

CONTENTS

| | |
|--|-----------|
| IT-RELATED USAGE OF CYRILLIC SCRIPT – A STUDY CARRIED OUT AT THE ICT COLLEGE OF APPLIED STUDIES, BELGRADE | 1 |
| Gordana Jelić Danica Mamula Tartalja Zorica Mihajlović | |
| ECONOMIC MIGRATION AND LABOUR TRAFFICKING FROM BULGARIA..... | 7 |
| Georgi Petrunov | |
| BIODIVERSITY CONSERVATION AND AGRICULTURAL TERRACES: A CASE STUDY ON THE ISLAND OF KYTHIRA (GREECE) | 13 |
| Alexandra Solomou | |
| URBAN AND ARCHITECTURAL PERFORMANCES IN THE FUNCTION OF DEFINING OF STRATEGY OF SUSTAINABLE DEVELOPMENT OF TOURIST DESTINATION | 19 |
| Spasoje Tuševljak Miodrag Simović Vladimir Simović Ivan Tuševljak | |
| A SYSTEMIC APPROACH TO THE MANAGEMENT OF MUSEUM HERITAGE: THE CASE OF BASILICATA REGION MUSEUM POLE (ITALY)..... | 27 |
| Sonia Ferrari Nicolaia Iaffaldano Vito Roberto Santamato | |
| THE EVOLUTION OF THE ROMANIAN PASTRY. TRADITIONS, EUROPEAN INFLUENCES, NEW TRENDS..... | 35 |
| Adina Săcara-Onița Andra-Teodora Porumb Ciprian Beniamin Benea | |
| HEAVY METAL ACCUMULATION AND CHEMICAL COMPOSITION OF ESSENTIAL OILS OF SALVIA OFFICINALIS CULTIVATED ON HEAVY METAL CONTAMINATED SOILS..... | 45 |
| Violina Angelova | |
| SCALING BLOCKCHAIN FOR AGRICULTURAL SECTOR: THE AGRIDIGITAL CASE | 55 |
| Roberto Mavilia Roberta Pisani | |
| IDENTIFICATION OF THE SPORTS PREDISPOSITION AS A SOCIAL RISK MANAGEMENT ELEMENT | 61 |
| Elena Fefilova Natalia Pazdnikova Yuliya Karpovich | |
| IMPLEMENTATION OF QUALITY CONTROL ON SOIL SAMPLING | 67 |
| Zorica Sovrlić Daniela Urošević Ivan Svrkota | |
| SEARCHING FOR THE MANAGERIAL IMPLICATIONS IN ITALIAN AUTONOMOUS MUSEUM. WHAT ARE THE PERSPECTIVES AND BARRIERS? | 73 |
| Marianna Marzano Monia Castellini | |
| ADEQUACY OF THE AMOUNT OF OWN RESOURCES OF FOOD ACCOUNTING ENTITIES IN 2018 IN SLOVAKIA..... | 85 |
| Katarína Tasáryová Renáta Pakšiová | |

| | |
|---|------------|
| THE INFLUENCE OF THE GEOGRAPHICAL AREA ON WINE PRODUCTS. A CASE STUDY | 93 |
| Camelia Slave | |
| NATURAL PROTECTED AREAS FROM ROMANIA. A CASE STUDY OF DANUBE DELTA | 101 |
| Camelia Slave | |
| INNOVATION AND AGGREGATION: A GOVERNANCE MODEL TO SUSTAIN COMPETITIVENESS OF WINE COMPANY IN SOUTH ITALY | 109 |
| Nicolaia Iaffaldano | |
| Andrea Sestino | |
| THE LEADER OF THE NEW GENERATION: HUMBLE, CONNECTOR AND CONSCIOUS. | 117 |
| Marius Calin Benea | |
| IMPACT OF CONSOLIDATION PROCEDURES ON THE IMPLEMENTATION OF THE INFORMATION ACCOUNTING FUNCTION | 125 |
| Artur Jastrzebowski | |
| Zofia Wierzbinska | |
| Marek Wierzbinski | |
| MANAGEMENT OF INFORMATION IN ECONOMIC DIPLOMACY | 135 |
| Marek Csabay | |
| WORLD BANK IN THE WORLD'S ECONOMY | 143 |
| Irena Andreeska | |
| SILICON SAVANNAH – INNOVATION ECOSYSTEMS OF AFRICA WITH A SPECIAL REGARD TO KENYA | 149 |
| Szabolcs Szolnoki | |
| Árpád Papp-Váry | |
| APPLICATION OF NEW INFORMATION AND TELECOMMUNICATION TECHNOLOGIES IN RUSSIAN EDUCATIONAL MANAGEMENT | 155 |
| Evgeniya Yazovskikh | |
| Oksana Yatsenko | |
| COMMUNICATION WITH CUSTOMERS THROUGH SOCIAL NETWORKS – EVIDENCE FROM THE REPUBLIC OF CROATIA. | 159 |
| Višnja Bartolović | |
| Maja Validžić | |
| PMO APPROACH IN CHOOSING THE OPTIMAL PROJECT GOVERNANCE FRAMEWORK FOR CONTRACTED ENGAGEMENT MODEL | 171 |
| Srđan Atanasijević | |
| Tatjana Atanasijević | |
| Monika Zahar | |
| BEST PRACTICES FOR PEOPLE WITH DISABILITIES ADOPTED IN ITALIAN NATIONAL PARKS. | 179 |
| Giulio Mario Cappelletti | |
| Alfredo Ernesto Di Noia | |
| Giuseppe Martino Nicoletti | |
| INTERCULTURAL TRENDS IN TOURISM OF THE MONTENEGRIN COAST | 187 |
| Maria Popovic | |
| Dijana Medenica Mitrovic | |
| LIMITATIONS OF INTERCULTURAL MANAGEMENT IN THE DEVELOPMENT OF TRADE RELATIONS BETWEEN COUNTRIES | 197 |
| Dalibor Misirača | |
| Dragan Gnjatić | |

