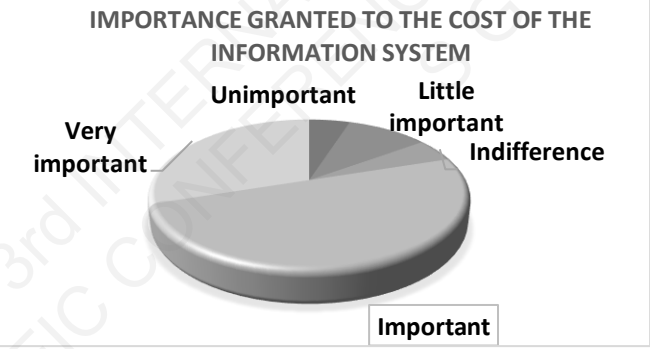


Chart no. 3 – Statistics regarding the importance granted to the cost of the information system

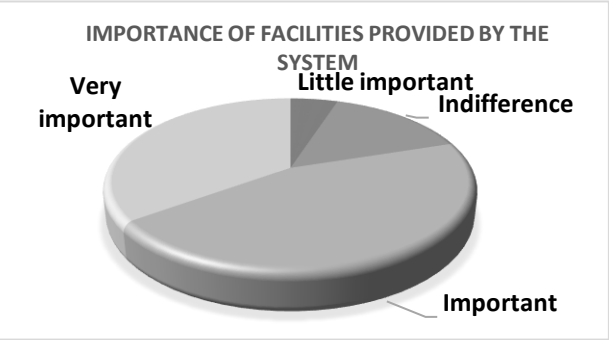
Looking at the importance of the cost of the information system, the opinions of the representatives of the tourism agencies were surprising. They declare that it is very important for them to own an effective information system that brings plus value but that, nevertheless, the price that they are willing to pay on an application is important, even very important, as it appears in chart no. 3.

Table no. 4: The importance granted to facilities provided by the system

		Frequency	Percent	Valid Percent
Valid	Little important	1	5%	5%
	Indifference	3	15%	15%
	Important	9	45%	45%
	Very important	7	35%	35%

	Total	20	100%	100%

Chart no. 4 – Statistics regarding the importance of facilities provided by the system



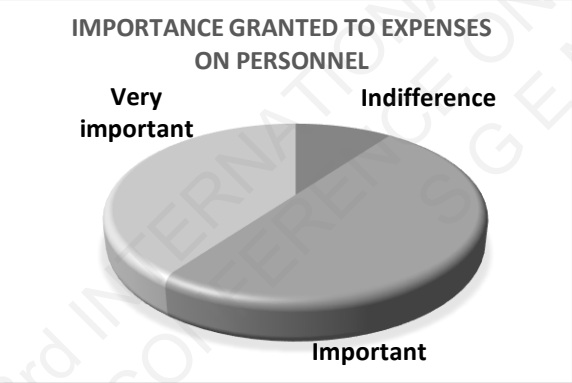
Concerning the importance given to the facilities offered by the information system, most representatives of the interviewed agencies have answered that they are important, 45%, and 35% admitted that they are very important for the smooth running of the activity.

15% of the respondents do not care about the facilities offered by the information system, and for 5% these are little important. Nobody, though, considers the fact that the system offers facilities unimportant.

Table no. 5: The importance granted to expenses on the necessary specialized personnel

		Frequency	Percent	Valid Percent
Valid	Indifference	2	10%	10%
	Important	10	50%	50%
	Very important	8	40%	40%
	Total	20	100%	100%

Chart no. 5 – Statistics regarding the importance of expenses on personnel



Expenses on specialized personnel are considered by the vast majority of the interviewees as very important (40%).

50% consider these important, and only 10% of the respondents show indifference in relation to them.

There is no interviewee who thinks that the expenses on specialized personnel are little important or unimportant.

These expenses are unavoidable taking into account the fact that the work involves using an information system, which also entails the existence of specialized individuals who will enable the due course of activity within the tourism agency [9].

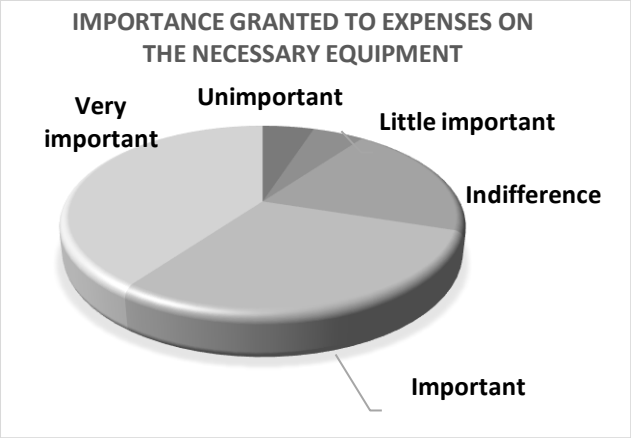
Table no. 6: The importance granted to expenses on the necessary equipment

		Frequency	Percent	Valid Percent
Valid	Unimportant	1	5%	5%
	Little important	1	5%	5%
	Indifference	4	20%	20%
	Important	6	30%	30%
	Very important	8	40%	40%

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY SGEM2016

	Total	20	100%	100%

Chart no. 6: The importance granted to expenses on the necessary equipment



Expenses on the necessary equipment are considered by the greatest number of interviewed people, namely 40%, as being very important.

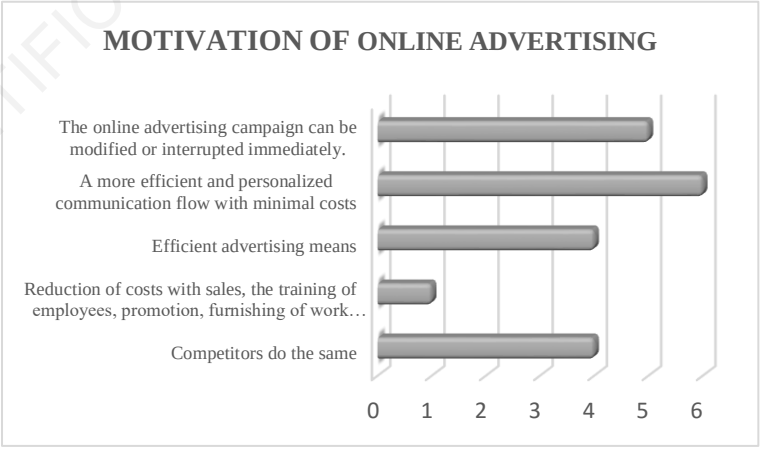
30% deem them important, and 20% of the respondents are indifferent to these expenses.

A very small number of the respondents think that these costs with the equipment are little important or unimportant, i.e. 5 %.

Table no. 7: What is the reason why the unit has chosen to advertise online?

		Frequency	Percent	Valid Percent
Valid	Competitors do the same	4	20%	20%
	Reduction of costs with sales, the training of employees, promotion, furnishing of work spaces	1	5%	5%
	Efficient advertising means	4	20%	20%
	A more efficient and personalized communication flow with minimal costs	6	30%	30%
	The online advertising campaign can be modified or interrupted immediately.	5	25%	25%
	Total	20	100%	100%

Chart no. 7 – Statistics regarding online advertising



Tourism agencies use information systems according to the amount of services that they offer.

The reasons why the unit decides to advertise online are diverse, according to the situation.

Hence, regarding the reasons for opting for online advertising, most

respondents have declared that this enables the communication of personalized messages to a limited target group, with smaller costs (30%) and that this advertising campaign on the Internet can be modified or interrupted immediately (25%).

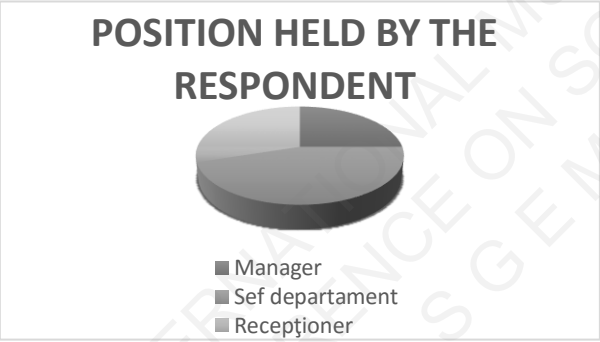
20% of the subjects have declared that they have resorted to this type of publicity because all the competitors proceed in a similar manner. 20% believe it is an efficient means to promote products and services.

Only 5 % opt for online advertising because it reduces costs with sales, the training of personnel, promotion and the furnishing of work spaces.

Table no. 8: The structure of the sample according to the position held by the respondent in the respective unit

		Frequency	Percent	Valid Percent
Valid	Manager	5	25%	25%
	Department manager	9	45%	45%
	Receptionist	1	5%	5%
	Travel agent	5	25%	25%
	Total	20	100%	100%

Chart no. 8 – Statistics regarding the position of the respondent



If we look at the position held by the interviewee in the tourism agency, we notice the predominance of department managers, who are in a proportion of 45%, followed by managers, 25%, and the same percent is allotted to travel agents.

The smallest percent belongs to receptionists, who were quite few, namely 5%.

CONCLUSION

The aim of this paper has been to identify the opinions, attitudes, mentalities and behaviors of tourism agencies in Bucharest regarding the use of information systems. The analysis has focused rather on quality than quantity, taking into consideration five important tourism agencies in Bucharest which have expressed their desire to remain anonymous.

As a result of the analysis, we have encountered the fact that most agencies in Bucharest resort to effective information systems used globally [10] (for instance, Amadeus). They deem that the hardware equipment that they have is important as well, just as their presence in the virtual environment, which is becoming increasingly important for them because it boosts visibility on the market as well as helps economize on the advertising costs. A heartening aspect is the raising awareness of employees in relation to the introduction of novelty through the information systems and their ability to embrace change and adapt to it quickly.

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

Also, we can infer the fact that Romanian tourism is changing all the time, starting with the systems used by companies, with technology and the human factor which has come to be an important instrument for the agency and in which investments are worth making.

REFERENCES

[1] Wu C. H., Ho G. T. S., Lam C., Ip W. H., Choy K. L., *An Online Niche-Market Tour Identification System for the Travel and Tourism Industry*, Internet Research, Vol. 26 ISSN: 1, pp 167 – 185, 2016.

[2] http://link.springer.com/book/10.1007/978-3-658-13998-8

[3]https://books.google.ro/books?id=Hye2BAAAQBAJ&pg=PA210&dq=information+system+in+tourism&hl=ro&sa=X&redir_esc=y#v=onepage&q=information%20system%20in%20tourism&f=false

[4] Prebežac D., Schott C., Sheldon P., *The Tourism Education Futures Initiative: Activating Change in Tourism Education*, 2016.

[5] http://www.mecs-press.org/ijitcs/ijitcs-v8-n6/IJITCS-V8-N6-7.pdf

[6] Novac A., *Inquiry on Public Opinion* (*Sondarea opiniei publice*), Bucharest, Studenţească Publishing House, 2006.

[7] http://www-01.ibm.com/support/docview.wss?uid=swg21646821

[8] Sion B., Mărginean A., Mihălcescu C., *The Dynamic of European and Romanian Ecotourisms – A Quantitative and Qualitative Analysis*, Romanian Economic and Business Review, vol. 7, no. 2, ISSN 1842-2497, 2012.

[9] http://uir.unisa.ac.za/handle/10500/20273

[10] http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1443&context=sim

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE ROLE OF TERRITORIAL ORGANIZATION OF CITIES IN THE TOURISTIC ATTRACTION OF THE REGION ON THE EXAMPLE OF THE REPUBLIC OF TATARSTAN

Prof. Dr. Vladimir A. Rubtzov
Assoc. Prof. Dr. Niyaz K. Gabdrakhmanov

Kazan Federal University, **Russia**

ABSTRACT

The concepts of an image, state, region and cities turned out to be an effective instrument in the tourist industry since it handles these concepts. Tourism has an advantageous multiplier effect and serves as an accelerator of the social-economic development. As the social development is taking place within the territory and the change of the functional status of territories and cities' image is an all-around and continuous process, the evaluation of cities' role in the touristic attraction of the region is an urgent task. This article studies main functional components of a city from the viewpoint of a touristic attraction (presence of recreation resources, ease of travel to the touristic object, presence of foodservice outlets and accommodation means) and their significance in the formation of the touristic brand. Basing on the numerical score the authors calculated an integral index which shows the level of touristic-recreation sphere development of the cities in the Republic of Tatarstan. As the result of the conducted investigation the authors pointed out some problem issues which are connected with the insufficient or limited resource base, unsuccessful system of the tourist services of tourists and visitors. The capital's break-off of the other cities of the Republic according to the main indices forms the feeling of capital hegemony. An even development of the touristic infrastructure in all the cities of the Republic is necessary to create a single regional tourist-recreation field.

Keywords: tourism, the Republic of Tatarstan, urbanization, touristic infrastructure.

INTRODUCTION.

Touristic-recreation sphere of the Republic of Tatarstan was formed on the basis of the two main issues: inhomogeneity, spread across the territory of the Republic of Tatarstan - natural-resource recreation and cultural-historical potentials and local inhomogeneity - social-historic-cultural centres of recreation activity (CRA). The latter are the "central places" well-known in the theory of network planning, where the recreation activity is materialized [1, 2, 3]. Recreation potential is always complex, versatile and multi-aspect. Natural factors, social-economic and historic-ethnographic factors as well as the factors of set of mind formation in the region, identification of nodal bonds of recreation activity intensity and others take place in the formation of recreation potential. [4, 5]. In this context one should speak of the geodemographic infrastructure formation in the region [6]. In this case CRA serve as functional centres that have some mutual relations [7].

Today the city and its processes are quite complicated, contradictive and cannot be studied and explained by only one scientific approach. Being a social structure on the one hand one should use a system approach, and being an objective reality on the other hand one should use an extensional approach. As the result of a joint interpretation one can get an objective image of reality [8].

In this case a city is an object of a possible touristic-recreation activity. Its study can be presented as a "frame-cloth" model of a city environment by A. E. Gutnov [9] and a "polar-landscape" model by B. B. Rodoman [10].

The structure of a recreation space of a city environment is overlaped and formed out of the historic nuclear, one or several radii and several local nuclears which correspond either to the administrative centres of cities or to the touristic objects. Thus, being the main element of the recreation space structure, the historic centre of a city becomes a focus having local centres of recreation infrastructure in a circumferential direction. They can differ in size, set of objects and importance for the city's recreation environment. They stand apart from the others in their significance and can serve as additional sub-centres of the main ones or can be locally significant and stay within these borders [11].

Now the urbanization percent of the Republic of Tatarstan is 73, consequently, most part of the people is concentrated in cities which become touristic-recreation centres. Most trips are made between cities. This turns the cities into the touristic recreation destinations of different range, fame, significance in the space.

The total of the modern inhabited localities of the Republic of Tatarstan is a frame for the reclamation of the territory, a single regional urbanized region which includes cities, settlements and villages of different size and importance [12, 13].

METHODS.

In order to evaluate the development possibilities of recreation-touristic management in the cities of the Republic of Tatarstan we used the method of points ranging according to four indicators: 1) presence of a touristic object, 2) ease of travel to the inhabitant locality, 3) presence and class of collective means of accommodation and 4) presence and type of foodservice outlets.

Value and accessibility of a touristic centre-city depends on its vehicle access. The analysis of the existing traffic network which takes into account motorways, railways, ways to the river routes, proximity to the airport, provides the access to the biggest inhabitant areas of the republic. The analysis of the current traffic network was carried out according to the map of the existing roads. It took into account motorways, railways, ways to the river routes, and proximity to the airport, which provide the access to the biggest inhabitant areas of the republic. Table 1 represents its numerical score with the following points:

- for every beam of road - 1 point;
- for every beam of railway - 1 point;
- for every outlet to the waterways - 3 points;
- for the airport (not far than an hour away) - 3 points.

Table 1. Ranging of the vehicle access of the inhabitant areas of the Republic of Tatarstan

serial number	motorways	railways	waterways	airports	point
Kazan	5	4	3	3	15
Naberezhnye Chelny	6	3	3	3	15

Yelabuga	5	-	3	3	11
Zainsk	5	2	-	3	10
Zelenodolsk	3	4	3	-	10
Nizhnekamsk	3	1	3	3	10
Almetyevsk	6	3	-	-	9
Bugulma	6	2	-	-	8
Buinsk	5	2	-	-	7
Mendeleevsk	2	2	3	-	7
Tetyushy	4	-	3	-	7
Chistopol	4	-	3	-	7
Mamadysh	3	-	3	-	6
Nurlat	4	2	-	-	6
Agryz	2	3	-	-	5
Arsk	3	2	-	-	5
Laishevo	2	-	3	-	5
Menzelinsk	2	-	3	-	5
Leninogorsk	2	2	-	-	4
Aznakaevo	3	-	-	-	3
Bavly	3	-	-	-	3

As we can see from the table the biggest cities such as Kazan, Nizhnekamsk, Naberezhnye Chelny, Zelenodolsk, Elabuga, and Zainsk have good access routes which is important for the organisation of touristic routes that demand minimum travel time. The second group of accessibility includes cities and settlements which are prospective for the touristic activity development: Almetyevsk, Bugulma, Tetyushy, Chistopol.

An important and necessary indicator of the touristic infrastructure is the existence of food services. Table 2 represents their distribution in the quantitative relations.

Table 2. Distribution of food services in the cities of the republic

	restaurants	cafés	total	points
Kazan	118	55	173	5
Naberezhnye Chelny	26	25	51	3
Nizhnekamsk	14	15	29	2
Almetyevsk	10	6	16	2
Bugulma	6	6	12	2
Zelenodolsk	4	6	10	2
Yelabuga	2	7	9	1
Chistopol	2	7	9	1
Leninogorsk	2	6	8	1
Laishevo		4	4	1
Mamadysh		4	4	1
Buinsk	2	2	4	1
Mendeleevsk	2	2	4	1
Bulgary		3	3	1
Menzelinsk		3	3	1
Arsk	2	1	3	1
Tetyushy		2	2	1

Tourism and recreation development depends on the level of organisation of hotel industry. The best variant is the use of landmarks and buildings. This does not violate historic environment and provides the opportunity for implementation of different innovations aimed at comfortable accommodating of tourists. In the small cities a lot of

attention should be paid to the creation of small hotels, such as ones in Elabuga and Bilyarsk.

Table 3. Presence of means of accommodation in the cities of the Republic of Tatarstan

	hotels						motels	hostels	other hotel-type organisations	total	points
	5 stars	4 stars	3 stars	2 stars	1 star	no category					
Kazan	5	4	15	4		26	3	2	1	60	5
Nizhnekamsk			6			4		4		14	2
Almetyevsk						5	3			8	1
Naberezhnye Chelny						4		2		6	1
Zainsk						4		2		6	1
Buinsk						2	3			5	1
Bugulma						4				4	1
Leninogorsk						3				3	1
Chistopol						2				2	1
Nurlat						2				2	1
Mamadysh						2				2	1
Zelenodolsk						1			1	2	1
Yelabuga						2				2	1
Mendeleevsk						1				1	1
Bavly						1				1	1
Arsk						1				1	1
Aznakaevo						1				1	1
Agryz						1				1	1
Tetyushy										0	0
Menzelinsk										0	0
Laishevo										0	0

The use of the numeric score method for the analysis and definition of the level of touristic-recreation sphere development of the cities in the Republic of Tatarstan allowed us to draw the following conclusion.