| | |
|---|------------|
| BLOCKCHAIN TECHNOLOGY APPLICATION AREAS IN THE SMART CITY INFORMATION SYSTEMS | 209 |
| Zoran Ćirić | |
| Otilija Sedlak | |
| Stojan Ivanišević | |
| ORGANIC AGRICULTURE IN THE DEVELOPMENT OF A GREEN ECONOMY..... | 215 |
| Larisa Jovanovic | |
| Dragan Živković | |
| Mario Lukinovic | |
| Milan Jankovic | |
| THE IMPACT OF GLOBALIZATION ON THE DIGITAL ECONOMY IN BULGARIA..... | 229 |
| Maria Kicheva | |
| Nadezhda Petkova | |
| THE SUBURBANIZATION PROCESS AND QUALITY OF LIFE | 235 |
| Aleksander Ostenda | |
| Tetyana Nestorenko | |
| Iryna Yemchenko | |
| WHAT DRIVES THE BELIEFS IN BITCOIN? – SURVEY RESULTS..... | 241 |
| Zuzana Rakovská | |
| HEALTH MANAGEMENT IN THE 21ST CENTRY | 249 |
| Zdravko Petković | |
| Zdravka Petković | |
| Tijana Milanović | |
| THEORETICAL AND PRACTICAL CONSIDERATIONS REGARDING THE CONTESTING PROCEDURE IN THE FIELD OF PUBLIC PROCUREMENT | 255 |
| Diana Gorun | |

INDEX OF AUTHORS

| A | I | R |
|---------------------------------|------------------------------|----------------------------|
| Adina Săcara-Onița, 35 | Irena Andreeska, 143 | Renáta Pakšiová, 85 |
| Aleksander Ostenda, 235 | Iryna Yemchenko, 235 | Roberta Pisani, 55 |
| Alexandra Solomou, 13 | Ivan Svrkota, 67 | Roberto Mavilia, 55 |
| Alfredo Ernesto Di Noia, 179 | Ivan Tuševljak, 19 | |
| Andra-Teodora Porumb, 35 | | S |
| Andrea Sestino, 109 | K | Sonia Ferrari, 27 |
| Árpád Papp-Váry, 149 | Katarína Tasáryová, 85 | Spasoje Tuševljak, 19 |
| Artur Jastrzebowski, 125 | | Srđan Atanasijević, 171 |
| | L | Stojan Ivanišević, 209 |
| C | Larisa Jovanovic, 215 | Szabolcs Szolnoki, 149 |
| Camelia Slave, 93 | | |
| Camelia Slave, 101 | M | T |
| Ciprian Beniamin Benea, 35 | Maja Validžić, 159 | Tatjana Atanasijević, 171 |
| | Marek Csabay, 135 | Tetyana Nestorenko, 235 |
| D | Marek Wierzbinski, 125 | Tijana Milanović, 249 |
| Dalibor Misirača, 197 | Maria Kicheva, 229 | |
| Danica Mamula Tartalja, 1 | Marianna Marzano, 73 | V |
| Daniela Urošević, 67 | Maria Popovic, 187 | Violina Angelova, 45 |
| Diana Gorun, 255 | Mario Lukinovic, 215 | Višnja Bartolović, 159 |
| Dijana Medenica Mitrovic, 187 | Marius Calin Benea, 117 | Vito Roberto Santamato, 27 |
| Dragan Gnjatić, 197 | Milan Jankovic, 215 | Vladimir Simović, 19 |
| Dragan Živković, 215 | Miodrag Simović, 19 | |
| | Monia Castellini, 73 | Y |
| E | Monika Zahar, 171 | Yuliya Karpovich, 61 |
| Elena Fefilova, 61 | | Z |
| Evgeniya Yazovskikh, 155 | A | Zdravka Petković, 249 |
| | Nadezhda Petkova, 229 | Zdravko Petković, 249 |
| G | Natalia Pazdnikova, 61 | Zofia Wierzbinska, 125 |
| Georgi Petrunov, 7 | Nicolaia Iaffaldano, 27, 109 | Zoran Ćirić, 209 |
| Giulio Mario Cappelletti, 179 | | Zorica Mihajlović, 1 |
| Giuseppe Martino Nicoletti, 179 | O | Zorica Sovrlić, 67 |
| Gordana Jelić, 1 | Oksana Yatsenko, 155 | Zuzana Rakovská, 241 |
| | Otilija Sedlak, 209 | |

INDEX

A

Accessibility, 179
Accounting, 73
Advertising Strategy, 35
African Startups, 149
Aggregation and Innovation, 109
Agricultural Sector, 55
Agroecology, 215
Agrotourism, 13
Architecture, 19
Award Procedure, 255

B

Bakery Field, 35
Blank Samples, 67
Blockchain, 209
Blockchain, 55
Brand, 35
Bulgaria, 229

C

Capital, 85
Competitiveness, 109
Consolidation, 125
Contaminated Soils, 45
Contestation, 255
Convention, 101
Crime, 7
Cryptocurrencies, 241
Culture, 187
Customer Relationships, 109
Customers, 159
Cyrillic Script, 1

D

Danube Delta, 101
Developed Countries, 143
Development, 19
Digital Economy, 229
Disabilities, 179

E

Economic Diplomacy, 135
Economic disparities, 7
Economic Expectations, 241

Economic Growth, 143
Educational Management, 155
Environment, 13
Equity, 85
Essential Oil Composition, 45
Ethics, 249
European Union, 215
Exploitation, 7

F

Fauna, 13
Feasibility Study, 209
Field of IT, 1
Financial Statement, 125
Financial Transactions, 143
Flora, 13
Food Safety, 35

G

Geographical Information Systems (GIS), 93
Globalization, 197, 229
Golden Rule of Financing, 85
Green Economy, 215

H

Habitat, 101
Health Organization, 249
Health Risks, 61
Health, 249
Heavy Metals, 45
Humility, 117

I

ICT College, 1
Information Accounting Function, 125
Information Processes, 135
Information Systems, 209
Information Technologies, 155
Innovation Management, 55
Innovation, 149, 229
Institutions, 19
Intercultural, 197
Interculturalism, 187

International Monetary Fund, 143
Italian Museums, 73

K

Kenya, 149

L

Leadership, 117
Learning, 117
Legitimate Interest, 255
Longitudinal Survey, 241

M

Management in Health, 249
Management, 73, 135, 197, 249
Maps, 93, 101
Mediterranean, 13
Museum Network, 27
Museum System, 27

N

National Council for Solving Complaints, 255
Natural Parks, 179
Non-Current Assets Long-Term Liabilities, 85

O

Offer, 255
Organic Agriculture, 215
Organic Farming, 215
Organizational Identity, 35
Ownership, 19

P

Performance Management Framework, 171
Performance, 73
Production, 93
Project Governance, 171
Project Management Office, 171
Project Management, 171
Project Related KPI, 171

Protected Area, 101
Protected Natural Area, 179
Protection, 13

Q

Quality Control, 67
Quality of Life, 235

R

Republic of Serbia, 215
Retail Chains, 159
Right, 255
Risk Management, 61

S

Salvia Officinalis, 45
Sentiment, 241
Smart City, 209
Social Networks, 159
Software Engineering
Engagement Models, 171

Soil Sampling, 67
Spatial Planning, 19
Sports Orientation, 61
Sports Selection, 61
Startup Savannah, 149
Suburbanization, 235
Sustainable Rural
Development, 215
Systematic Approach, 27