Table 4. Final integral indices of the cities of the republic of Tatarstan

serial number	*according to the touristic objects*	*vehicle access*	*means of accommodation*	*foodservice*	*total*
KAZAN	174	15	60	173	422
NABEREZHNYE CHELNY	93	15	6	51	165
ZELENODOLSK	113.5	10	2	10	135.5
NIZHNEKAMSK	79	10	14	29	132
ARSK	89	5	1	3	98
YELABUGA	73	11	2	9	95
LAISHEVO	85.5	5	-	4	94.5
ALMETYEVSK	61	9	8	16	94
MAMADYSH	52.5	6	2	4	64.5
BUGULMA	40	8	4	12	64

CHISTOPOL	45	7	2	9	63
TETYUSHY	47	7	-	2	56
ZAINSK	35.5	10	6	-	51.5
AGRYZ	45	5	1	-	51
NURLAT	42.5	6	2	-	50.5
LENINOGORSK	35.5	4	3	8	50.5
MENDELEEVSK	34	7	1	4	46
MENZELINSK	34.5	5	-	3	42.5
BUINSK	26.5	7	5	4	42.5
BAVLY	38	3	1	-	42
AZNAKAEVO	29.5	3	1	-	33.5

BODY.

As a rule, each city contains a lot of geographic images which are different in their genesis, content and structure. They are formed both by the social and professional groups and by the separate personalities in the process of their purposeful activity. Geographic image of a city is the system of the ordered interconnected concepts of space and space structures of some city, as well as a system of signs and symbols which most vividly represents the city.

Geographic images of cities can be simple and complex, mono-typic and poly-typic. Simple mono-typic images are characteristic for the young cities which have no long history of their development. Within the republic these are the young industrial cities in the South-East, such as Aznakaevo, Bavly, and Zainsk. The formation of a simple image of these cities is being carried out on the background of the dynamic cultural and civilization processes. Bigger formations, such as Nizhnekamsk, Almetievsk, and Leninogorsk have a bit different scheme of the image development. Here the positioning of the city within the bigger image system (in our case industrial) takes place.

There are poly-typical images in small and medium cities such as Bugulma, Elabuga, Chistopol, Mamadysh, Tetyushy, Bolgar, and Laishevo. These cities have quite stable, static images which slightly change in the course of a long time. One of the reasons for such a situation is a cultural stability within the framework of the broader image-geographic systems.

Non-developed information-advertising services are the factors which prevent the tourism development if small historic cities. Often small historic cities have no detailed guides or the existing information is very insufficient. The solving of this problem is the close collaboration with regional organisations. The local historians lay very important role in preservation and opening of new objects. They restore the historical recollection of a place, its image, form the concept of its uniqueness, determine its value and uniqueness from the position of significance for the place and do not compare it with the world values. Often local historians prepare historical objects for touristic use by developing the excursion programmes and routes, making maps etc.

Low level or absence of a specialised management in the cultural authorities of small cities, museums, open-air museums do not contribute to the increase of touristic flow [14]. One can use museum specimen in the city's interior (railway stations, hotels, theatres, restaurants, educational establishments). This will increase informational content of people and develop a careful approach to the city arrangement.

REPORT.

The most important problem of preservation of cultural and natural heritage complex of historical settlements is an uncertainty of the concept of "historical city". Today according to the law of the Russian Federation this status gives no specific rights or obligations for the historical settlements comparing to the other administrative-territorial entities. Actually, there are no specific economic and social conditions for regeneration or business management when declaring the city a historical one. One of the factors for achieving success is the involvement of the whole diversity of the heritage into the sphere of tourism, orientation not only to the foreign tourists but also to the local ones: the preservation of the access to the heritage for the general public, special attention to the children's and youth travel, development of the regional movement. Close connection of the tourism with the cultural-cognitive motives has always been a characteristic feature of Russia. An important issue on the way of cultural tourism development is the intensification of the existing touristic routes and creation of the new ones:

- historical roads on the territory of Tatarstan, which once connected this place with other countries and regions of Russia (cities of Bolgar, Elabuga, Mamadysh);

- history of local literature is also of special attention. Visiting places of events described in the literature is one of the most attractive types of tourism and excursions. Attraction of these places contributes to the building of monuments and creating of museums of literature heroes (cities of Elabuga and Laishevo).

-archaeological objects have great potential for development of the cognitive tourism which is now poorly developed. This can be explained by the passive form of presentation when one suggests only watching. One of the variants for tourists' attraction is the participation in archaeological excavations (cities of Elabuga, Bolgar, Laishevo).

- nostalgic tourism - visiting of forefathers' places (manors of the nobility, cities and villages, cemeteries, burial sites) by the representatives of different diaspores, former citizens of Russia and others (cities of Bolgar, Elabuga, Mamadysh).

- ethnographic tourism - acquaintance with the life of representatives of different ethnographic and religious groups (cities of Elabuga, Laishevo, Bolgar, Mamdysh);

Cultural and historic heritage is a specific and very important economic resource of the region, it can and it must become the basis for the branch of specialization, one of the prospective directions for the implementation of social policy and development of the local economy, an important spiritual factor. The most demonstrative and positive example is the experience of Elabuga region and the city of Elabuga.

Dynamic changing and complicating geographic images can be observed in the cities of Kazan and Naberezhnye Chelny.

Kazan is ahead of any other city of the region in indices of touristic industry development. Under the conditions of the modern computerisation of the society and improvement of communication the positioning on the modern stage gives to the city the features of the western culture while preserving its local eastern colouring. Vehicle accessibility, more or less developed hotel industry, attractive cultural and archaeological image of the city, positive mental ethnocultural and religious culture create a favourable image of the touristic centre of the region.

Naberezhnye Chelny. Here we can observe the forming touristic agglomeration. The city is surrounded by Elabuga and Nizhnekamsk. In this case the cities complement each other's functions. The function of the touristic attraction is performed by Elabuga

and infrastructure touristic functions can be performed by the industrial cities of Nizhnekamsk and Naberezhnye Chelny.

CONCLUSION.

The concepts of an image, state, region and cities turned out to be an effective instrument in the tourist industry since it handles these concepts. Tourism has an advantageous multiplier effect and serves as an accelerator of the social-economic development [15].

The development of the society takes place within the territory. The change of the functional status of the territory and cities' image is an all-around and continuous process. The problem of tourism development in the cities of the Republic of Tatarstan is connected with the insufficient or limited resource base, unsuccessful system of the tourist services of tourists and visitors. In fact, Kazan's break-off of other cities according to the most main indices (quantity and quality of collective accommodation means, trade and traffic service, food services and others) is not a deceptive impression of the capital hegemony. An even development of the touristic infrastructure in all the cities of the Republic despite their quality requirements is necessary to create a single regional tourist-recreation field.

In order to do it it is necessary to develop local programmes of tourism development as an integral part of the complex programmes of social-economic development of not only municipal entities, but also their possible including into republic or federal programmes, which can lead to the formation ofthe touristic system.

LITERATURE:

[1.] Shabalina S. A., 2009. Zoning of the territory of the Republic of Tatarstan for national and international tourism. Scientific notes of Kazan University. Earth sciences series, pp: 263-271

[2.] Gabdrakhmanov N. and D. Egorov, 2013. Report «The role of geo-demographic infrastructure facilities in the regional development of human capital». WARSAW REGIONAL FORUM 2013 Territorial capital – concepts, indicators and policy by the Institute of Geography and Spatial Organization Polish Academy of Sciences, together with the Ministry of Regional Development of the Republic of Poland and Polish Geographical Society, Warsaw, pp: 57.

[3.] Gabdrakhmanov N.K. and V.A. Rubtzov, 2014. Geodemographic Polarization Processes: Municipal Level (The Case of the Kukmorsky Municipal District of the Republic of Tatarstan). World Applied Sciences Journal, 30 (10): 1317-1320

[4.] Gabdrakhmanov N. K. and V. A. Rubtsov, 2012. Demographic potential of the Republic of Tatarstan: analysis, assessment, territorial differences. Udmurt university messenger, 6-1: 145-155.

[5.] Gabdrakhmanov N.K. and V.A. Rubtsov, 2014. Tourist and Recreational Positioning of Tatarstan Republic: Cluster Analysis. World Applied Sciences Journal 30 (Management, Economics, Technology & Tourism): 202-205

[6.] Gabdrakhmanov N. K., 2012. Geodemographic infrastructure. International scientific research journal. 5-3 (5): 127-128.

[7.] Lyosh A., 2007. Space organisation of business. Translation from German V. N. Strelitskiy. Moscow: Nauka, pp: 663

[8.] Linch K., 1982. City image. Moscow: Stroyizdat, pp: 328.

[9.] Gutnov A. E., 1984. Urban planning development. Moscow: Stroyizdat, pp: 256.
[10.] Rodoman B. B., 1999. Territorial areas and networks. Theoretic geography sketches. Smolensk: Oikumena, pp: 256.
[11.] Gabdrakhmanov N.K. and M.V. Rozhko, 2014. Positioning of Volga Federal District Regions by Demographic Situation Index. World Applied Sciences Journal, 30 (6): 792-795
[12.] Gabdrakhmanov N. K. and V. A. Rubtsov, 2011. Urgent character of the geoportals application in making management decisions (medical-demogeographic geoinformational systems). Ecological consulting, 2: 27.
[13.] Litvinov A. A., V. A. Rubtsov, N. K. Gabdrakhmanov, E. Y. Isaeva, G. R. Akhunzyanova and G. N. Bulatova, 2013. Zoning of the territory of the Republic of Tatarstan and Udmurt Republic according to the level of demographic potential. Udmurt university messenger, 6-3: 123-130.
[14.] Mingaleva Z. and O. Bunakov. Competitiveness assessment of Russian territories in terms of inbound tourism . Life Science Journal 11 (6 SPEC. ISSUE): 318-321
[15.] Mitin I. I., 2003. The experience of creation of complex geographic characteristics of the cities and regions of Russia and implementation of dominant thinking. Cities and city agglomerations in the regional development. Moscow: IG RAN, pp: 112-117.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

THE SIMILARITIES AND DIFFERENCES IN TAKING RESPONSIBILITIES OF LARGE COMPANIES AND SME'S

Assist. Prof. Edit Nagy
Assoc. Prof. dr. Erzsébet Szász
Partium Christian University, Oradea, **Romania**

ABSTRACT

The study presents the results of a qualitative research, this research is to complement and support an earlier study was established. Previously studied by a research corporate social responsibility in Bihor (Romania) County companies a questionnaire consisting of three parts in the first part, I researched the company's commitment to social programs towards the, in the second part I was curious towards the attitudes of managers about CSR, in the third part I focused on the corporate demographic issues and relationships and through this I tried to link the previous two parts. Through the process of the research, I found that the companies surveyed are very positive about a five-point Likert scale to test attitudes of the vast majority achieved level 4 and 5. In a positive attitude as proof / disaproove made from this study.

In-depth interviews with leaders made in small, medium and large companies. In earlier empirical studies can not be found these three stage comparison. The results show that the lack of cultural embeddedness determines a lack of commitment to various social programs in companies. In small and medium enterprises, only the owner / manager of personal values, belief determines the amount of money allocated. The big companies are acting in accordance with the foreign parent company with the requirements of domestic companies, but only depending on the degree of social expectations. In the case of SME`s used in most cases, the programs oriented towards the internal stakeholder (workers) were less likely to outside, society, culture, environment. In the large enterprises in both directions of social participation as in the program can be found, but fewer cases of strategic, proactive, profit proportionate manner.

Keywords: large companies, SME`s, CSR, stakeholder

The difference between SMEs and large companie's sense of responsibility.

Large and small companies differ in their nature from their beginnings [1],that is why they have different contents and nature and different CSR activities as well [2].In order to be able to understand how SME's liability and corporate responsabilty differs from the large company plans in this domain, it is important to know the following generalizations: unlike at large companies, SME's lack the CSR written guidelines, personal motivation is more important than public relations or the marketing approach; the owner itself focuses on the implementation of CSR activities or deals, because in SME's the owner and manager are the same person, while at the large companies the two posts are separated, in fact, a lot of researches show that at a large corporation if a manager gets too much power, this can have a negative impact upon the copmany's CSR activities [3], if the company is rooted within the local community this fact will greatly influence the company's social behavior making it responsible and honest. The other big factor is that these companies are more comitted towards their employees and their families, this commitment is influenced by the side of industry in which they are active [4]. In addition, in the case of SME's, the relationship is closer with local

authorities, management problems are unique, which do not appear in case of the large companies, so they are influenced by other CSR practices [5,6] SME's also have access to information at a much more limited way compared with larger companies[7]. In most cases, they have no adequate capacity to collect data and analyze them in the theme of sustainable development [8].

One of the difficulties with which SMEs face is that the tools, guidelines and standards for most are designed for the large companies in order to fill their needs. For SME's these standards and guidlines are missing despite their willingness to use them, and the fact that they would adapt them and implement them in their CSR policiesin order to achieve greater developement [9,10].

Other academics believe that SME's and large enterprises also differ that large companies are more likely to opt for CSR in order to promote themselves with or as part of PR practice and the development of SMEs, which are more likely to be free of these interests [11].

In order to produce a qualitative research of this issue, and in order to be able to test the results the research has been conducted among SMEs in Bihor county using primary research qualitative tools. This qualitative research will help to understand the thinking patterns in this field, because this paper is looking for answers. This method was chosen, because it was the best to support the respondent's thinking method, their opinion forming process, and to support the knowledge of their attitudes.

I created a survey, in order to asses the operational responsibility of SME's in the Romanian county of Bihor, and to know and describe these attitudes. In order to achieve the best answers a certain criteria was followed. I chose that the entrepreneurs, managers must be with SMEs in operation (with less than 250 employees, less than 50 million euros in turnover, and less than 43 million total assets of EUR) in Bihor county.

Since we can not estimate the number of the forced companies and of those who are not operating we do not know the total number of SMEs, I sent the questionnaire for more than 500 companies, because of the low response level, a list of 50 companies were chosen being the final list of my research.

In the questionnaire, respondents had to indicate their answers using a 5 point Likert scale. The Likert scale has 5 response categories, where in addition to the allegations of the filling the "absolutely disagree '(1), and between" strongly agree "(5) have to mark your answers.

In addition, a series of in-depth interviews were made on the occasion of a guided free talk, which sought to uncover the attitudes of the leaders. With the approval of the participants the conversations were recorded, these were later evaluated by relistening.

A section was dedicated to the characteristics of the respondents. The following demographic and features were collected. The majority of respondents (62%) were men, which is not a surprising fact, because more men occuppy managerial positions than women. The residence allocation of the respondents clearly shifted towards the city in a 88%, which was not a surprising fact, because big companies tend to have their headquarters in Oradea, and in smaller cities.

Another question analyzed the effects of international study or international work experience upon a manager or executive and the number of respondents were evenly separated who have not resided in the country for this purpose, and besides those who did. (50% -50%).

Regarding the date of birth of the respondents, 56% were born before 1980, and 44% after. This fact is interesting, because the bigger percentage was born before the 1980

and this generation has grown up under the regime of communism, and was educated so, while the "young" generation has already completed his primary school after the regime change therefore they acquired their knowledge in the new system. After the recalculation of the allocation we can say that 64% of those Entrepreneurs who were born before 1980 not studied or worked abroad only the remaining 36% of those born after 1980, will change the ratio, completely reversed, as 68% of studied and / or worked abroad and only 32% did not.

Reflecting to Ede & all [12] research the young generation more responsible than older, might be multiple true in Romania, precisely because it increased the number of those who have had the opportunity to gain new experience abroad and thus they became more open to get to know the new guidelines.

The questionnaire contained questions regarding the companies data. The following data was summarized: most of the questionnaire's respondents of the leading companies, 75.5% (37) were, home-owned and 12 companies belong to an international group of companies.

There is an equality also at the large majority of LTD's among the respondents. This could be interesting because, although the sample is low, the majority of LTD's also representative because they domestic and EU level because these companies are in majority, their share exceeds 90%. Among the companies surveyed, there 35 LTD s, 6 corporations and 8 are private enterprises. More than a half of the questioned SMEs sell their products and services on domestic markets, but 40% of them has some kind of export activities, from this fact we can imply that they have good quality goods and services and competitive products and with them they can hold their ground on foreign grounds.

In the first part of the questionnaire we find question on the issues which were introduced by themselves in their firms, and how and in what the CSR practice is made by them. The 70% of respondents answered that they fully take into account the stakeholders (such as local residents, consumers, costumers, authorities and suppliers) in their corporate decision making.

The respondents all agreed upon the fact that communication is very important, because everybody agreed with the stakeholders in order to inform them. The following variety is discoverable: 5 points to 40% 4 points to 34%, 3 points to 26%.

Respondents were also asked how their company strives to maintain a balance between work and family life (flexible hours, part-time work, the possibility of working from home). It works with 56% of the workers.

It is very important for a company to provide equal opportunity and chances in the fields of application and promotion as well. In the case of the surveyed companies this is more or less realized in a 64%. In Romania the proportion of corruption is still very high, despite the improving tendency according to Iamandi [13]; pickiness and subjective judgment in the case of promotions in Romanian workplaces are everyday subjects. Therefore it is quite a positive surprise is that such a high proportion of respondents chose the 4^{th} or 5^{th} option. This fact underlines how executives perception change.

78% of the surveyed companies told that they pay attention to control pollution, to reduce the adverse natural events (such as waste volume reduction of selective waste collection, recycling, introduction of less environmentally damaging processes and application of these). It is likely, however, that this very rarely exceeds the relevant

sectoral rules, which are required under the law today in relation with the environment protection.

For the following question, 58% replied that it is fully appliable on them, more true to them that they pay attention to the physical and psychological safety of their employees and on the mandatory procedures too, such as accident prevention, health protection, sports facilities, team-building trainings and recreational opportunities.

The question which had asked about the truth value of the statement that the company's internal policies seek to a fair and honest view on this over the contracted partners and consumers (consumer protection regulations, fair procurement policies, fair and accurate information services to customers in a transparent and warranty conditions) had the most positive echo. The respondents 96% are located on the positive side. This is definitely commendable assumption that Lepoutre & Heene [14] include in their study of this attitude was mentioned as a positive and distinctive feature of a responsible entrepreneur.

The employees, however, once again with a majority of not less than 82% indicated that they would ensure fully the right conditions as dining facilities, comfortable furniture and up-to-date implements.

More than half (52%) of the surveyed SMEs, think that they meet, or rather fulfill the set career plans within the company (eg. Studies, the support and organization of further trainings; trainings abroad supported financially). The vast majority of companies responded neutrally to the question of whether they encourage the employees to participate in local community activities (through corporate approval and support). The neutral 3rd answers in this case means that they virtually are not supporting for voluntary activities of their employees, we can also deduce that this led to 66% on the negative side. On the other hand, a not insignificant detail is the fact that in our country there is no culture of volunteering itself, so employees want less and less to volunteer, as well as the social expectation is low from these organizations.

74% of respondents agreed that their company uses motivational tools for long-term success and the achievement of employee loyalty (we mean this praise, bonuses, fringe with other additional benefits, such as meals, travel or sports facilities).