T

Telecommunication
Technologies, 155
Tourism, 187
Trade, 197

U

Urban Sprawl, 235

V

Viticulture, 93

W

Web Site, 35
Web-Quest, 155
World Bank, 143

IT-RELATED USAGE OF CYRILLIC SCRIPT – A STUDY CARRIED OUT AT THE ICT COLLEGE OF APPLIED STUDIES, BELGRADE

Gordana Jelić¹ 
Danica Mamula Tartalja² 
Zorica Mihajlović³ 

DOI:

Abstract: *Given that the English language and Latin script are a 'mother tongue' in the field of Internet technologies, there is an issue in Serbia concerning the use of Cyrillic script when it comes to teaching and learning processes in this professional community. This paper presents the results of a study carried out at the ICT College of Applied Studies in Belgrade on the usage of Cyrillic script by students majoring in Internet technologies study program. The research sample comprised students' examination papers selected from courses taught by professors who use Cyrillic script in all segments of teaching. Out of 652 students' papers, the usage of Cyrillic script accounted for 59%. This could be regarded as a remarkable outcome having in mind the predominance of English Latin script in the IT sector. To achieve even better results, the teachers at all levels of education should use Cyrillic script.*

Keywords: *Field of IT, ICT College, Cyrillic Script*

1. INTRODUCTION

The issue of the usage of Cyrillic script is a topic constantly open for discussion in our society. Pursuant to the Constitution of the Republic of Serbia, which was proclaimed on November 8th 2006, “the Republic of Serbia is a state of the Serbian people and all its citizens...” (Article 1 of the Constitution). Additionally, “the Serbian language and Cyrillic script shall be in official use in the Republic of Serbia...” (Article 10 of the Constitution). Despite these definitions of Cyrillic script and the Serbian language included in the Constitution, we have been witnessing that Latin script has been predominant in Serbian daily life.

Bearing in mind the prevalence of Latin script, we may notice that there are some initiatives by individuals and organizations aimed at changing the current situation in order to return to our original, i.e. Serbian Cyrillic script. We should mention the Association for defending the Cyrillic alphabet “*Dobrica Erić*”, whose Statute was adopted on January 18th 2011, as well as the “Cherish the Serbian Language” campaign, which has a broader context than the Cyrillic alphabet itself, but at the same time, it also propagates Cyrillic script. This campaign, launched on April 8th 2015, was organized by the Secretariat for Culture of the City of Belgrade, the Faculty of Philology in Belgrade and Belgrade City Library. Many celebrities from the world of sport and culture have been engaged in this campaign to highlight various messages written in Cyrillic on the posters. We also need to underline the Draft of the Cultural Development Strategy, presented by the Minister of Culture and Information, Vladan Vukosavljević, on RTS (Radio Television of Serbia), on June 10th 2017. The Strategy should provide various incentives for the usage of Cyrillic script.

¹ ICT College of Applied Studies, Zdravka Čelara 16, 11000 Belgrade, Serbia

² ICT College of Applied Studies, Zdravka Čelara 16, 11000 Belgrade, Serbia

³ ICT College of Applied Studies, Zdravka Čelara 16, 11000 Belgrade, Serbia

In this paper, we addressed the issue of the Cyrillic script usage in a special community of individuals, which has been extremely under the pressure of using Latin script, that is in the context of education at the level of colleges of applied studies in the field of information technologies (IT). More specifically, we examined the students of the state ICT College of Applied Studies (ICT College).

The Serbian language, with its corresponding Cyrillic script, is a mother tongue of most students of the ICT College. On the other hand, the path of education that these students acquire at this college is focused distinctively otherwise. In the field of IT, the “mother tongue” of the profession is English (i.e. U.S. English version), with its corresponding Latin script.

Having regard to all of the foregoing, the aim of this study was to determine, by applying quantitative and objective methods, how many of our students examined in the selected sample use Cyrillic script in the educational process at the College, in spite of all their professional orientations. A limited survey was conducted and the first results have been presented herein. This research was inspired, inter alia, by the recently published “Survey on the usage of Cyrillic script on the Internet” by Nikola Marković and Dragana Bečejski Vujaklija, PhD, which was carried out within the activity of the Informatics Association of Serbia, in February 2018.

2. RESEARCH METHODOLOGY

The study on the usage of Cyrillic script by a selected group of students of the ICT College relates the 2017/2018 academic year. The six subjects taught by three professors were observed. The professional courses, such as Basics of Programming 1 and Databases, as well as the academic courses, such as Business Communications, were included in the study. The courses were selected from all three years of the study programme. The students’ papers written as a part of their mid-term examinations and final exams were reviewed.