The last question in the first part of the questionnaire, we asked how the company treats sparingly the company's raw materials, equipment used, such as energy, water, paper, office supplies. 78% gave a positive answer to this question, but despite the fact that it is really a CSR tool, again mostly a lack of resources, scarcity can be especially positive behavior in the background. Nevertheless, perhaps in the case of SMEs that play a role in a deeper conviction, and to the commitment to society and the environment.

The second part of the questionnaire disregards the own company, instead, express the opinion of the company's management to ask him about how they see the responsible entrepreneurs. While we previously concluded that the lack of specific measures is due to lack of resources, the company's executives are not so sure. The question was the following, whether the companies have enough money and talent to launch social programs. The 44% of respondents could not decide, whether the remaining half-and-half, 28% -28% were divided between yes and no.

The entrepreneurs agreed much better that the social programs if they were, would indicate in right colors the company in various media, to improve their business image. The agree and mostly agree answers were of a 62%, only 10% said the opposite.

The next question revealed that companies do not really whether they depend on or not on the society, or to depend on whether so much that they want to change it. It can be

deduced that the companies are not aware of how important their individual stakeholder groups are. In contrast, they do not feel legitimate the pressures coming from the society. When asked to agree to the fact that society can only expect the support of the social problems that, if it is clearly equal to the company's core interest, which is the profitability of the respondents, 38% tended to agree and 30% that they did not understood, while the remaining 32% remained neutral during the survey.

The majority of respondents, 70%, agreed that the company is responsible for reducing the environmental impact by production / service processes. However, they have not been able to say that corporate leaders lack the proper insight, ability and patience to solve these social problems. 38% of the respondents did not take a position in this issue, while a similar number, 32% and 30% responded positively or negatively.

The survey suggests (60%) that it is not a disadvantage to fill executives if the company spends money to treat social problems and support local communities, it does not feel that this will only increase the costs or hinder business success.

If society expects the company to assist in solving social problems, the governments should provide tax incentives and / or active subsidies for those comapnies who are active in these areas. At least 76% of the respondents expressed through the questionnaire, that they would not agree with this question. They can take hardly the pressure from the government (small and medium entrepreneurs), because 52% said they agree or partly agree with the statement that governments should enforce laws, not expecting it to go to the companies behind them and solve the problems of the society.

The question of whether companies should resolve the environmental and social problems caused by them also divided the respondents to, 26% thought that part enough, when the company pays attention only to reduce the damage caused by himself, while only 4% replied that they fully agree with the statement, 34% were not sure, 36% believed that it might very well go beyond the duty of the companies tasks to follow the "not harm" approach.

It seemed clear to the leaders of companies that workers prefer to work at a company that takes account of social, environmental and ethical standards. 22% thought that part of it and 62% said that this statement is absolutely true. A responsible company regularly pays its employees and assures good working conditions for them. This position is followed by most of the entrepreneurs, who were interviewed. A total of 96% of respondents tend to agree or strongly agree to these responses, while the remaining 4% were neutral, which means everybody agrees with this question. Many companies use social responsibility as a marketing tool to communicate well – because every surveyed company did agree. 76% tend to agree with this statement (40% completely and 36% partially) had a total of 4% who have chosen to disagree, but no respondents was found who would not agree with this.

When asked if to solve social problems are excessively burdensome the smaller companies, that is for them almost impossible to such action programs initiated by SMEs, despite the fact that this problem can own their skin may experience in economic activity, once again the respondents gave mixed responses. As we have highlighted the researchers, SMEs bump into conflict with some financial obstacles, thereby totally or partially in 50% of the respondents agree, while only 6% claimed in whole or in part, to the contrary.

According to the respondents, 52% of the company's corporate social responsibility - entirely (18%) or partially (34%) - will be justified if consumers will react to these

companies purchase programs. It is noteworthy, however, it was 20% on the opposite side, according to the importance of CSR, even without the consumer's response.
Also they were not consistent in the responses to the question that if the competitors will be conducted and / or supported, by reason of preserving the competitive advantage if they too are essential social programs. 38% considered that, it was not, or not entirely influenced by its competitors if they try to appear socially responsible, or responsible behave well, they do not see that this is in any way affect the competitiveness. In contrast, 36% saw it that yes, in order to remain competitive, it must also play its part in the solution of social problems. It may also depend on whether the companies which operate in the industry, the produced goods and services destined for the internal or external market, and how they see themselves and their activities in society, for other stakeholders.
The second part of the research is deals with the interviews. Totally I interviewed 7 companies. Among the companies surveyed, the oldest was established in 1950, and the youngest in 2014; dealing in three fields: three manufacturing company, one commercial ones and one agricultural company and two service provider were involved in the research.
When we asked the leaders of the CSR about activities and liability categories we tried to distribute the answers to external and internal stakeholders. When asked to whom has to take part of the responsibility-taking, in more seriously involved. From the seven companies, it was one who is more outward towards CSR activities, there was one who was is in and out that can hold up strong, and to the others companies, employees are the most important so as the internal stakeholders.
In another conclusion, we could see that responsibility is carried outward (as opposed to society, to look at events, sponsorship, etc.), so to see in these companies, but in connection with internal stakeholders. So we can speak about a strategicly built responsability. I quote a few sentences: "The company would not be here without the workers. With their help we have the opportunity to be present. It is important to make them feel important as a team. "; "In a small community flexibility is very important, if anyone has a problem. Therefore, the workers like their workplaces. The emphaty is important."
Respondents were also asked what they think about how it affects the competitiveness of CSR activities. One respondent did not see it that CSR costs that may arise would distract the money and would reduce their profits, even more highlighted that due to the success that the workers own interest, see the company's success, competitors like fair treatment, often in this kind of situations close relationships are formed. One respondent commented: "The values are those that contribute to competitiveness."
The following question however was more dividing, when we asked whether they think the SMEs or large companies half (three companies) found the active CSR point of view. At leas a half thought (three) that large companies have more activities, but he also said that it is often only PR or marketing, ownership is not in the true sense of the word. The other three respondents felt that SMEs have a major responsibility, as a real responsibility should be considered. There was only one respondent who saw that CSR is not a function of companies size, according to him, this is more a matter of organizational culture: "I can see that there are bad habits Romania,... I think that a generation change will be required, for these reflexes to disappear. The generation who is now employed in an environment and it is not socialized to be socially responsible."

We also asked a question on what motivates the company's leaders to engage in CSR activities. We discussed that most of the actions are made only because of the standards or due to expectations, often for profit, or for the profit itself is subject to income share of the important benefits that motivate people, but it can be said that there is a moral, human background of the matter also The majority of respondents agree that marital status can affect your responsibility. Most people feel that the one who has a family, takes responsibility home, in the responsibility of spreading the society as well. Yet both have chosen to person who is more responsible at home, it is the primary responsibility, and it removes commitment towards society, maybe even less time to get to it. Many leaders stick to principles such as fairness, reliability, expertise, looking for approval. In this context, a company's management member also said: "In any case, it would be useful [alternative economics knowledge], for some people it could be receptive to catch them. In addition, they must set an example. In most cases, the interest liability. Too little time has passed since the regime change."
The respondent also gave a great appreciation for foreign experience. All entrepreneurs interviewed unanimously considered it important to learn from the "western culture", which is already a common practice in learning responsibility, volunteering, because there are greater social expectations than here in Romania.
The interviews were cloesed that we asked the leaders to give a few words, a few sentences of their own opinions, what it means for them to CSR:
"You have to grow up morally and financially for taking social responsability. The values, moral values are relative, not the same everywhere. Depends of culture and development and of liberalism." "Why do companies do it? It is PR, marketing and a combination of pressure. It is a question of mentality, the question of vision and we experienced through life. " "Pack Theory - A company must have a lot of things, you can not be just good or just bad. The whole activity should be considered to create a CSR that is healthy for society as a whole." "The CSR: resource and quality – we have to be each other's resources and not only outsider." " First of all it depends on the decision maker. It can be a big responsibility tendency when there is no tool or no affinity for it. "
The conclusion is noticeable and important, because CSR is growing in our country as well. Large corporations and SMEs alike feel the need for change, despite the fact that various implementation options are used by them.

CONCLUSION

In conclusion, I can say that the SME managers, despite the fact that they do not have an academic background, as in the case of large companies executives, where in many cases, a separate department carries out CSR activities, are trying to do the best to comply with the standards that are in front of them in order to produce or meet certain moral order of values.
Due to the fact that in many cases, these SMEs are the connected to their homeland, place of residence is directly related to the relationship between the manager and the staff is much closer, deeper, which results that these people are important for the executive, to the stakeholder groups. As the relations are closer, the responsibility seems more sincere in their case. This group of companies are struggling with many difficulties, mainly due to the lack of applicable measures, CSR practices, which hopefully in the near future due to increasing demands to be worked, like the GRI offers for smaller companies.

You can not share the same terminology used in the two study groups of companies, and even the literature for SME s, studies of these written (although these are very few in number) also, it would be necessary to invent a new concept as a responsible company and community value representation, while others argue that the European Commission should develop a new strategy for the SME.
Large corporate responsibility is more colorful, because it includes more events, but this brings in front the external stakeholders. This reflects the fact that many companies use CSR tools for PR and marketing purposes, such projects in a much more obvious way to all the stakeholders because the financial incomes are bigger. When you compare the amounts used for the benefit of the company, you will notice that they generally fall below 1%. Large companies and small and medium-sized companies still have a lot to learn from foreigners taking responsibility. Proactive, strategic steps need to be put in place, because these are still very rare in our country, most of the time we see just reactive measures. The present and future young entrepreneurs already have the opportunity to take up foreign educational or professional practice opportunities, overcoming the aftermath of communism to create organizational cultures that may have a positive impact on the society health.

REFERENCES

[1] Spence, L. J., & Lozano, J. F. (2000). Communicating about ethics with small firms: experiences from the UK and Spain. Journal of Business Ethics, 27, 43-53. http://dx.doi.org/10.1023/A:1006417425446
[2,5]Delchet-Cochet, K. & Vo, L.-C. (2012). Impact of CSR Tools on SMEs: The Case of Global Performance in France. International Business Research; Vol. 5, No. 7; 2012
[3]Jiraporn, P. & Chintrakarn, P. (2013). How do powerful CEOs view corporate social responsibility (CSR)? An empirical note. Economics Letters 119 (2013) 344–347
[4,9] Inyang, B. J. (2013). Defining the Role Engagement of Small and Medium-Sized Enterprises (SMEs) in Corporate Social Responsibility (CSR). International Business Research; Vol. 6, No. 5; 2013
[6,8, 14]Lepoutre, J., & Heene, A. (2006). Investigating the Impact of Firm Size on Small Business Social Responsibility: A Critical Review. Journal of Business Ethics, 67(3), 257-273
[7,10] Kechiche, A. & Soparnot R. (2012).CSR within SMEs: Literature Review. International Business Research; Vol. 5, No. 7; 2012
[11]Jenkins, H. (2006). Small Business Champions for Corporate Social Responsibility. Journal of Business Ethics, 67, 241-256
[12] Ede, F. O., Panigraphi, B., Stuart, J., & Calcich, S. (2000*). Ethics in small minority business.* Journal of Business Ethics, 26, 133-146.
[13] Iamandi I.-E. (2010). *Responsabilitatea socială corporativă în companiile multinaţionale*. Bukarest: Editura Economică.

THE VALIDITY OF GIBRAT´S LAW IN INDIVIDUAL SECTORS OF CZECH ECONOMY

Dr. Veronika Hedija[1]

[1] College of Polytechnics Jihlava, **Czech Republic**

ABSTRACT

Background: The study is focused on the relationship between firm size and firm growth in the Czech Republic. In accordance with Gibrat´s law which is also known as Law of proportionate effect, firm growth is the stochastic process that does not depend on firm size. The aim of this study is to test the validity of Gibrat´s law at the sectoral level using 1-digit Statistical classification of economic activities in the European Community Rev.2 (NACE).

Methods: The data are taken from database Albertina Gold Edition. The data for more than 36 thousand of Czech firms in the period 2008-2013 is used. To examine the relationship between firm size and firm growth, the linear auto-regression model is applied and subsequently F-test is used to verify the null hypothesis that Gibrat´s law is valid. Because of specifics of public sector, we test the Gibrat´s law validity only for private sector (sector A-N according to NACE).

Results: The validity of Gibrat´s law is rejected on the aggregate level and also for most of the industries in the Czech Republic. The validity of law is not rejected only in mining and quarrying (sector B) and financial and insurance activities (sector K). The smaller firms tend to grow faster than larger ones in other industries.

Conclusion: The study concludes that the Gibrat´s law is not valid in the Czech Republic in period 2008-2013 using industry level and smaller firm grow faster in comparison with their larger counterparts in the great majority of private sector. The reasons could be more: size of industry, competition rate, minimum effective scale of production, greater flexibility of smaller companies or support of small and medium size business. Here is the place for further research.

Keywords: Gibrat´s law, firm size, firm growth, Law of proportionate effect

INTRODUCTION

Does the firm size matter? Is there a relationship between the size of the company and its growth? Is the firm size one of the determinant of firm growth? Searching for an answer to these questions is the subject of a number of economic studies.

Economic theory does not give a clear answer to the above questions. On the one hand, large companies can realize economies of scale which increases their competitiveness. On the other hand, small businesses are more flexible, able to respond quickly to market changes and their management is simpler due to smaller size. Smaller firms can also tend to higher growth to reach the minimum effective scale of production (MES) in the sector. These factors speak for their faster growth in comparison with larger one.

The pioneering work on this field is the study by Gibrat [8]. Gibrat [8] examined the relationship between the size of the company and its growth and concluded that firm growth is a random walk, independent of company size. This idea is known as Gibrat´s law or the Law of proportionate effect as well.

At present, there are many studies that follow-up the Gibrat´s work and are devoted on empirical testing of Gibrat´s law validity. A review of these studies and summary of their conclusions can be found for example in [12] and review of more recent studies in [10]. The conclusions of individual studies vary. Some studies confirm the validity of Gibrat´s law, others reject it or bring mixed results. However, we can conclude that the most of the recent study reject the validity of Gibrat´s law and confirm the tendency of small firm to growth faster than larger ones (for example [1], [2], [3], [11]).

Daunfeldt and Elert [4] showed that the validity of Gibrat´s law is industry specific. They use a sample of more than 288 thousand Swedish firms and test the validity of Gibrat´law on aggregate and on sectoral level (using five-digit NACE). They reject the Gibrat´s law on an aggregate level and concluded that small companies grow faster than larger one. Using the industry level the results were mixed and they showed that the likelihood that the Gibrat´s law is confirmed is greater in mature industries with high market concentration and a large share of group ownership.

The aim of this study is to test the validity of Gibrat´s law at the sectoral level in the Czech Republic using one-digit Statistical classification of economic activities in the European Community Rev. 2 (NACE).

According to my knowledge there is not a study that tested the validity of Gibrat´s law on the sector level allowing comparison between sectors in the Czech Republic. Fiala and Hedija [5] proved the relationship between firm growth and firm size on the aggregate level using the Czech data and three indicators of firm size: number of employees, sales and assets. They rejected the validity of Gibrat´s law for all three indicators of firm size. Fiala [6] tested the validity of Law only for small and medium-sized manufacturing firms.

DATA AND METHODS

To evaluate the validity of Gibra´s law the data from database Albertina CZ Gold Edition are used. Albertina contains the information about all companies in the Czech Republic which have identification number of organization. Because of specifics of public sector, we test the validity of Gibrat´s law only for private sector. We use panel data for private sector for the period 2008 to 2013 where the private sector is defined as industries A-N according to NACE.

Furthermore, we narrowed the sample and use only data such companies, which were in 2008 at least 5 years in the industry, survived throughout the study period and did not change their main economic activity (using one-digit NACE). Removing the startup firms and firms that left the market enables us to monitor the development of mature companies in the industry. Development of startup and ending companies is specific when startup companies tend to be smaller and their initial growth is very dynamic. On the contrary, firms in liquidation mostly report a decline or minimum activity regardless of size. The empirical studies show that the Gibrat´s law is more likely to valid in mature industries [7], [9].

We use sales as the indicator of firm size. Sales, assets and number of employees belong to the most frequently used measurement of firm size in empirical studies [10]. We chose sales because of it is the most flexible indicator from the three previously mentioned. Such as the base period is used 2005. The indicator "sales" includes annual real revenues from sales of products, goods and services. Real „sales" are calculated using consumer price index published by the Czech Statistical Office[1]. The descriptive statistics are shown in table 1.

Table 1: Summary Statistics by industry

		2008-2013		2008		2013	
NACE	Number of firms	Average sales (in thousands CZK)	Coefficient of variation	Average sales (in thousands CZK)	Coefficient of variation	Average sales(in thousands CZK)	Coefficient of variation
A	1726	44697.49	2.015	46524.71	1.726	48744.24	2.202
B	80	122674.30	2.016	135636.90	1.923	123736.70	2.227
C	6806	109856.60	2.390	119787.80	2.310	112316.10	2.458
D	279	95562.32	3.010	96461.83	3.059	97224.13	3.246
E	364	83269.62	2.170	84250.42	1.988	82359.20	2.336
F	3439	49842.62	2.799	60105.93	2.672	40612.23	2.851
G	9283	70790.97	2.907	78594.95	2.832	68460.27	2.994
H	1049	95459.30	2.366	103399.50	2.400	98013.15	2.429
I	1033	16675.87	3.813	18834.19	3.716	15692.46	3.870
J	1299	48123.84	3.476	49748.87	3.380	47953.43	3.490
K	261	94625.03	3.262	119508.70	3.267	74670.42	3.393
L	5313	6962.28	5.600	7958.31	5.318	6290.33	6.257
M	4349	21473.32	4.476	25046.08	4.616	18851.56	4.418
N	940	55344.53	3.598	61054.04	3.805	54319.77	3.523
A-N	36221	58174.92	3.171	64400.37	3.093	56818.27	3.281

Note: A - agriculture, forestry and fishing; B – mining and quarrying, C- manufacturing, D- electricity, gas, steam and air-conditioning supply, E - water supply, sewerage, waste management and remediation activities; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; H - transportation and storage; I - accommodation and food service activities; J - information and communication; K - financial and insurance activities; L - real estate activities, M - professional, scientific and technical activities, M - administrative and support service activities.

Source: Database Albertina, own calculation

The validity of Gibrat's Law is verified using the linear auto-regression model proposed by Daunfeldt and Elert [4]:

$$lnS_{jt}^{i} = \alpha_{j0} + \alpha_{j1}.\ln S_{j(t-1)}^{i} + \theta_{jt}.T_t + u_{jt.} \quad (1)$$

[1] Sales = (revenue from sales of products, goods and services /CPI).100

SCIENTIFIC INTERNATIONAL MULTIDISCIPLINARY CONFERENCE ON SOCIAL SCIENCES AND ARTS

Where S_{jt}^{i} is the size of i-th firm of j-th industry in time t, $\theta_{jt}.T_t$ is a vector of time specific fixed effects. The values of parameter α_{j1} indicate if the Gibrat's law is valid or not.

Daunfeldt and Elert [4] proved the validity of Gibrat´s Law in individual industries using five-digit NACE classification for industry. In this study only one-digit NACE classification is used, therefore the equation 1 is modified. Similar modification was used in [5] or [6].

$$lnS_{it} = \alpha_0 + \alpha_1.\ln S_{i(t-1)} + \alpha_{2t}.T_t + \alpha_3.NACE_i + \alpha_{4t}.T_t.NACE_i + u_{t.} \quad (2)$$

Where S_{it} is the size of i-th firm in time t, $NACE_i$ is the dummy variable for industry of i-th firm using five-digit NACE classification, $\alpha_{2t}T_t$ is the vector of time specific fixed effects, $\alpha_3.NACE_i$ is the vector of industry specific fixed effects, $\alpha_{3t}.T_t.NACE_i$ is a vector of time and industry specific fixed effects. The value of parameter α_1 indicates if Gibrat's law is valid or not. Gibrat's law holds if $\widehat{\alpha_1}$ equal to one. The value smaller than one implies, that small firm grow faster than large and the value higher than one, that large firm grow faster than small.

As the indicator of firm size are used sales. Because of heteroscedasticity and serial correlation problem, we use Ordinary least squares (OLS) estimator with cluster-robust standard errors. To confirm or reject Gibrat's law, we test null hypothesis $H0: (\widehat{\alpha_1}) = 1$ versus $H1: (\widehat{\alpha_1}) \neq 1$ using F-test.

RESULTS

Firstly, we test the validity of Gibrat´s law on the whole sample of private sector firms (NACE A-N) using equation (2). The results are shown in table 2. Model (1) includes only the time specific fixed effect, which capture time-variant heterogeneity in growth rates. Model (2) and (3) contain also industry specific fixed effect and industry and time specific fixed effect capturing industry-variant heterogeneity in growth rates.

Table 2: Gibrat´s law validity estimation – private sector

	Model (1)	Model (2)	Model (3)
ln S_{t-1} (α_1)	0.979*** (0.001)	0.964*** (0.001)	0.965*** (0.001)
T_t fixed effects	Yes	Yes	Yes
$NACE_j$ fixed effects	-	Yes	Yes
T_t.$NACE_j$ fixed effects	-	-	Yes
Constant	0.059*** (0.008)	0.272*** (0.073)	0.386*** (0.113)
R^2	0.9409	0.9416	0.9431
N	181105	181105	181105
F-test	905.99	1024.05	964.83
p-value	0.0000	0.0000	0.0000

Notes: ***significant at the 1 percent level, **significant at the 5 percent level, *significant at the 10 percent level, robust standard errors in brackets, a. F- test of H0: α_1=1

Source: Albertina Gold Edition, own calculation

For rejection or confirmation the validity of Gibrat´s law, the key indicator is the value of the coefficient α_1. Gibrat´s law is valid in the case of α_1 is equal one. We use F-test to prove the null hypothesis that $\alpha_1 = 1$. On the basis of these results, Gibrat's law is rejected at 1 percent significance level ($\alpha_1 \neq 1$). The results indicate that $\alpha_1 < 1$ for all three variants of the model. These results imply that small firms in private sector grow faster than their larger counterparts in the Czech Republic, there is significant inverse relationship between firm size and firm growth. These results are not surprising and are consistent with the results of Fiala and Hedija [5] who tested the validity of Gibrat´s law at the aggregate level in the Czech Republic in period 2007-2012.

Then, we estimate the validity of Law separately for individual industries of Czech private sector using one-digit NACE. We use equation (2) again as in the previous case and employ the time and industry fixed effects. The results are shown in table 3.

Table 3: Gibrat´s law validity estimation - by industry

	A	**B**	**C**	**D**	**E**	**F**	**G**
$\ln.S_{t-1}$ (α_1)	0.981*** (0.004)	0.966*** (0.021)	0.991*** (0.002)	0.948*** (0.021)	0.975*** (0.009)	0.950*** (0.004)	0.963*** (0.002)
T_t fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$NACE_j$ fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$T_t.NACE_j$ fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.261** (0.121)	3.002*** (0.162)	0.145*** (0.020)	-0.037 (0.428)	0.317*** (0.097)	0.356*** (0.125)	0.036*** (0.104)
R^2	0.9479	0.9347	0.9502	0.9101	0.9482	0.8868	0.9363
N	8630	400	34030	1395	1820	17195	46415
F-test	21.40	2.64	15.21	6.08	8.51	132.75	248.36
p-value	0.0000	0.1081	0.0001	0.0143	0.0037	0.0000	0.0000
	H	**I**	**J**	**K**	**L**	**M**	**N**
$\ln.S_{t-1}$ (α_1)	0.979*** (0.008)	0.952*** (0.008)	0.984*** (0.005)	0.984*** (0.013)	0.946*** (0.003)	0.945*** (0.004)	0.976*** (0.006)
T_t fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$NACE_j$ fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$T_t.NACE_j$ fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.084 (0.068)	0.042 (0.210)	-0.312*** (0.072)	-0.190 (0.281)	0.321*** (0.101)	0.344*** (0.077)	0.126 (0.107)
R^2	0.9328	0.9050	0.9372	0.9243	0.9145	0.8991	0.9318
N	5245	5165	6495	1305	26565	21745	4700
F-test	6.92	36.68	11.88	1.47	435.85	236.61	17.64
p-value	0.0086	0.0000	0.0006	0.2261	0.0000	0.0000	0.0000

Notes: ***significant at the 1 percent level, **significant at the 5 percent level, *significant at the 10 percent level, robust standard errors in brackets, a. F- test of H0: $\alpha_1=1$

Source: Albertina Gold Edition, own calculation

Using the F-test we reject the validity of Gibrat´s law in almost all sectors at 1 percent level of significance. The exceptions are sectors B (mining and quarrying) and K

(financial and insurance activities), where the validity of tested Law is not rejected (even at 10 percent significance level). The validity of Law is rejected at 5 percent level of significance in industry D (electricity, gas, steam and air-conditioning supply). Just as at the aggregate level, we can confirm the tendency of small companies to grow faster than large firms in most industries of Czech private sector ($\alpha_1 < 1$).

According to expert studies, the validity of the Law depends on many factors. Among the most frequently mentioned can be included the age of the industry, uncertainty, minimum effective scale of production, industry size and competition in the sector. Empirical studies confirm that the Law is most likely to be valid in mature industries, small industries, industries with less competition, higher degree of uncertainty and in sectors with low or, conversely, very high MES. The growth of the firm is more likely random walk in mature industry because of lower proportion of new entrants. New firms are more likely smaller than mature firms in industry and tend to growth dynamic to achieve the MES. The lower rate of new firms is more likely with industries with high uncertainty in terms of profit achieved and with very high MES which could be a barrier for entrance. On the other hand, the very low MES could be the reason for validity of Gibrat´s law, because of small firms are not forced to grow faster than large firms. Concentration in the industry is other factor affecting the validity of law from the theoretical point of view. The high concentration prevents to enter new firms and monopoly power of larger firms is the barrier for fast growth of small firms in this industry [3], [4], [9].

The selected factors that could affect the validity of Gibrat´s law computing for Czech sectors are shown in table 4, specifically industry size, age, MES, concentration rate and uncertainty. Industry size is measured using the number of firm in the industry. Industry age is calculated as the mean age of firms in the industry. To set MES, we use median size of the firm in the industry. Concentration rate is measured by Herfindahl-Hirschman index (HHI). This index is computed as a sum of squares of firm market-shares in the industry, i.e. $\sum_{i=1}^{n} s_{ij}$, where n is the number of firms in industry j, s_{ij} is the proportion of real sales of firm i on real sales of industry j. The highest is the value of HHI, the highest is the concentration (lower is the competition) in the industry. If the all production is supplied by one firm, the HHI equals to one. To measure the uncertainty, we use the variation in returns on assets within the industry.

We use the sample of firms that were on the market at least for 5 years in 2008 and stay in the industry throughout the period 2008-2013. This procedure enables us to obtain a sample of relatively stable and mature companies and we eliminated the effect of uncertainty in the sector and the age of the sector to some extent. As we can see in Table 4 in terms of the industry age there are not significant differences among individual sectors in the Czech Republic. The average age of the companies ranged from 11-15 years. Uncertainty in the industry is listed here just for interest, and we can see that it varies significantly across sectors.

Size of the industry, degree of concentration and minimum efficient size of production belong to the factors that could play an important role in explaining Gibrat´s law validity in our case. Both sectors where the validity of Gibrat´s law was confirmed belong to the sectors with the lowest level of competition, both sectors are relatively small in respect of number of firm and homogenous (having only few subgroups NACE). Mining and quarrying (sector B) is also the sector with the highest MES and conversely financial and

insurance activities (sector K) belongs to the sectors with relatively low MES. This may be another reason for the validity of Gibrat´s law in these industries.

Table 4: Selected characteristics by industry in 2008

NACE	Number of firms	Industry age	Minimum efficient scale of production	Concentration rate	Uncertainty
A	1726	15 (0.458)	25212.760	0.002	3.368
B	80	13 (0.286)	47914.360	0.058	1.158
C	6806	12 (0.346)	29822.030	0.001	7.648
D	279	11 (0.284)	25593.220	0.037	2.605
E	364	12 (0.311)	31576.720	0.014	2.705
F	3439	12 (0.335)	17429.080	0.002	4.059
G	9283	12 (0.340)	12665.480	0.001	82.033
H	1049	11 (0.331)	25826.050	0.006	5.365
I	1033	11 (0.361)	4371.989	0.014	-18.421
J	1299	11 (0.339)	8524.531	0.010	7.121
K	261	11 (0.337)	8384.479	0.045	2.524
L	5313	11 (0.448)	681.534	0.006	33.948
M	4349	11 (0.331)	3491.525	0.005	11.680
N	940	11 (0.355)	11942.020	0.016	10.325

Note: Coefficient of variation in brackets.

Source: Albertina Gold Edition, own calculation

CONCLUSION

This study is devoted to the issue of relationship between firm growth and firm size. It aims to examine the validity of Gibrat´s law at the sectoral level in the Czech Republic. According to Gibrat´s law the growth of the firms is the random walk independent to firm size.

To test the validity of Gibrat´s law in the Czech economy, we used the data of more than 36 thousand of Czech firms operating in private sector in the period 2008-2013 and applied 1-digit NACE to distinguished the individual sectors of economy. Because of the validity of Law is more likely to be confirmed in adult industries, we included to the sample only companies that was at the market for at least 5 years in 2008.

We find out that the Gibrat´s law could not be confirmed at the aggregate level and also its validity was rejected for most of the industry in the Czech Republic. The validity of Gibrat´s law was not rejected at 5 level of significance only in mining and quarrying (sector B) and financial and insurance activities (sector K). There was identified the tendency of smaller firm to grow faster than their larger counterparts in other industries.

SCIENTIFIC CONFERENCE OF MULTIDISCIPLINARY SCIENCES AND ARTS SGEM 2014

Concentration rate, the size of the industry and MES were identified as key factors explaining the validity of Gibrat´s law in sector B and K. Both sectors (B and K) belong to the smallest industry in the number of companies, relatively homogeneous industries (low number of subcategories in NACE) and the industries with the highest concentration rate. Sector B belongs to the sector with the highest MES and sector K is the industry having the relative low MES. These factors may be key reasons for Gibrat´s law validity in these sectors.

ACKNOWLEDGEMENTS

This work was supported by the contribution of long term institutional support of research activities by the College of Polytechnics Jihlava.

REFERENCES

[1] Almus, M. and Nerlinger, E.A. 2000. Testing "Gibrat's Law" for Young Firms – Empirical Results for West Germany. *Small Business Economics* 15(1): 1–12.

[2] Calvo, J.L. 2006. Testing Gibrat's Law for Small, Young and Innovating Firms. *Small Business Economics* 26(2): 117–123.

[3] Coad, A. 2008. Firm growth and scaling of growth rate variance in multiplant firms. *Economics Bulletin* 12(9): 1–15.

[4] Daunfeldt, S.O. and Elert, N. 2013. When is Gibrat's Law a Law? *Small Business Economics*, 41(1): 133–147.

[5] Fiala R., Hedija. V., The Relationship Between Firm Size and Firm Growth: The Case of the Czech Republic, Acta Univ. Agric. Silvic. Mendelianae Brun., Czech Republic, vol. 63/issue 5, pp 1639-1644, 2015.

[6] Fiala R., Testing Gibrat's Law for small and medium-sized manufacturing firms: empirical evidence for the Czech Republic. In 33nd International Conference Mathematical Methods in Economics 2015, Czech Republic, pp 172-176, 2015.

[7] Fotopoulos, G. And Giotopoulos, I. 2010. Gibrat's law and persistence of growth in Greek manufacturing. *Small Business Economics*, 35: 191–202.

[8] Gibrat, R. 1931. *Les inégalités économiques*. Paris: Librairie du Receuil Sirey.

[9] Lotti, F., Santarelli, E. and Vivarelli, M. 2009. Defending Gibrat's law as a long-run regularity. *Small Business Economics* 32: 31–44.

[10] Nassar, I. A., Almsafir, M. K. and Al-Mahrouq, M. H. 2014. The Validity of Gibrat's Law in Developed and Developing Countries (2008-2013): Comparison Based Assessment. *Procedia - Social and Behavioral Sciences* 129(15 May 2014): 266-273.

[11] Oliveira, B. and Fortunato, A. 2006. Testing Gibrat´s Law: Empirical Evidence from a Panel of Portuguese Manufacturing Firms. *International Journal of the Economics of Business* 13(1): 65–81.

[12] Santarelli, E. , Klomp, L. and Thurik, A. R. 2006. Gibrat's Law: An Overview of the Empirical Literature. In: E. Santarelli (Ed.), Entrepreneurship, Growth, and Innovation: the Dynamics of Firms and Industries, pp. 41-73. New York: Springer.

THE WAGE PREMIUM FROM PARENTS' INVESTMENTS IN THE EDUCATION OF THEIR CHILDREN: EVIDENCE FROM POLAND

Dr. Jacek Liwinski
Emilia Bedyk

University of Warsaw, Faculty of Economic Sciences, **Poland**

ABSTRACT

The aim of this paper is to determine whether parents' investments in the education of children in Poland have an impact on their wages in adulthood and whether this influence is direct or rather indirect. To answer these questions, an extended Mincer wage equation was estimated using OLS on the basis of data from the nationwide tracer survey of Polish graduates conducted in 2007 (Graduate Tracer Study 2007). The dependent variable in the wage equation was hourly net wage rate in the first job after graduating from a secondary school or academy. Parents' investments in the education of their child have been depicted in the model with two groups of variables: the education level of each parent and participation in extra-curricular activities in the period of education in the last completed school or academy.

The results of the analysis show that parents' investments in the education of their children have a strong, positive, direct impact on the first earnings after the end of formal education. This relationship occurs both when the investment is depicted with the education level of each parent, as well as when represented by participating in various extra-curricular activities. In addition, parents' investments affect their children's wages also indirectly, as indicated by the decline in the wage premium from education after including in the wage equation each group of variables depicting the parents' investments. Thus, the omission of parents' investments in the wage equation leads to an upward bias of the wage premium from formal education.

Keywords: investment in human capital, formal education, parental investment, extra-curricular activities, wage premium

1. INTRODUCTION

Wage premium from education has been estimated in hundreds of studies for more than forty years since the human capital paradigm was developed [1], [2]. Education, whether expressed in terms of years of schooling, or measured by the education level, has been found to have a positive impact on earnings. Therefore, the rate of return on education computed on this basis substantiates decisions to invest in education. The academic boom observed in Poland since the early 1990s, manifested by a rapid increase of the net enrolment ratio in higher education from 9.8% in 1990 up to 40.9% in 2009 [3], demonstrates, that education is perceived as a key determinant of professional success.

Over years, numerous reservations have been raised against using the Mincer equation as a tool for estimating the wage premium from education. According to the signalling theory [4] – an extreme example of such a reservation – the wage premium results solely from the diversity of individuals according to their ability and as such, it

will appear even if formal education does not provide any skills that might be useful on the job. In a situation like this, formal education is only a tool for classifying the population according to abilities.

Furthermore, the role of inherent abilities and parents' investment in the education of their children in determining the level of future earnings is emphasised [5], [6]. Studies published in recent years stress that as a result of parents' investment choices, children develop not only cognitive, but also non-cognitive skills[1] (e.g. [7]). Contributing to this literature, Cunha and Heckman developed a model of skill formation over the life cycle, which proves that parents, when investing their time and money in the education of their children, increase their earning potential via two channels [8]. Firstly, in a direct way, through equipping their children with skills – both cognitive and non-cognitive – in their early childhood, so as to enable them to acquire further knowledge and skills in the formal education process. The more skills a child has when entering school, the more effective schooling will be, since according to Cunha and Heckman skills are self-productive [8]. Secondly, parents have an indirect impact on their children's future earnings, through providing them with skills that are useful in the labour market, but cannot be acquired at school or university. Hence, if the wage equation does not include the stock of skills at the start of schooling and parental investments made in the schooling period, then, if there is selection of those most talented for non-compulsory schooling, the wage premium from education may be overestimated.

This thesis is supported by research. Firstly, studies show that cognitive and non-cognitive skills of children aged 5-7 have a positive impact on their earnings in adulthood and, if included in the wage equation, translate into a lower wage premium from education [9], [10], [11]. Secondly, studies document that parents' investments in the education of their children – represented in the wage equation by such variables as: parents' education level, their income, occupation or interest in the child's educational progress – have a positive impact on children's earnings in adulthood, this influence being both direct [10], [12] and indirect, that is via the effect on the wage premium from education [9]. Furthermore, research indicates a positive direct impact of investments represented by the child's participation in extracurricular activities [13].

There have been numerous studies on the wage premium from education in Poland, but so far only in one of them parental investments in education of their children were included in the wage equation [14].[2] Earnings in adulthood were found to be positively related to parental investments, both directly and indirectly. It should be noted however, that this analysis covers the initial period of the economic transformation in Poland only (1991-1993) and it is based on a relatively modest research sample. The wage premium from parents' investments in extracurricular activities of their children in the period of formal education has not been analysed in Poland so far.

[1] The concept of "non-cognitive skills", although criticised by some psychologists, has been commonly accepted in the literature for denoting all skills that are not measured using IQ and achievement tests. It is used interchangeably with such terms as "socio-emotional skills", "personality traits", "personal characteristics", "soft skills", although they all differ to a certain degree in fact.

[2] It was father's education represented by the years of schooling.

The aim of this paper is to determine whether the parents' investments in the education of children in Poland have an impact on the wages of the latter in adulthood and whether this influence is direct or indirect. To answer these questions, an extended Mincer wage equation was estimated using OLS on the basis of data from the nationwide tracer survey of Polish graduates conducted in 2007. [3] Unlike other Polish nationwide sampling studies of economic activity in the labour market (PLFS – Polish Labour Force Survey, HCB – Human Capital Balance, HBS – Household Budgets Survey), this one provides detailed information about various forms of investments in human capital in the period of formal education.

The results of the analysis show that parents' investments in the education of their children have a strong, positive impact on the first earnings after the end of formal education. This influence is identified when investments are measured by the parents' education level, as well as when represented by the child's participation in various extra-curricular activities. Furthermore, parental investments have also an indirect impact on their children's earnings in adulthood, as indicated by the decline in the wage premium from education, when any of the above investment measures is included in the wage equation.

The paper is structured into three sections. In the first one, we discuss the process of human capital formation. The second chapter offers an overview of recent empirical research on the wage premium from parents' investments in the education of their children. The third section presents our own empirical analysis of Polish data. The paper ends with the key conclusions from our study.

2. LITERATURE REVIEW

The main focus of studies on private effects of human capital investments is on estimating the wage premium or the rate of return from formal education. Most frequently, the Mincer wage equation is used for this purpose, with years of schooling or education level as a measure of investment in formal education. The equation is based on an assumption that formal education and years of work (representing professional experience and on-the-job training) are the only determinants of human capital acquired by an individual. Yet, if the stock of human capital and, consequently, future earnings are determined also by some other factors, which are correlated with formal education, then omitting them in the model may result in a biased estimator of the wage premium from formal education. In the light of the model of skill formation in the initial period of life [8], the Mincer wage equation neglects innate abilities, as well as investments by parents and the environment. Therefore, attempts have been made to expand the wage equation and include variables representing these factors.

Hanushek and Woessmann proposed a model, in which individual earnings (Y) are a function of the human capital stock represented by: abilities (A), family investments (F), formal education (S) and other factors (X), including professional experience and health status [15]. Hence, the wage equation takes the following form:

$$Y_i = \alpha A_i + \beta F_i + \gamma S_i + \delta X_i + \varepsilon_i \quad (1)$$

[3] The survey was carried out by the Central Statistical Office of Poland (GUS) in the years 2006-2007. It covered more than 20 thousand respondents who completed their formal education in the years 1998-2005. The data gathered reflect graduates' professional path over the first three years after graduation, with a special focus on their first job.

where stochastic term (ε) represents idiosyncratic earnings differences.

In the equation presented above, the stock of human capital is represented – similarly as in the Mincer wage equation – by key inputs to the process of human capital formation. What variables will be used as measures of specific input categories, depends on the availability of data. Abilities are usually measured using the intelligence quotient [16], but this variable is relatively seldom available in databases. Therefore, an alternative approach is adopted, where pre-school or pre-college cognitive and non-cognitive skills (H^C and H^N respectively) are included in the wage equation [17]. Then, the wage equation would be as follows:

$$Y_i = \theta H_i^C + \sigma H_i^N + \beta F_i + \gamma S_i + \delta X_i + \upsilon_i \quad (2)$$

Furthermore, cognitive skills are measured by: reading comprehension and numerical reasoning test scores [9], university admission test achievements [12], [18], secondary school graduation test scores [9]. Non-cognitive skills are most often represented by various indirect measures based on behaviour patterns observed. Information about respondents' behaviour in their childhood is obtained from their teachers, parents or respondents themselves. [4] Most frequently children are observed in their pre-school or school environment. Observation includes such behaviours, as: peer relations, interaction with adults (willingness to interact, hostility), conduct in classes (active, passive, disruptive), work habits and conscientiousness (doing homework, punctuality, attendance). The behaviours observed are used as separate measures of non-cognitive skills [11], [13] or as a basis for compound measures [9], [10].

Parental investments are usually represented in wage equations by those of the parents' features that have a potential of being correlated with their willingness to invest in the education of their children. These include: parents' education, their income, occupation, employment status, or interest in the child's educational progress [9], [10], [12], [19]. Direct measures, such as child's participation in educational activities requiring parents to bear a cost, are less common. An example of such a measure is participation in extracurricular activities [13], [20].

Research has shown that skills, both cognitive and non-cognitive, of children aged 5-7 are strong determinants of their earnings in adulthood [10], [11]. Furthermore, wages are found to be affected by parents' investments in the education of their children, whether the latter are represented in the wage equation by such parental characteristics as: education, income, occupation and interest in child's educational progress [9], [10], [12], or measured by the child's participation in extracurricular activities [13]. Last but not least, Naylor, Smith and Telhaj found out that the inclusion of variables reflecting pre-school skills and parents' investments in the wage equation resulted in a lower wage premium from education [9]. [5]

There have been numerous studies on the wage premium from education in Poland. They were based on data from various sources. [6] It is a common feature of these analyses that they apply the Mincer wage equation estimated using OLS, with or without the Heckman correction. While many different specifications have been used,

[4] According to some authors, teachers and pedagogues, being objective, are the best sources of information.

[5] To be specific, the study refers to a premium for the class of degree achieved in the UK.

[6] In most cases, individual data were sourced from: PLFS – Polish Labour Force Survey, HBS – Household Budgets Survey, the October survey of wages conducted by the Central Statistical Office in Poland.

there has been only one analysis so far in which a variable depicting parental investments was included in the wage equation (it was father's years of schooling) [14]. This variable was found to have a significant positive impact on wages. Besides, when it was included in the linear regression model estimated using OLS, the wage premium from the tertiary education decreased by ca. 2 percentage points. It should be noted however, that this analysis covers the initial period of the economic transformation in Poland only (1991-1993) and is based on a relatively modest research sample (ca. 500 respondents each year) which comes from ISSP (International Social Survey Program).

3. EMPIRICAL ANALYSIS

The aim of this paper is to determine whether parents' investments in the education of children in Poland have an impact on the wages of the latter in adulthood and whether this effect is direct or indirect.

3.1. DATA

The analysis is based on data from the nationwide tracer survey of Polish graduates conducted by the Central Statistical Office of Poland (GUS) in the years 2006-2007. The focus of the survey was on the economic activity of graduates of various school types over the period of the first three years after the completion of formal education, with special attention to the first job after the graduation. The nationwide survey was conducted on a sample of 20 251 persons who completed their formal education between 1 January 1998 and 31 December 2005 (at basic vocational schools, technical secondary schools, general secondary schools, post-secondary schools, universities). The population was limited to individuals who did not exceed 27 years of age at the time of graduation and the break between the next-to-last and the last stage of education was not longer than 12 months.

The reason behind choosing namely this database is that, unlike other Polish nationwide sampling studies of economic activity in the labour market (PLFS – Polish Labour Force Survey, HCB – Human Capital Balance, HBS – Household Budgets Survey), this one provides detailed information about various forms of investments in human capital in the period of formal schooling. In particular, it contains information about the participation in various types of extracurricular activities at school and outside it (e.g. foreign language classes, IT classes, sports and tourism, artistic and technical activities, scouting).

As a dependent variable, we used log of an hourly wage rate computed on the basis of the net wage and the number of working hours in the first job after graduation, provided that the respondent undertook employment within a year after the graduation. Consequently, the following respondent categories have been eliminated from the database: 1) individuals who did not work within the first year after ending formal education, 2) self-employed and family members supporting them, since none of these groups was asked about earnings, 3) hired workers who did not disclose their income. Eventually, the sample used for the analysis comprised 6403 observations.

SCIENTIFIC JOURNAL OF THE INTERDISCIPLINARY SCIENCES AND ARTS

3.2. METHOD OF ANALYSIS

Based on the overview of theoretical and empirical literature, as well as some preliminary analyses, we formulated the wage equation as follows: [7]

$$w_i = S_i\beta_1 + F_i\beta_2 + X_i\beta_3 + \varepsilon_i \quad (3)$$

where dependent variable ($\boldsymbol{w}_i$) represents the natural logarithm of the first net hourly rate earned by graduates in the first job after completing formal education, provided that they undertook employment within the first year after graduation. [8] Independent variables include: ($\boldsymbol{S}_i$) – education level, ($\boldsymbol{F}_i$) – vector of variables depicting parents' investment in the education of their child, ($\boldsymbol{X}_i$) – vector of variables which covers other individual traits of graduates and characteristics of the local labour market. The linear regression model above was estimated using OLS, by computing heteroscedasticity-resistant variance estimations.

The problem encountered in the context of this analysis is that the database used in the analysis does not contain any variable that might be a direct measure of cognitive and non-cognitive skills at the start of formal education. Among the variables available in the database, the grade point average from the diploma of the last school attended seems to be the closest approximation of these skills. Indeed, grade point average is often accepted as a measure of cognitive and non-cognitive skills [9], [18], [19], although using it seems more justifiable when comparing graduates from the same educational stage than those ending education at different stages. In addition, it seems doubtful if the measure of skills at the moment of graduation may be a good approximation of skills at the start of schooling. Therefore, we chose not to include the grade point average in the model. Under the circumstances, the variables depicting the parents' and school investments may be biased. If the amounts of both these investments are directly proportional to child's abilities – as assumed by Cunha and Heckman – the bias will be positive, i.e. the wage premium from parents' and school investments will be overestimated [8]. [9]

3.3. RESULTS

To analyse the effect of each variable representing parents' investments in the education of their children on graduates' first earnings, as well as on the wage premium from formal education, we estimated a dozen model specifications. The first specification, besides control variables (gender, age, place of residence, region, year of graduation), encompasses the level of formal education only, more variables to be added gradually further on (Table 1).

---

[7] Initially, due to the suspected self-selection of the sample, the wage model was estimated using Heckman's two-step approach. Besides variables present in the wage equation, three additional variables were used in the selection equation: marital status, number of children, family model (both / one of the parents working). Yet, since the results did not show any self-selection bias, we finally decided to estimate the linear regression model using OLS.

[8] For the sake of comparability of the initial earnings of graduates who started their first job in different years (1998-2005), initial hourly rates were adjusted by the Consumer Price Index, with 2005 as the base year.

[9] According to Becker and Tomes, parents seeking to maximize the utility of investing in children, provide able children with human capital, while those less able with other types of capital (financial, physical) [6].

The results show that the wage premium increases along with the level of formal education, but its value depends on the model specification. When formal education level is the only variable representing the stock of human capital, the wage premium accounts for 8% and 11% for graduates of general secondary schools and secondary vocational schools[10] respectively (against graduates of basic vocational schools, who are base category), while premiums obtained by graduates of bachelor's/engineer's and master's degree programs are much higher and reach as much as 42% and 55% respectively (specification 1).[11]

Parental investments in education are depicted by two groups of variables in the model: parental education level and participation in extracurricular activities at the last stage of formal education. They were chosen due to the availability of data, as well as for theoretical and empirical reasons.

According to Leibowitz, the level of parental education is related to:

1) the quantity and quality of parents' time spent on educating their children,
2) the quantity and quality of educational goods and services purchased by parents for their children [5]. [12]

The results of empirical research indicate that this relation is positive in both cases. Firstly, parents with a university degree spend more time on active childcare, which includes conversation, listening, reading, playing games and teaching [21]. At the same time, activities of this type are found to contribute the most to the child's human capital [22]. Secondly, data from surveys conducted in Poland prove that parental education level has a positive impact on private expenditures on the education of children [23].

The database used for the empirical analysis provides information about each parent's level of education. [13] When mother's and father's education level is included in separate specifications, each of them has a positive effect on the child's future earnings, the impact of father's education being stronger however (specification 2 and 3). On the other hand, when both these variables are included in one and the same specification, it is only father's education that adds significantly and positively to graduate's earnings (specification 4). [14] The likely reason is that men's contribution to the household income is greater and consequently, there is a stronger correlation between father's than mother's education and the household income. When expanded by parental education level, the model shows a significant decline in the child's educational wage premium– from 55% to 43% for graduates of master's studies. Based on the model of skill formation [8], this outcome can be interpreted as evidence that parents provide their children with skills that are useful in the process of formal education and afterwards also in their professional life. [15]

[10] The latter category comprises graduates of technical secondary schools, profiled secondary schools and post-secondary schools.

[11] Percentage increments were computed using the coefficients presented in Table 1, according to the following formula: $\Delta\%=\exp(\beta)-1$.

[12] Looking more broadly and leaving the human capital paradigm, one can see that parental education represents cultural and social capital too and these two values can also be passed to children and have an effect on their future earnings.

[13] "Education unknown" is an additional class within this variable, which should be identified as the lack of a parent most probably.

[14] A similar outcome is reported by Carneiro, Crawford and Goodman [10].

[15] Since the positive effect of father's education was suspected to be, to some extent, a result of father's help in finding the first job, a variable reflecting relatives' or acquaintance's help in getting the first job

Child's extracurricular activities when attending the last school (or university) is an alternative measure of parental investments. [16] In this case, the investment comprises not only the direct cost of participation (e.g. attendance fees, cost of materials and travelling), but also, or maybe even mostly, the cost of equipping the child with the basic skills that predetermine or inspire extracurricular participation. It seems that extracurricular participation can be encouraged both by cognitive skills and a variety of non-cognitive skills, such as: intellectual curiosity, sociability, pro-activeness, assertiveness, conscientiousness, self-discipline, perseverance, determination – the skills that should potentially be conducive to efficient learning and work. Therefore, extracurricular participation seems to be a good measure of the parental investments in skills that are useful at school and work.

The database contains information about child's participation in six types of extracurricular activities: foreign language classes, IT classes, sports and tourism, artistic activities, technical activities and scouting. When included in the model individually (in separate specifications), each of them has a positive effect on graduates' earnings (specifications 5-10). If all are included in one and the same specification, only four of them have an independent effect on earnings – foreign language classes, IT classes, sports and tourism, scouting (specification 11). Then, when parental education level is added to the model, only two extracurricular activity types matter – language classes and technical activities. They translate into a 10% increase in earnings.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

was included in the wage equation. This variable turned out to be statistically insignificant, even when crossed with father's education.

[16] The database used does not allow the identification of extracurricular participation at the earlier stages of education.

SCIENTIFIC COMMITTEE
3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE 2016 SOCIETY SCIENCES AND ARTS

Table 1. Estimates of the graduates' first wage equation

Model specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Education: secondary general	0.104***	0.061**	0.070***	0.054**	0.083***	0.098***	0.097***	0.099***	0.104***	0.103***	0.073***	0.033
Education: secondary vocational	0.074***	0.046**	0.048**	0.041**	0.063***	0.069***	0.068***	0.072***	0.072***	0.073***	0.056***	0.029
Education: tertiary, bachelor's engineer's	0.348***	0.298***	0.299***	0.287***	0.329***	0.343***	0.343***	0.346***	0.346***	0.347***	0.324***	0.274***
Education: tertiary, master's degree	0.440***	0.369***	0.376***	0.357***	0.408***	0.434***	0.431***	0.437***	0.441***	0.440***	0.402***	0.333***
Father's education: unknown		0.094*		0.094*								0.091*
Father's education: basic vocational		0.073***		0.068***								0.067***
Father's education: secondary		0.158***		0.140***								0.136***
Father's education: tertiary		0.270***		0.241***								0.230***
Mother's education: unknown			0.026	-0.025								-0.026
Mother's education: basic vocational			0.035	0.004								0.003
Mother's education: secondary			0.100***	0.031								0.026
Mother's education: tertiary			0.184***	0.051								0.033
Extracurricular activities: language classes					0.130***						0.113***	0.095***
Extracurricular activities: IT classes						0.097***					0.050*	0.041
Extracurricular activities: sports and							0.060***				0.036*	0.028
Extracurricular activities: artistic activities								0.088***			0.053	0.050
Extracurricular activities: technical									0.122**		0.094	0.097*
Extracurricular activities: scouting										0.129**	0.096*	0.071
Number of observations	6,403	6,403	6,403	6,403	6,403	6,403	6,403	6,403	6,403	6,403	6,403	6,403
R2	0.115	0.128	0.122	0.129	0.121	0.117	0.117	0.116	0.116	0.116	0.123	0.135
p-value of F-statistics	0	0	0	0	0	0	0	0	0	0	0	0

Note: Each specification includes additionally: gender, age when first employed, place of residence, region (province), year of graduation; ***/**/* stand for 1%, 5% and 10% significance level respectively.

Source: Authors' own analyses based on unit data from the nationwide tracer survey of Polish graduates conducted in 2007.

The findings reported above seem to support our initial thesis that extracurricular participation requires some basic skills, both cognitive and non-cognitive. Since these skills are not fully controlled for in the model, we may suspect a biased estimator of the wage premium from extracurricular activities. The more variables depicting basic skills are included in the model (graduate's education, parental education, participation in other extracurricular activities), the smaller the bias should be. In our model, most probably, the bias has not been entirely eliminated. Therefore, the positive relation between language classes or technical activities and earnings may still be partly a result of the incomplete identification of basic skills (e.g. the lack of a measure of innate abilities), but most probably it mainly reflects some specific skills that encourage participation in such activities (e.g. linguistic predispositions, technical predispositions) and the increment of skills resulting from participation in these activities.

It should be stressed that the inclusion of parents' education and extracurricular participation in the wage equation translates into a lower wage premium from education, but the effect of adding each of these two groups of variables is to some extent independent of the other one. This brings us to a conclusion that skills developed as a result of parental investments represented by these variables not only improve employability, but are also useful in acquiring formal education. Therefore, variables representing these investments, if used in the model, reduce the bias of the wage premium from education. What is important - the reduction is substantial. The wage premium from master's degree and from bachelor's/engineer's degree decreases by nearly one-fourth (from 55% down to 40% and from 42% to 32% respectively), while secondary vocational and general secondary education entirely lose their positive impact on graduates' earnings (when compared with the basic vocational education).

These findings are largely consistent with the outcomes of former research on the effect of parents' investments on their children's earnings in adulthood. They corroborate the positive impact of father's education on his child's wage, reported earlier by Flabbi, Paternostro and Tiongson for Poland [9] and Carneiro, Crawford and Goodman for the UK [10]. Furthermore, they indicate a positive wage effect of parents' investments in the form of child's participation in extracurricular activities (language classes and technical activities). Lleras is the only author reporting a similar finding for the United States (related to sports and non-sports academic activities) [13], while Rosenbaum, whose analysis covered the U.S. too, did not find out such a relationship [20].

4. CONCLUSIONS

The findings of the study provide a basis for a number of essential conclusions. Firstly, parents' investments in the education of their children have a strong, positive, direct impact on graduates' first earnings in Poland. This relationship is observed both when investments are depicted with the level of parents' education and the child's participation in extracurricular activities at the last stage of formal education. This effect seems to be rather strong, since father's university degree translates into child's wage higher by 26% than that earned by children of fathers with a primary education, while extracurricular technical activities and language classes yield a 10% wage premium. By comparison, wage premium from bachelor's/engineer's and master's degree amounts to 32% and 40% respectively.

Secondly, by investing in education, parents provide their children with skills that are useful in their professional life, as well as with those useful in the process of formal education. Hence, these investments influence graduates' earnings not only directly, but also indirectly. The significance of the latter effect is nontrivial, since nearly one-fourth of the tertiary education premium and the whole premium for secondary vocational and general secondary education is explained by parent's investments in the education of their children.

Thirdly, the above implies that parents' investments should be included in the wage equation, otherwise the wage premium from education will be overestimated. This, in turn, may result in overestimation of the rate of return from education and consequently, in making wrong decisions as regards private and public investments in formal education.

Certainly, the analysis presented here is subject to a number of limitations that may have affected the results. Firstly, it covers only the first wages paid to graduates who took up employment within the first year after graduation over the period 1998-2005. It cannot be ruled out that the wage premium from formal education and from parents' investments change over time. An employer who faces a candidate with no employment record, may refer to the applicant's education, class of degree and skills presented during the interview. In time, as the actual productivity is revealed, the education premium may change.

Secondly, according to the model of skill formation [8], to identify the premium from parental and school investments, it would be necessary to control for innate abilities or pre-school cognitive and non-cognitive skills in the wage equation.[17] Regrettably, the database does not contain any such information, therefore the premium from parental investments may have been overestimated if parents' and school investments are complementary to child's abilities, or underestimated, if they are substitutive.

Thirdly, the level of parents' education has been used as one of the measures of parents' investments in the education of children. According Carneiro, Crawford and Goodman, such factors as the family social class, represented by father's occupation, as well as parents' concern about the child's educational progress, have a stronger effect on their children's cognitive and non-cognitive skills [10]. Naylor, Smith and Telhaj, on the other hand, add parents' income to the wage equation [9]. Regrettably, such data are not available in the database used for this study. This may impair the identification of parents' investments. The inclusion of extracurricular participation in the model was intended to address this problem to some extent.

REFERENCES

[1] Becker G.S. (1964), Human capital: A theoretical and empirical analysis, with special reference to education, National Bureau of Economic Research, New York.
[2] Mincer J. (1974), Schooling, Experience and Earnings, New York: Columbia University Press for the National Bureau of Economic Research.

[17] An approach like this was adopted by Carneiro, Crawford and Goodman [10] and by Naylor, Smith and Telhaj [9], for example.

[3] GUS (2015), Szkoły wyższe i ich finanse w 2014r., Informacje i opracowania statystyczne, Warszawa.
[4] Spence A.M. (1973), Job Market Signaling, Quarterly Journal of Economics, 87 (3), s. 355-374.
[5] Leibowitz A. (1974), Home investments in children, Journal of Political Economy, 82(2), pp. 111–131.
[6] Becker G. S., Tomes N. (1976), Child endowments and the quantity and quality of children. The Journal of Political Economy, 84(4), pp. 143–162.
[7] Carneiro P., Heckman J.J. (2003), Human Capital Policy; in: Heckman J.J., Krueger A.B. i Friedman B.M. (ed.), Inequality in America: What Role for Human Capital Policies?, MIT Press, Cambridge (MA).
[8] Cunha F., Heckman J.J. (2007), The technology of skill formation, American Economic Review, 97 (2), pp. 31–47.
[9] Naylor R., Smith J., Telhaj S. (2015), Graduate Returns, Degree Class Premia and Higher Education Expansion in the UK, Centre for Economic Performance, Discussion Paper No 1392.
[10] Carneiro P., Crawford C., Goodman A. (2007) The Impact of Early Cognitive and Noncognitive Skills on Later Outcomes, CEE DP 92, Centre for the Economics of Education, London School of Economics, London.
[11] Blanden, J., Gregg P., Macmillan L. (2007), Accounting for intergenerational income persistence: non-cognitive skills, ability and education, Economic Journal, 117, pp. C43-60.
[12] Crawford C., Vignoles A. (2014), Heterogeneity in graduate earnings by socio-economic background, IFS Working Paper W14/30.
[13] Lleras C. (2008), Do skills and behaviors in high school matter? The contribution of noncognitive factors in explaining differences in educational attainment and earnings, Social Science Research, 37, pp. 888–902.
[14] Flabbi L., Paternostro S., Tiongson E.R. (2008) Returns to education in the economic transition: A systematic assessment using comparable data, Economics of Education Review, 27, pp. 724–740.
[15] Hanushek E.A., Woessmann L. (2008), The role of cognitive skills in economic development, Journal of Economic Literature, 46 (3), pp. 607-668.
[16] Herrnstein R.J., Murray C.A. (1994), The Bell Curve: Intelligence and Class Structure in American Life, Free Press, New York.
[17] Heckman J.J., Stixrud J., Urzua S. (2006), The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior, Journal of Labor Economics, 24(3), s. 411–82.
[18] Chia G., Miller P.W. (2007), Tertiary performance, field of study and graduate starting salary, University of Western Australia.
[19] Freier R., Schumann M., Siedler T. (2015), The Earnings Returns to Graduating with Honors: Evidence from Law Graduates, IZA Discussion paper Nr 8825.
[20] Rosenbaum J. (2001), Beyond College for All: Career Paths for the Forgotten Half, Russell Sage Foundation, New York.
[21] Craig L. (2006) Parental education, time in paid work and time with children: an Australian time-diary analysis, The British Journal of Sociology 57 (4), pp. 553-575.
[22] Brooks-Gunn J., Han W.-J., Waldfogel J. (2002), Maternal Employment and Child Cognitive Outcomes in the First Three Years of Life: The NICHD Study of Early Child Care, Child Development 73(4), pp. 1052–72.
[23] Rokicka M., Sztanderska U (2013), Cechy społeczno-ekonomiczne rodziny a ponoszenie wydatków na prywatne dobra i usługi edukacyjne, Edukacja, 1(121), pp

TOTAL FACTOR PRODUCTIVITY GROWTH AND INNOVATION POLICY TOOLS: EMPIRICAL STUDY

Assoc. Prof. Dr Svetlana Balashova[1]

Assoc. Prof. Dr Svetlana Revinova[1]

Assoc. Prof. Dr Inna Lazanuyk[1]

[1] RUDN University, **Russia**

ABSTRACT

The primary purpose of this study is to find out the impact of innovation policy on the dynamics of total factor productivity (TFP). The approach of the Conference Board Total Economy Database is used to measure TFP. According to this method, the growth in output is the result of an increase in labour and capital service, where capital is decomposed into ICT capital, and non-ICT-capital, and labour is decomposed into pure employment quantity and labour quality. Thus, TFP growth captures technical change and the overall efficiency.

The main contribution of this study to the literature is the following. TFP dynamics may be examined as the autoregressive distributed lag model, but different sets of the key indicators should be used to assess the determinants of TFP growth in various groups of countries. The Foreign direct investment proved to be an important channel of knowledge spillover and technological adoption for middle-income countries and countries exporters of natural resources. However, in post-industrial countries, the overall effectiveness of the innovation policy has the positive effects on total factor productivity growth.

Keywords: total factor, productivity, economic growth, innovation activity, ADL model

INTRODUCTION

Following neo-classical approach [1] aggregate value added (or GDP) growth can be decomposed into contributions from aggregate capital input (K), aggregate labour input (L) and aggregate total factor productivity (TFP) growth as:

$$\Delta \ln GDP = \nu_K \Delta \ln K + \nu_L \Delta \ln L + \Delta \ln TFP \quad (1)$$

TFP can be regarded as a measure of productivity which takes into account not only labour as an input but also physical, human and other intangible capital.

The main tasks of the study are:

- to analyse the dynamics of TFP growth in different groups of countries
- to consider the affect of the 2007-2008 crises on TFP growth
- to estimate the impact of the quality of the national innovation system and innovation policy on TFP growth in the developed countries.

Time series analysis and descriptive statistics are used to examine the dynamics of TFP growth in different groups of countries.

Literature review [2] and TFP growth data analysis suggest there must be different sets of the key drivers of TFP growth in the various groups of countries. We consider two different channels of technological changes. Benefits from the quality of the national innovation system and benefits from foreign direct investment.

DATA AND METHODOLOGY

We use the Conference Board Total Economy Database (TED) as a source of data for TFP growth[1]. The database contains time series data for 120 countries, covering the period 1990-2014.

Following Jorgenson [3,4], capital services and labour input are measured as translog aggregates of heterogeneous types of capital and labour. In TED capital is decomposed into ICT capital and non-ICT-capital and labour is decomposed into pure employment quantity and labour quality. Thus, TFP growth captures technical change and the overall efficiency. A detailed description of the sources and methods used to construct all the variables can be found in [5].

We assume following the literature [6,7], that autoregressive distributed lag (ADL) model can be of use to examine productivity growth. Thus we estimate two equations. First consider the impact of FDI on TFP growth as was suggested by many researchers (for example [8]), and examine partial adjustment model

$$\Delta \ln TFP_{it} = (1-\lambda)\Delta \ln TFP_{it-1} + \beta \Delta \ln FDI_{it} + \alpha_0 + \alpha_i + \delta_t + \varepsilon_{it} \quad (2)$$

where $\lambda<1$ is the adjustment coefficient of the partial adjustment process (see, for example [9]), ε_{it} is an error term, *i* denotes for a country, and *t* denotes for a year. Thus the short run effect is represented by β; the long run effect is equal to β/λ. α and δ denote for country and period fixed effects. The source for FDI data is IMF. We apply the World Bank country classification by income level and distinguish between high-income (GNI per capita ≥$12476), middle-income and low-income countries (GNI per capita ≤ $1025). We also distinguish between high-income OECD and non-OECD countries.

Second, for a group of the OECD countries the TFP equation is specified to allow for the role of the national innovation system as a source of productivity growth

$$\Delta \ln TFP_{it} = (1-\lambda)\Delta \ln TFP_{it-1} + \sum_j \beta^j X^j{}_{it-1} + \alpha_0 + \alpha_i + \delta_t + \varepsilon_{it} \quad (3)$$

The first term in equation (3) represents dynamics in the model. The vector X represents various characteristics of the national innovation system, which may affect aggregate TFP growth. First, we consider indicators of innovation. We examine such factor as the stock of triadic patents per a researcher. This factor characterises the efficiency of the

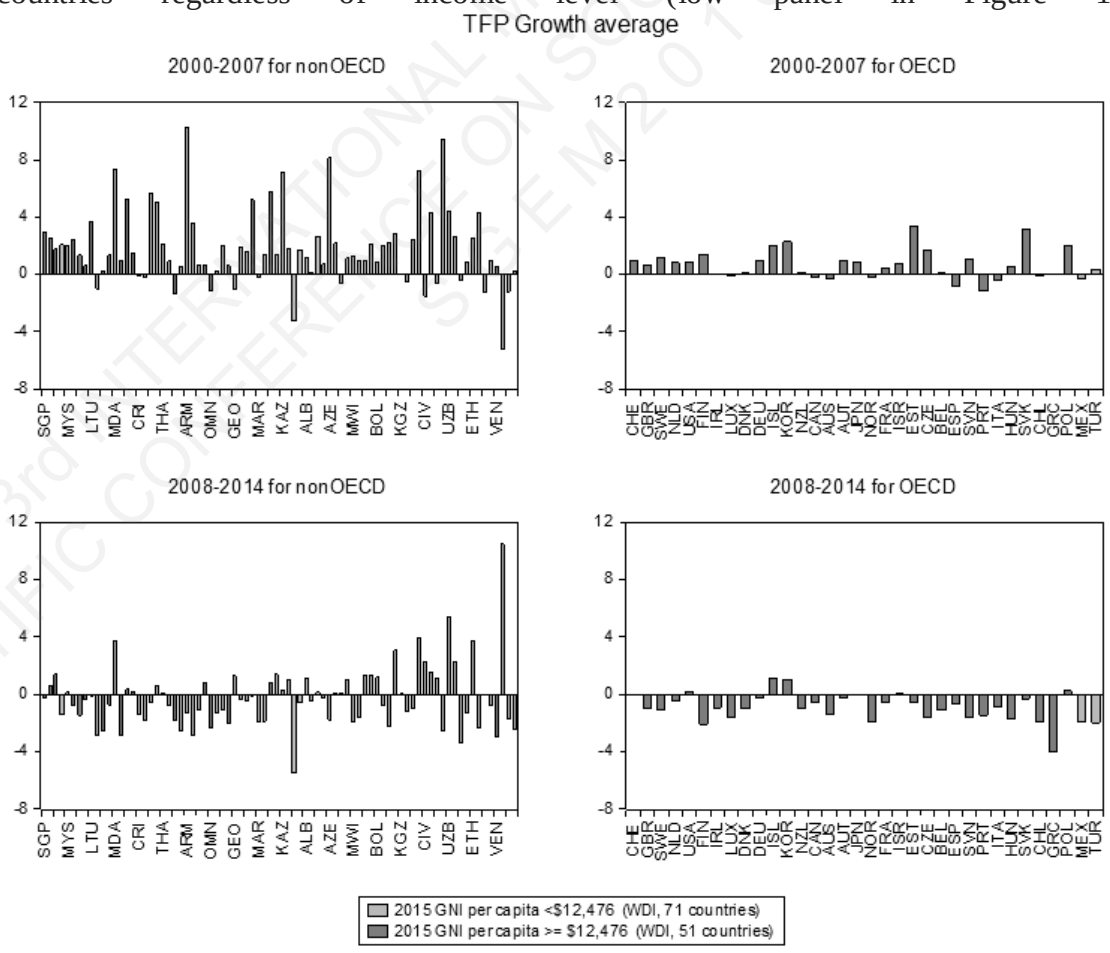
[1] The Conference Board. 2016. The Conference Board Total Economy Database™, May 2016, http://www.conference-board.org/data/economydatabase/

innovation system. Business involvement in the production of innovations is reflected by the factor Percentage of gross expenditure on R&D (GERD) financed by industry. Success in the commercialization of innovation and world-class technology development is described by a factor High-technology exports (% of manufactured exports). These are primary factors. Then we examine several indications of innovation policy. The measure of R&D tax generosity, the B-index [10], is used to estimate the impact of tax conditions of TFP growth. To account for the level of direct support of business R&D performance we introduce dummy variable Level of Direct government funding of R&D, which is equal to 1 for low level (less than 4%). We do not use such factors as R&D expenditure or average annual hours per worker as they are already taken into account in equation (1).

The OECD Science, Technology and R&D Statistics Database is the main source for indicators of innovation and innovation policy. The World Bank Database is the source for tertiary education enrollment.

EMPIRICAL RESULTS

The data that we plot in Figure 1 are the average total factor productivity growth for a country over 2000-2007 versus average annual growth rates over 2008-2014. The global crisis of 2007-2008 caused a significant decrease in TFP growth in many countries regardless of income level (low panel in Figure 1).



SCIENTIFIC CONFERENCE 3rd INTERNATIONAL MULTIDISCIPLINARY SCIENCE CONFERENCE SGEM2016 SCIENCE AND ARTS

Figure 1. The average of TFP growth over pre-crisis and post-crisis period for different groups of countries.

However, the average of TFP growth over post-crisis period is negative for the most of high-income OECD countries. The same is true for the global innovation leaders[2] (Figure 2). This suggests that the decline in demand caused by the crisis or the loss of the leading positions on the world market (case of Finland, for example) is an important factor for the productivity analysis. As TFP growth is measured from the supply side, period fixed effects in TFP growth models can capture the global changes in demand.

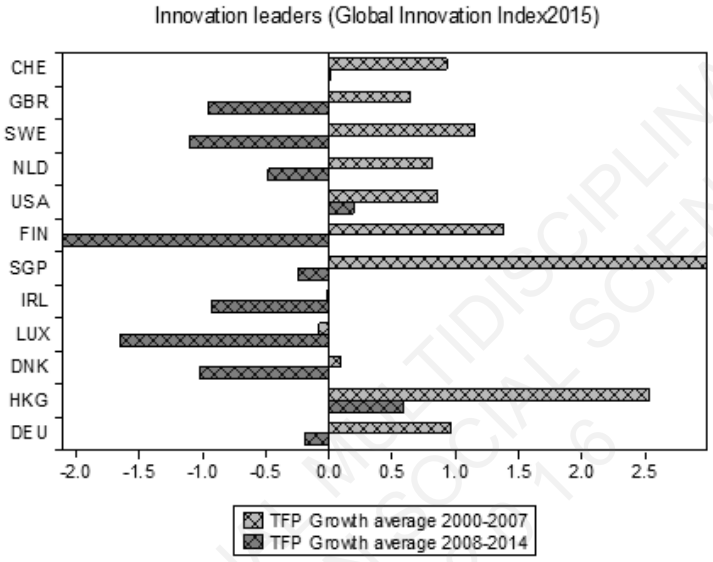


Figure 2. The average of TFP growth over pre-crisis and post-crisis period for innovation leaders

The model represented by equation (2) is estimated over the 1990-2014 period across various groups of countries. Table 1 represents the results of the estimation.

Foreign direct investment is not found to play a major role in boosting productivity in high-income OECD countries and low-income countries. The corresponding coefficients are insignificant (columns (1) and (4) in Table 1). But this is not the case for high-income non-OECD countries (which mainly are exporters of natural resources) and middle-income countries. Short-term elasticity for FDI is rather low (0.38 for high-income non-OECD countries and 0.45 for middle-income countries respectively), but long-term is considerably higher (0.49 and 0.56). It means the increase in 1% in FDI causes the increase in 0.5% in TFP in the long run for these countries controlling fixed effects.

Table 1. The estimated effect of knowledge spillover for TFP growth

	Dependent variable = ΔlnTFP			
	High Income OECD	High Income nonOECD	Middle Income	Low Income
	(1)	(2)	(3)	(4)

[2] Best performed countries according to the Global Innovation Index 2015

TFP growth $_{t-1}$	0.27*** (7.4)	0.23*** (4.3)	0.20*** (6.8)	0.11 (1.5)
FDI growth	0.08 (1.2)	0.38** (2.0)	0.45*** (3.5)	0.65 (1.3)
Constant	0.28*** (4.2)	0.68*** (3.7)	0.47*** (4.7)	0.9** (2.4)
Observations	662	344	1089	204
Adj R^2	0.45	0.26	0.28	0.02

*** p-value<0.01, p-value<0.05, * p-value<0.10.
Note: t-statistics in parentheses. The regressions include country and time fixed effects.

The model represented by equation (3) is estimated over the 1996-2013 period across the 17 OECD countries with well-developed national innovation systems. The results presented in Table 2 shows that major indicators of innovation are found to be important in explaining the TFP growth. The short-run effect of the internationally recognised patents is estimated to be around two[3]. The long-run effect is even larger.

Column 2 implies that R&D tax policy has no effect on TFP growth. At the same time the coefficient at the interaction term between business financed R&D and a dummy for a level of direct government support is estimated to be negative (although only weakly significant, column 3). This implies that government grant and subsidy schemes enhance the impact of business-funded R&D. However as it was shown in [11], tax incentives and direct support are complements rather than substitutes each other in boosting innovations.

Focusing on another innovation system indicator, a tertiary education enrollment we obtain the expected positive sign of the corresponding coefficient. But the estimated effect is small in the short-run and not substantially larger in the long-run.

We also examined other policy instruments such as intellectual property rights protection, but stronger patent rights do not appear to have a direct effect on TFP growth.

Table 2. The estimated effect of the national innovation system quality for TFP growth

	Dependent variable = ΔlnTFP			
	(1)	(2)	(3)	(4)
TFP growth$_{t-1}$	0.28*** (4.7)	0.28*** (4.7)	0.26*** (4.3)	0.25*** (4.0)
Patent Stock/Researchers$_{t-1}$	1.87** (2.0)	1.75* (1.84)	1.85* (1.9)	1.92* (1.93)
Percentage of GERD financed by industry $_{t-1}$	0.015* (1.96)	0.015* (1.74)	0.02** (2.4)	0.019** (2.3)
High-tech exports (% of manufactured exports)$_{t-1}$	0.02** (2.5)	0.022*** (2.6)	0.022*** (2.7)	0.022*** (2.7)
B-index$_{t-1}$		–0.06 (–0.1)		

[3] Across the specification presented in Table 2 Wald tests cannot reject that the short -run parameters at Patent Stock/Researchers equal two

(Level of Direct government funding of R&D)*(Percentage of GERD financed by industry) $_{t-1}$			–0.004* (–1.7)	
Change in tertiary education enrollment				0.07** (2.3)
Constant	–1.5*** (–3.6)	–1.5*** (–2.7)	–1.8*** (–4.1)	–1.8*** (–4.1)
Adj R^2	0.61	0.60	0.61	0.63
Observations	275	269	260	235

*** p-value<0.01, p-value<0.05, * p-value<0.10.

Note: t-statistics in parentheses. The regressions include time fixed effects. Country fixed effects are not significant.

The obtained results correspond to results in a number of past studies [4,6] although the TFP growth measure and period used in this study differ from the past studies.

CONCLUSION

The TFP growth is not equated with technological change but is affected by various factors. The range in average annual growth rates is large. There are many potential explanations for the different patterns of productivity growth across countries and across time, including differences in natural recourses, preferences, and economic policies. The results suggest that different channels for the diffusion of knowledge are of importance for different groups of the countries. The effect of foreign direct investment as a channel has proved to be significant for middle-income countries and countries exporters of natural resources. The effectiveness performance of the national innovation systems is responsible for most of the variation in TFP growth across post-industrial countries. However, some innovation specific policies such as R&D tax incentives or patent rights do not show a direct effect on aggregate productivity growth. Nevertheless, as their main objective is to encourage private sector innovation activity, an indirect impact of these tools can be reported.

ACKNOWLEDGEMENTS

The reported study was partially supported by RFBR, research project No 15-06-05146.

REFERENCES

[1] Solow R. M., Technical change and the aggregate production function, The review of Economics and Statistics, USA, pp 312-320, 1957.

[2] Kotsyubinsky V., Ponomarev Yu., Ponomareva E., Features of economic growth and its simulation, Moscow, Russia, 2013.

[3] Jorgenson D., Capital theory and investment, American economic review, USA, N 53(2), pp 247-259, 1963.

[4] Jorgenson D. W., Ho M. S., Samuels J. D., & Stiroh K. J., Industry origins of the American productivity resurgence, Economic Systems Research, USA, N 19(3), pp 229-252, 2007.

[5] de Vries K., Erumban A., Total Economy Database, USA, Sources and Methods, 2015.

[6] Jaumotte F. & Pain N., An Overview of Public Policies to Support Innovation, OECD Economics Department Working Paper No. 456, 2005.

[7] Westmore B., R&D, Patenting and Growth: The Role of Public Policy, OECD Economics Department Working Papers, No. 1047, OECD Publishing(2013).

[8] Keller W., International Technology Diffusion, NBER Working Paper # 8573, USA, 2001.

[9] Wooldridge J., Econometric Analysis of Cross Section and Panel Data, USA, 2002.

[10] Warda J., Measuring the Value of R&D Tax Treatments in OECD Countries. STI Review, No. 27, OECD: Paris, 2001.

[11] Balashova S., The impact of public R&D policy on business-funded R&D (case of OECD countries), Applied Econometrics, Russia, N 38(2), pp 64-82, 2015.

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM2016

3rd INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016

TWENTY-FIRST CENTURY GENERATION OF THE CLIMATE POTENTIAL FOR COASTAL TOURISM IN THE MEDITERRANEAN

Vito Telesca,

Donatella Caniani,

Stefania Calace,

Ignazio M. Mancini,

Lucia Marotta

School of Engineering – University of Basilicata, **Italy**

ABSTRACT

Climate is a primary resource for coastal tourism. It defines the length and quality of the tourist season and plays a key role in destination choices. The Mediterranean is both one of the most visited tourist destination and one of the most sensitive area to climate change worldwide. Increasingly, tourists are considering the weather of the day or week as well as other climate-related factors during the choice of holiday destination. Wind, humidity, air and water temperature, and cloud cover are few of the variables affecting visitors' decisions and satisfaction, and it is important as well for tourism businesses and tourism development in general. In this study, a stochastic weather generator and a neuro-fuzzy network was developed to generate precipitation and air temperature (max-mean-min) on a daily basis in particular for meteorological stations of coastal area in Basilicata (Southern Italy). Several simulations were carried out to build an optimal model, whose efficiency is evaluated with the RMSE (Root Mean Square Error) and the MAE (Mean Absolute Error), obtained comparing simulated and observed values. Subsequently, the developed neuro-fuzzy model was applied to generate other weather variables, such as relative humidity, solar radiation and wind velocity. The simulations showed the good performance of the neuro-fuzzy network in the data filling of the available series. The evaluation of the performance was made by comparing the values of RMSE and MAE obtained with the neuro-fuzzy method developed in this study and literature methods such as multiple linear regressions and trend line.

Keywords: Climate Change, Coastal Tourism, Weather Generators, Neuro-fuzzy network

1. INTRODUCTION

Weather forecasting, particularly for the case of daily precipitation occurrence and amount and daily air temperature, plays leading role in several fields, agriculture, industry because climate changes impact on human life and their projections are relevant for the definition of correct prediction strategies. In this context *weather generators (WGs)* and *soft computing techniques* (neuro-fuzzy network) and have found widespread application in meteorology and hydrology, in studies of climate variability or climate change and weather forecasting [1], [2], [3], [4]. In fact, the application of WGs may help to take decisions for planning tasks when available weather data is limited; according to them precipitation is a primary climate pattern that affects the rest of the variables. Thus, the first step consists of modelling daily precipitation; its generation requires a range of

models whose combination and configuration depend on the process and temporal and spatial scales involved: 1. empirical statistical models, based on stochastic models that are calibrated from actual data; these reproduce annual, monthly and daily precipitation data resembling actual data values. 2. models of dynamic meteorology that incorporate complex non-linear partial differential equations representing different physical processes and that are used for weather forecasting. 3. intermediate stochastic models that incorporate a limited number of parameters determined from actual data collected at short time intervals (for example hourly data) and which are used to represent complicated physical phenomena associated with storm precipitation, such as rain cells, rain bands and cell clusters. This study focuses on empirical statistical models [5] usually represent daily weather sequences, particularly on a type of two-part model for generating daily precipitation at a specific site (step 1. a model for generating wet and dry events; step 2. a model for assigning a precipitation amount to a wet day). Here, the performance of a new Daily Precipitation Stochastic Generator (DPSG) has been presented [4]. The calibration is made of 30 years (1961-1990) and 100 years are simulated. Furthermore, a neuro-fuzzy network is developed to generate air temperature (max-mean-min) on a daily basis. In scientific literature, weather forecasting using soft computing techniques, are divided into different aspects: 1. weather forecasting system using concept of soft computing with general indication about the topic, complete forecasting for near future not for singular variable considering different parameters which influence the process [2], [3], [6], [7]; 2. weather forecasting system using concept of soft computing for singular specific variable particularly for air temperature [8], [9], [11]; 3.weather forecasting system using concept of soft computing for minimum temperature of air because this parameter is the cause of important problems [12], [13], [14]. At first, the weather variables, (relative humidity, solar radiation and wind velocity) used as neuro-fuzzy network input, which influence the daily air temperature regime are selected considering atmospheric circulation model and climatic interactions between weather patterns [8]. Usually, the training period is made of 30 years (1961-1990) but in this work not all the four required variables for the model are available for the training years, so, for this problem the following years 2000-2002 and 2005-2006 are used for the calibration instead 2008-2009 are used for the validation of the model. Then, to evaluate the potentiality of the developed neuro-fuzzy network for data filling procedure, the year 2010, for which different missing spells are simulated, is used. At final, the performance of the built model is defined computing RMSE (Root Mean Square Error) and the correlation between expected values and simulated ones and MAE (Mean Absolute Error).

2. DATASET

Weather variables dataset available for agro-meteorological stations throughout the Basilicata Country is used thanks to ALSIA (Lucanian agency for agricultural development and innovation). Particularly, the models are validated for a time series (1959-2014) recorded at meteorological station in Policoro (MT) - Basilicata – Italy, chosen because of its availability dataset for Climatological analyses for the required minimum series length as suggested by WMO.

3. METHODS

In this work, a new Daily Precipitation Stochastic Generator (DPSG) based on a multivariate quasi-stationary and weakly depending stochastic process, has been presented. DPSG, based on different hypotheses [4], is made of two-part model for rainfall simulation which consists of the first-order Markov chain to simulate precipitation occurrence using parameters of two transitional probabilities from a wet day to a wet day p(w/w) and from a dry day to a wet day p(w/d), and a two-parameter Weibull probability function for non-zero amounts [4], [5]. Then, through the application of artificial intelligence techniques, neuro-fuzzy network is developed to daily air temperature to solve complex problems, that have no solution using traditional techniques, exploiting the logical mechanisms of the human brain, namely: acquisition of knowledge through experience; storing of the experience; application of this knowledge to solve problems. In particular, there are three types of artificial intelligence techniques as follows: Neural Network, Logic fuzzy, Genetic algorithms. The combination of the first and second type gives ANFIS (Adaptive Neuro-Fuzzy Inference System) [9], [10], [11], [12], [13], which behave as neural networks and express what happens inside them by means of fuzzy language so are extremely useful and beneficial systems and for this reason are used in this work. During the training, a large set of inputs is provided to the network and also the corresponding output, so that the network can have enough examples from which to derive the knowledge, namely the relationship between the two elements. After the training phase starts the testing phase which is able to value the skills acquired from the network. In fact, exclusively input values of a series of combined data different from those used in the training phase are supplied to this. For this phase, the period may be shorter than the training, and after entering the inputs within the network, this will generate the outputs. Validation phase consists in evaluating whether the error between known outputs and generated ones is acceptable.

4. APPLICATION OF DPGS TO DAILY PRECIPITATION

Initially, the quality control of precipitation series is made by homogeneity tests (Run Test); then, to evaluate the goodness of generated weather data a validation procedure has been developed. This consists of different graphical analysis evaluating the correspondence of historical and generated data (RMSE_MEAN=0,1292; RMSE_SD=0,5719), comparing monthly means and monthly standard deviation of precipitation occurrence. At this moment, the results, shown in Figure 1 obtained suggest the capability of the first-order Markov chain in reproducing monthly statistical patterns, particularly, occurrence of wet and dry days, which are required for operational purposes in engineering.

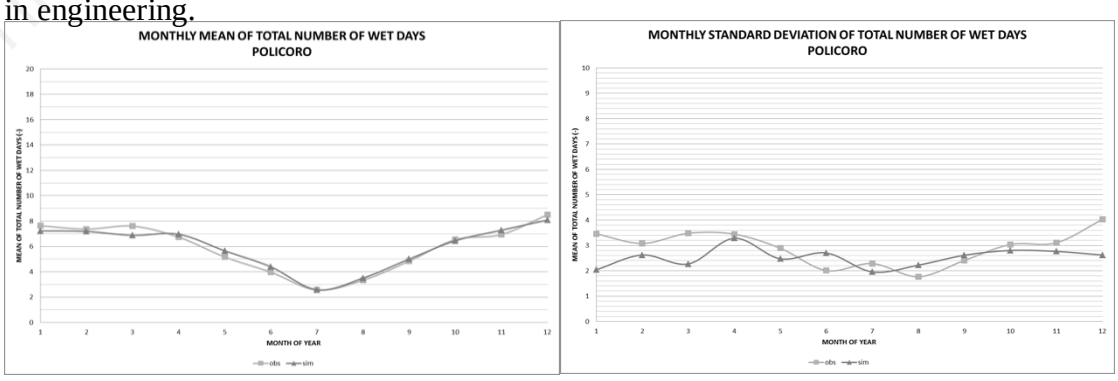


Figure 1 Comparison among monthly total number of wet days observed and simulated mean (left) and standard deviation (right)

5. APPLICATION OF NEURO-FUZZY TO AIR TEMPERATURE

At first, the analysis of climatic variables that can influence the temperature trend is carried out, and for this reason not one but rather four input variables are considered, as follows:
INPUT: Temperature (i), Relative Humidity (i), Solar Radiation (i), Wind speed (i)
OUTPUT: Temperature (i+1).
For this scheme of the neuro-fuzzy network, considering the need to have 4 available data series for 30 years (1961-1990), the possibility of missing data is very high. This has deflected the choice of the training period (2000-2002 and 2005-2006), and then validation (2008-2009). So, *genfis2* (using *radii*, a vector specifying the range of influence of the cluster center) Matlab function is run through a structure FIS Sugeno type using subtractive clustering demanding set of input data and output in a separate way. The main objective in the use of this specific function, has been to find the optimum combination of the values of radii in order to obtain the error as low as possible, thus providing the correct value of the temperature of the day i+1. Sensitivity analysis about the variable which has more weight in the neuro-fuzzy network allows changing the structure and thus focusing on specific variables rather than others. This information is also important in relation to research data, offering a direction to expand or reduce the used dataset. The optimal combination for the training of the network which includes mean temperature is the following: [mean temperature (i) relative humidity (i) solar radiation (i) wind velocity (i) mean temperature (i+1)] = [0,4; 1; 0,7; 0,7; 0,1]. This particular combination associates a high influence to the values of relative humidity in the first place, followed by the parameters of the solar radiation and wind speed. In the last place there is the temperature in the input and then output. Trained the network through the use of this combination, the validation is performed, which has obtained satisfactory results. In figure 2 it is possible to assess how, for example, the real mean temperature trend is reproduced by the neuro-fuzzy network with the simulated temperature. The little differences will be understood as a result of the definition of certain parameters.

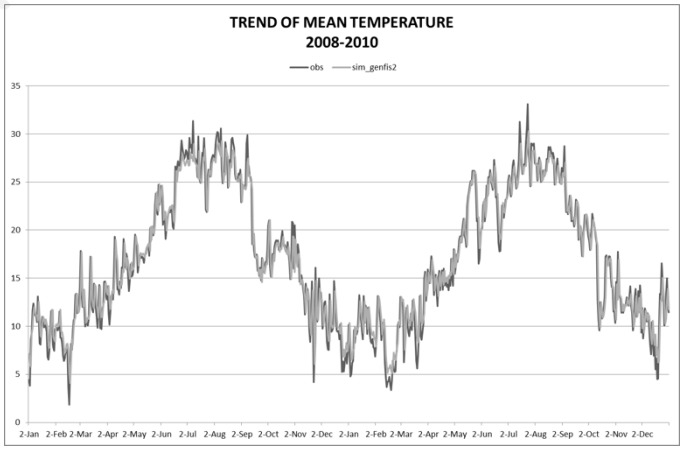


Figure 2 Real and simulated mean temperature trend for the 2008-2009

The same is made for maximum and minimum temperature. Then, to analyze and evaluate the efficiency of the network different parameters have been used RMSE, CORRELATION, MAE.

Table 1 Comparison among simulation of mean, minimum and maximum temperature

METHOD	MEAN	MINIMUM	L. REGRESSION
RMSE	1,6047	1,7534	2,3433
CORRELATION	0,9731	0,9606	0,9549
MAE	1,2365	1,3394	1,8239

The neuro-fuzzy network can not only provide the value of the temperature of the day i , but should also provide the future value of the other three variables related to that day constitute the inputs of the network. For instance, *forecasting network relative humidity* the optimal combination for the training of the network is as follows: [mean temperature (i) rel. humidity (i) solar radiation (i) wind velocity (i) relative humidity (i+1)] = [1; 0,85; 0,85; 0,4; 0,1]. The results are good, taking into account that it is percentage points (see Figure 3)

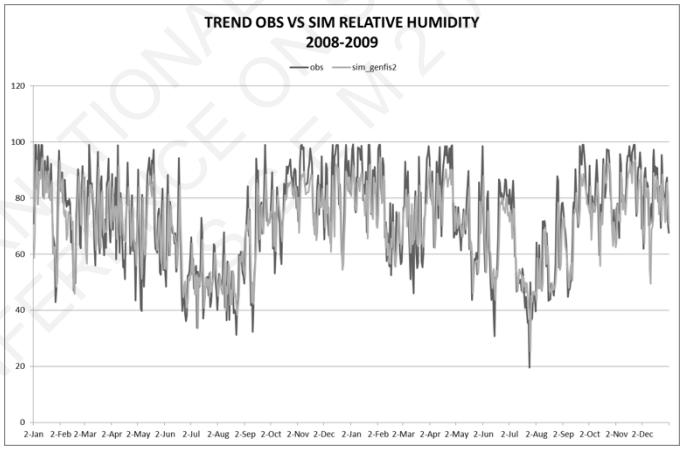


Figure 3 Trend of real and simulated relative humidity for the years 2008-2009

After the best network to predict others variables is put up, several simulations are run to apply the network for the data filling using different period of the filling. In fact, for short period the use of neuro-fuzzy network gives good results but when the simulation extends in time the errors become very high. So, in this case the validation of data filling is evaluated through a comparison among different data filling methods (trendline, linear regression) (CLIMATICA software vers. 1.5.1). To compare the network using linear regression, different trials are run to understand what are the variables which influence the temperature trend and can be used as independent values. The use of all variables, (DOY – RAIN - RAD - RHMEAN – WINDS) gives the best results as seen in figure 4.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS 3rd INTERNATIONAL MULTIDISCIPLINARY

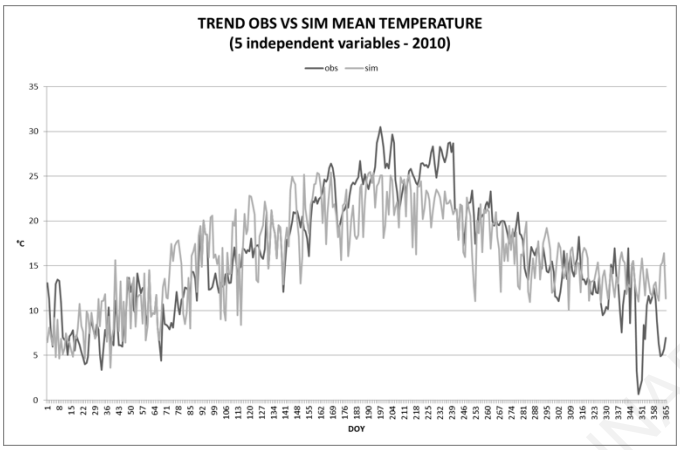


Figure 4 Trend of observed and simulated (by regression) mean temperature using 5 independent variables: DOY, RAIN, RAD, RHMEAN, WINDS for the year 2010

Completed the phase of linear regression use, the comparison of data filling results with neuro-fuzzy network, trendline is made considering void ranges like 3–5–7–10 days. For example, Figure 5 shows the results of interval of 3 days (period: 2010, December 11-13).

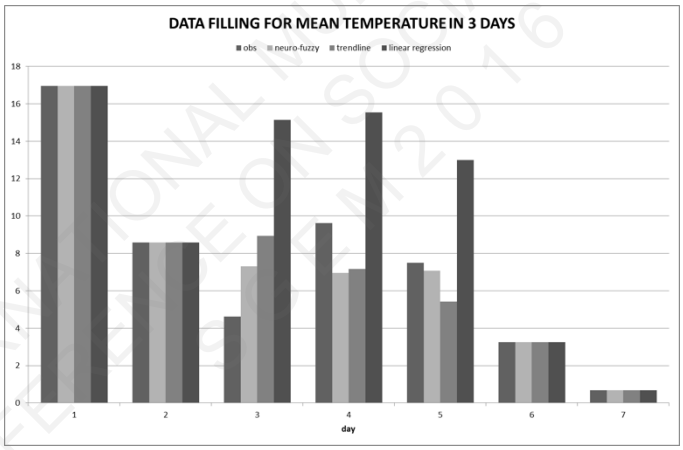


Figure 5 Comparison among different data filling systems for the mean temperature using a range of 3 days of the year 2010

So, it is possible to affirm that neuro-fuzzy network can be used to fill missing data inside annual series of temperature, infact among different tested models it returns the minimum error between observed and simulated data. But, this method has a time limitation because over 7 days period does not give optimum result comparing with others data filling techniques.

6. CONCLUSIONS

In this paper, a stochastic weather generator (DPSG) and a neuro-fuzzy network is developed to generate precipitation and air temperature (max-mean-min) on a daily basis in particular for meteorological station (Policoro) of coastal area in Basilicata (Southern Italy). The goodness of a weather models basically depends on the model structure itself,

on methods and algorithms applied for parameter estimation and on algorithms for data generation.

In this case all this parameters in DPSG demonstrate a good performance in reproducing monthly statistical patterns, particularly, the sequence of wet and dry days, which are required for many operational purposes in engineering. At this moment, the results obtained suggest the capability of the first-order Markov chain in reproducing precipitation occurrence for daily Mediterranean rainfall series. In fact, good Validation results obtained show that DPSG can be considered as available and accurate tool for the generation of meteorological data (precipitation at first) in Mediterranean climate. This means the basis of DPSG are robust to moderate climate changes in precipitation patterns in Mediterranean Region and this encourages to carry out future work to test the model at other sites in the same Region. Moreover, DPSG can be built up to provide synthetic series of primary weather data, such as minimum and maximum air temperature. Furthermore, a neuro-fuzzy network is designed from the need to predict the daily air temperature (mean - minimum - maximum) starting from known data. The main idea of this project is based on the search of a real structure of the network, which input must be provided, and what temporal link with the output is associated to the input. Soft computing systems gives more reliable results comparing them with traditional techniques, as regard this purpose. The strength of them is the ability of reasoning similar to that in humans. In particular, it has been used a neuro-fuzzy network, which develops its knowledge through the acquisition of numerous examples and, after identifying the report, albeit non-linear, or known by the designer, between input and output, it is capable of generating output starting from new input. The network allows the prediction of the temperature of the day i starting from the climatic parameters of the day i-1, the previous. These parameters are chosen through analysis of influence on the temperature and analysis of availability data, and they are: air temperature, relative humidity, solar radiation and the wind speed. The network is built through by Matlab software within 2000–2002 / 2005–2006 total years are considered for the training and 2008–2009 for the validation. This particular choice for the period is due to the necessity to have a training very large dataset to estimate a good relationship between input and output. Varying parameters inside to Matlab, it is possible to identify the optimal network for each kind of temperature which must be predicted (mean-min-max). The best network is found by computing different performance errors values between observed and simulated data (MAE, CORRELATION, RMSE). The MAE of final networks is respectively for mean - minimum – maximum temperature equal to 1,2–1,3–1,8 °C. In particular, from the building of the methods it is possible to associate a weight to the different element of the structure, as an influence factor; this result allows identifying the weight of different parameters on final result; so this, their selection is very accurate. Another important sector about climate forecasting, directly connected to a potentiality of built neuro-fuzzy network, is the problem of data filling. As known, it is fundamental for a climatological study the use of complete and available series. To see the power of the methods in data filling, a comparison with 2 traditional techniques (trendline, linear regression) is made using the software CLIMATICA. A running for the generation of missing data is carried out for different time period inside of year 2010. From this, it is clear there is a maximum temporal limit of 7 consecutive days under which neuro-fuzzy is the best method, instead above which the error can increase and the linear regression become the optimal technique for the data filling.

7. REFERENCES

[1] Rahul G. K., Khurana M., A Comparative Study Review of Soft Computing Approach in Weather Forecasting. International Journal of Soft Computing and Engineering (IJSCE), ISSN : 2231 – 2307, Volume 2, Issue 5, 2012.

[2] Sharma A., Manoria M., A weather forecasting system using concept of soft computing: a new approach. Advanced Computing and Communications, pages 353 -356, 2006.

[3] Sharma M., Lini M., Chatterji S., Weather forecasting using soft computing and statistical techniques. International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, Vol.3, Issue 7, 2014.

[4] Marotta L., Telesca V., 2013. A stochastic Weather Generator for daily climate variable analysis. IAHR Congress 2013 Tsinghua University Press, Beijing.

[5] Castellvì Sentis F., Mormeneo I.,Perez P.J., 2003. Generation of daily amounts of precipitation from standard climatic data: a case study for Argentina. Journal of Hydrology 289 (2004) 286–302.

[6] Tektaş M., Weather forecasting using ANFIS and ARIMA MODELS. A case study for Instanbul. Environmental Research, Engineering and Management, No. 1 (51), P. 5-10, 2010.

[7] Amanullah M., Khanaa V. K., Application of soft computing techniques in weather forecasting : ANN approach. Internation Journal of Advanced Research, Volume 2, Issue 1, 212 – 219, 2014.

[8] Al-Matarneh L., Sheta A., Bani-Ahmad S., Alshaer J. and Al – oqily I., Development of Temperature-based Weather Forecasting Models using Neural Networks and Fuzzy Logic. International Journal of Multimedia and Ubiquitous Engineering, Vol.9, No.12, pp. 343-366, 2014.

[9] Hayati M. and Mohebi Z., Application of Artificial Neural Networks for Temperature Forecasting. World Academy of Science, Engineering and Technology International Journal of Electrical, Computer, Electronics and Communication Engineering Vol : 1 No : 4, 2007.

[10] Lionello P., The Climate of the Mediterranean Region. From the Past to the Future. ELSEVIER, 2014.

[11] Dombayci Ö.A., Gölcü M., Daily means ambient temperature prediction using artificial neural network method : A case study of Turkey. Renewable Energy 34, 1158 – 1161, 2009.

[12] Sdao, F. , Lioi, D.S., Pascale, S., Caniani, D., Mancini, I.M., Landslide susceptibility assessment by using a neuro-fuzzy model: A case study in the Rupestrian heritage rich area of Matera. Natural Hazards and Earth System Science, Volume 13, Issue 2, 2013, Pages 395-407.

[13] Caniani, D. , Lioi, D.S., Mancini, I.M., Masi, S. , Application of fuzzy logic and sensitivity analysis for soil contamination hazard classification. Waste Management, Volume 31, Issue 3, March 2011, Pages 583-594.

VALENCES OF FINANCIAL COMMUNICATION IN A GLOBALIZED COMPETITIVE ENVIRONMENT

Assoc. Prof. Dr. Avram Costin Daniel [1]

Prof. Dr. Avram Veronel [1]

Prof. Dr. Avram Marioara[1]

Dr. Avram Alexandru [2]

[1] University of Craiova, **Romania**
[2] West University of Timişoara, **Romania**

ABSTRACT

Financial communication under the impact of market globalization is meant to ensure a constant flow of information, resulted in a dialogue of knowledge between issuers and actual and potential investors. Financial communication aims to increase awareness and credibility of the entity, to promote their global image in order to maintain the current investors as well as attract new investors. Financial communication seems to be a field of competitive confrontation in a globalized environment through which investors and other beneficiaries of financial information are connected to the realities of a market that is permanently changing. Under the impact of markets' globalization, financial communication gained homogeneity and took a form that is internationally standardized for financial reports, financial audit and assessments of movable and immovable property and financial products, while the rating agencies, though have not adopted international standards, succeed in providing consistent ratings. Ethical connotations of financial communication are proving really important in a globalized competitive environment in which cultural, historical, legal, religious or life quality related differences can sometimes seem insurmountable. These aspects are very important when we assess the effects of financial communication in terms of effectiveness, efficiency and economics of them

Keywords: financial communication, ethical connotations, investor, issuer, evaluation, competition

INTRODUCTION

The word „communication" derives from the Latin word *communicare* that means contact, connection, pooling, to mix or to merge. Human communication should be considered a process by which a person (communicator) conveys a message aiming to influence the attitude and behavior of other people (receivers). After being issued and received, the message belongs to both the man who spoke it and the one who received it, thus the human communication is a permanent exchange of ideas, emotions, and feelings, with the target to determine the listener to think or act in a certain way.

Communication, no matter the type, has three dimensions:

- Communication with third parties,
- Meta-communication, or what is meant beyond words,

- Intra-communication, meaning the communication within the same system.

In everyday activity we meet diverse communication styles: scientific, colloquial, solemn, journalistic and managerial. An effective communication requires positive message content transmitted and then received by the target – receiver.

RESEARCH METHODOLOGY

Our research was based on documentation provided by the literature consulted and the scientific approach as a whole has combined quantitative with qualitative research. Empirical research used the questionnaire to collect data on the ways in which some economic entities with import-export activity achieved the communication process. Our questionnaire was sent to a total of 215 entities, and received a number of 72 responses, representing a response rate of 33%.

POSITIONING OF FINANCIAL COMMUNICATION IN THE GLOBAL COMMUNICATION SYSTEM OF ENTITY

Financial communication occurs as a component of the Public Relations department and is focused on present and potential shareholders and investors. The purpose of this form of communication, for companies listed on the stock exchange, is to maintain and strengthen their position on the stock market and enhance the interests of shareholders and investors for shares traded on a standardized market. More specifically, financial communication aims to promote the company's global image on financial markets. Financial communication is integrated into the global communication system of entity, being differentiated due to the technical, rigorous and standardized character it has.

In Romania, public relations have emerged as a new field of activity, the first studies in the domain being made after 1990, following the opening of the Romanian economy toward the European markets due to the process of globalization. The importance of this field was synthesized in works that identified the methods to approach "public relations"[1]. In order to ensure stability, but especially its development, each economic entity, regardless of their field of work, needs to transmit and receive messages on several distinct lines of communication. Financial communication integrates the entity's global communication system, presented in Table 1.

Table 1: The place of financial communication in the global communication system

Nr.	TYPE OF COMMUNICATION	THE MESSAGES TARGET	MISSION, OBJECTIVE
1	Commercial	Suppliers, customers	Building the confidence in the soundness of entity
2	Internal	Staff, collaborators	Building motivation and loyalty
3	Institutional	Public opinion, civil society	The formation of an opinion current in favour of entity's development
4	Financial	Investors, the capital market, supervisory bodies, rating agencies	Increasing the market value, strengthening the financial position

Source: own processing

The four types of communication presented in the table are in interdependence, but the coherence of messages transmitted should be monitored by a specialized department to avoid sending contradictory messages. Investors and other categories of stakeholders take their information regarding the organization's activity from several sources: media, stock exchange market, financial statements, and directly from the source etc[2]. In other words, financial communication is not just about publishing the annual report (financial statements), but it holds a reference position in the process, by the means of highly relevant and important information disseminated on this occasion.

Financial communication is regarded as the "respiratory system" that ensures "the exchange of oxygen" with the economic environment[3]. Entity's financial communication is based on three pillars:

- *financial transparency, market discipline and continuity of the activities;*
- *compliance with International Financial Reporting Standards, European Directives and national accounting referential;*
- *qualitative and quantitative growth of financial information.*

Although financial communication is a step towards the external environment of the entity, its organization is an internal matter. The problem of organizing financial communication is based on establishing financial communication's strategy. In the elaboration of financial communication strategy, the following objectives are followed:

- specialization of personnel responsible for the communication;
- limiting the number of spokesmen specialized in financial communication;
- establishing firm control over the financial information disseminated;
- dissemination of a speech "with a single voice", i.e. a unitary, coherent and consistent discourse.

EMPIRICAL STUDY ON THE MEANS OF COMMUNICATION

We intend to make an empirical study on how economic entities involved in import-export activity, within and outside E.U., achieve their communication activity. We consider that such entities can provide a relevant image in terms of communication in a globalized competitive environment.

We sent our questionnaire to a total of 215 entities in various fields and received a number of 76 responses, representing a response rate of 35%.

Questions have targeted a number of issues related to the entity's manner of communication with the external environment, such as:

- Buying advertising space,
- Communication with shareholders,
- systematic communication with the media,
- monitoring the information on the entity published in the press,
- PR activities,

- participation in scientific activities,
- Involvement in social and cultural - sports activities or sponsorships.

The basic idea is that a good financial communication is not just about compliance with International Financial Reporting Standards (IFRS) and the timely transmission of reports periodically, but primarily an active presence in the public consciousness.

In our opinion two forms of financial communication can be identified, respectively:

- Regulated financial statement, whose format is predetermined by laws, regulations and guidelines, with a clear structure, with precise deadlines, made by professionals for professionals, regulated by international standards and consistent national referential[4];
- Discretionary financial communication in which the entity decides what it wants to communicate, the timing, the target audience and last but not least the budget allocated. It is a form of communication that unleashes the organizational creativity and which can be consistent with the marketing strategy adopted by entity[5].

Through the set of questions regarding the means of communication used by entities with foreign trade activity we obtained relevant answers.

To question no. 1 *Has your entity bought advertising space*? , the results are presented in Table 2.

Table 2 Buying advertising space

	%
Yes, in international publications	6
Yes, in central national publications	32
Yes, in local publications	21
No	41
TOTAL	100

Source: Own processing

According to the poll only 6% of respondents are concerned about the image created internationally by buying advertising space in international publications, which is worrying for entities with foreign trade activity. The large number of negative responses, i.e. 41%, is shocking.

The results obtained to question no.2 *Does your unit have commercials on TV*? are summarized in Table 3.

Table 3 TV commercials

	%
Yes	21
No	79
TOTAL	100

Source: Own processing

An alarming 21% of respondents have sensed the need and effectiveness of using advertising spots on television channels with a high rating and said yes, while 79% of companies surveyed do not use these communication techniques.

The answers, obtained after capitalizing on questionnaires, to question no. 3, *Does your entity send letters to shareholders*?, are reflected in Table 4.

Table 4 Sending letters to shareholders

	%
No	44
Just for an extraordinary General Shareholder Meeting	19
Hardly ever	25
Frequently	12
Total	100

Source: Own processing

It can be observed that 44% of the entities' representatives do not submit letters to shareholders and 56% practice this way of communication in the following manner: frequently 12%, hardly ever 25% and for an extraordinary General Shareholders Meeting 19%.

Responses to question no. 4, *Does your entity have regular contacts with the media?*, are presented suggestively in Table 5.

Table 5 Regular contacts with the media

	%
No	46
Yes, we present press releases	33
Yes, we organize press conferences	21
TOTAL	100

Source: Own processing

As can be seen following analysis data in the table, 46% of entities who responded to our survey have no contact with the media, while 54% have regular contacts with the media either by sending press releases - 33% or organizing press conferences - 21%. Both ways of communication are designed to make known through the press the actions and achievements of the economic entity.

The results obtained after processing answers to question no. 5, *Do you monitor the information published in the press regarding your entity*?, are centralized in Table 6.

Table 6 Monitoring information published in the press

	%
No	35
Yes, through the press office	16
Yes, we exercise our right of reply	12
Yes, we classify information into positive, negative and neutral and decide accordingly	37
TOTAL	100

Source: Own processing

As can be seen 65% of respondents monitor the information appeared in the press about the entity and this is even analyzed, processed, classified and used for decision making (37%), but 35% of economic entities are not concerned with monitoring the information appeared in the press about the current business and prospects of the entity concerned.

The results of responses to question no. 6, *Does your entity conduct public relations*? , were processed in Table 7.

Table 7 Public relations activities

	%
No	18
Yes, visits organized with the occasion of *Open Doors Day*	29
Yes, promotional activities	22
Yes, we have signed practice protocols for students and pupils	31
TOTAL	100

Source: Own processing

Regarding the operations carried out in public relations, it is observed that only 18% of respondents have no concerns on the line of public relations while 82% of the economic entities surveyed give importance in one form or another to the interaction with the ambient environment of organization. It is encouraging that one in three of those polled had signed practice protocols with education providers with mutual benefits: the organization gets known and can participate directly in public education while pupils and students get in contact with the business environment.

Processed results for the question no. 7, Does your entity participate in scientific, research and development activities? , are presented in Table 8.

Table 8 Participation in scientific and research activities

	%
No	52
Yes, colloquia, workshops	23
Yes, conferences	11
Yes, international congresses	8
Yes, we have a research and development department	6
TOTAL	100

Source: Own processing

The responses provided suggest a low concern of the entities included in the sample for scientific work and research and development activities so that communication of research results and participation in conferences, congresses and seminars is also modest.

Investigating whether *Is the entity engaged in social, cultural - sports activities and sponsorships*?, were obtained the results reflected in Table 9.

Table 9 Involvement in social, cultural - sports activities and sponsorships

	%
No	58
Yes, we offer scholarships	7
Yes, corporate patronage, sponsorship	11
Yes, we have cultural sports partnerships	24
TOTAL	100

Source: Own processing

The survey results reveal a low involvement of the entities investigated in social, cultural -sports activities and sponsorships, which shows on the one hand a low social responsibility and on the other hand the recognition of consequences related to the lack of legal tax incentives for organizations that engage in patronage activities.

CONCLUSION

Financial communication is intended to present an accurate image of the patrimonial position, activity and performance of an individual entity or group of entities regardless of ownership structure, either indigenous or foreign. Good financial communication has the effect of gaining the trust of general public, investors, business and competitive environment as well as that of the regulatory and supervisory authorities.

We distinguish two forms of financial communication:

- regulatory financial communication and
- discretionary financial communication.

Regulatory financial communication must answer one problem which arises in terms of the minimum information that must be included in the synthesis documents, bearing in mind that the message the issuer sends to the recipient requires no special skills of decoding, since both issuer and recipient are professionals. A discussion occurs about investors, but we must not forget that there are institutionalized, sophisticated investors benefiting from services of specialists in finance. Application of International Financial Reporting Standards (IFRS) by a growing number of users increases the efficiency of financial communication through the existence of a globalized financial language, which is in fact the result of a process of convergence between the various accounting systems and development of new standards applied in all countries.

International reference system has established a regulatory framework which aims at providing the financial information necessary to users to know and understand the financial position of the entity, its performance, profitability and effectiveness of activity, the changes in its cash flows and changes in the structure of equity during the financial year.

Discretionary-financial communication brings up the possibility to capitalize on the entity's creative potential, which, in the absence of standards and constraints, provides the opportunity to realize and make known its own image, while respecting the rules of business ethics.

A series of aspects have resulted from the empirical study conducted on means of discretionary financial communication, among which we mention the most relevant:

- Poor concern for their own image abroad proven by not buying advertising space;
- Poor representation on TV channels through commercials;
- Sporadic contact with shareholders through letters;
- There are no stable contacts with the press/media;
- Entities perform the monitoring of information published in the press, but only 12% exercise their right of reply;
- Entities pay attention to the interaction with the surrounding environment;
- A significant percentage of respondents pay attention to partnership with education providers;
- Poor concern of business entities for scientific research and development;

Low involvement of the entities investigated in social, sports - cultural activities and sponsorships.

REFERENCES

[1] Coman C., Public Relations. Principles and Strategies, Polirom, Romania, 2001, p. 13;

[2] Leger J.Y., La communication financiere, Dunod, Paris, 2008, p 145;

[3] Domnişoru S, Audit statutar şi comunicare financiară, Ed. Economică, Bucureşti, 2011, p 35;

[4] Avram V., Avram C.D., Gestiune contabilitate si audit bancar, Universitaria, Romania, 2010, pp 197-2015;

[5] Avram A., Avram C.D., Avram V., Research and development expenditures between discretionary costs and source for economic growth - Romanian Journal of Economics, Vol.39, 2014, pp 49-66.

SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS SGEM 2016