The information on the script used by the students in the educational process was obtained by inspecting the students’ papers. Such an inspection of students’ papers provided direct and objective data. A similar method was applied by Mihajlović and Ognjanović (2006) in their research, whereby the ability of a selected group of researchers at the Vinča Institute to use databases was monitored directly. By the application of such a direct method, the questionnaires filled in by a selected group of respondents were avoided. Surveys are methods frequently used in studies and analyses of the use of computers and the Internet both worldwide and in the country (Informatics Association of Serbia, 2018; Josanov & Djurić-Kuzmanović, 2004; Statistical Office of the Republic of Serbia 2017a, 2017b). The problem with surveys is that information is obtained indirectly.

In this study, it is necessary to point out the attitude that three professors have towards Cyrillic script. All three professors have a positive attitude towards Cyrillic script and they have been using it in teaching. In this regard, there are two professors who can be especially distinguished. These professors have forced the usage of Cyrillic script wherever and whenever possible. All the course materials prepared for students have been written in Cyrillic, all the materials prepared for mid-term examinations and final exams have been also written in Cyrillic and the exam results have been published using Cyrillic script as well. Finally, the exam marks in the students’ files have been also written in Cyrillic.

In addition to the professors' positive attitude towards Cyrillic script, it is necessary to emphasize that the ICT College has been impelling the usage of Cyrillic, as it is a state college that acts in accordance with the Constitution and the laws of the Republic of Serbia. The College's website has been made in Cyrillic. Of course, the College also has a website available in English.

3. RESULTS AND DISCUSSION

The study comprised 652 students' papers. Out of the total number of the students' papers reviewed, Cyrillic was used in 385 students' papers (59%) and Latin script was used in 267 students' papers (41%). The rankings per professors are different, as expected. The majority of students who write in Cyrillic attended the courses held by the professors who consistently use Cyrillic script themselves. The numbers and percentages of the students per professors have been given in Table 1. In our opinion, the percentage of the students who use Cyrillic is rather high, especially considering the field of work of the ICT College, i.e. the field of IT which is dominated by the English language and Latin script. Also, given the general impression that Latin script is predominant in all segments of our society and rather aggressively imposed, the obtained findings may be considered somewhat surprising, in a positive sense.

Table 1. Numbers and percentages per professors

| | Number of students | Number of students, Cyrillic | Percentage of students, Cyrillic |
|---------------------------------|--------------------|------------------------------|----------------------------------|
| Professor no. 1 | 279 | 203 | 73 |
| Professor no. 2 | 213 | 111 | 52 |
| Professor no. 3 | 160 | 71 | 44 |
| Total number of students | 652 | 385 | 59 |

Herein we will also provide more detailed information about the courses of Basics of Programming 1, Business Communications and Databases. Regarding the course Basics of Programming 1, the number of students who participated in this study was 101. Cyrillic script was used by 79 students (78%) and Latin script was used by 22 students (22%). As for the Business Communications course, the number of students participating in the study was 78. Cyrillic script was used by 66 students (85%) and Latin script was used by 12 students (15%). This is the best result obtained in favour of Cyrillic script. The least favourable result, in regard to the usage of Cyrillic script, was obtained in the Databases course. The number of students participating in this study was 160. There were 71 (44%) students who used Cyrillic script and 89 students (56%) who used Latin script in their papers. In regard to this course, it should be noted that the professor uses both Latin and Cyrillic.

In the survey organized and analysed by Marković and Bečejski Vujaklija (2018), carried out within the activity of the Informatics Association of Serbia, which inspired us to examine the usage of Cyrillic script among the students of the ICT College, the organizations engaged in different fields were asked two questions as follows:

- whether they have a website in Cyrillic, and
- whether they have a national, CPB domain registered.

The survey included 143 organizations in the field of education and science, 60 organizations in the field of information technology industry and 54 organizations engaged in the field of public administration. The organizations engaged in other fields were less represented in number, therefore, it would be unreasonable to consider them herein. The field of culture and media could serve as an example, since only 10 such organizations took part in the survey and the

results indicated that 7 of them have their websites in Cyrillic. The highest percentage, i.e. 80%, of available Cyrillic websites, was found in the public administration organizations, followed by the organizations in the field of education and science, i.e. 57%.

This is quite foreseeable as the public administration must be the first one to comply with the laws of the Republic of Serbia and the percentage should have been 100%. This also applies to the field of education and science. The identity of a nation should be nurtured by education through its language and script. In our opinion, the percentage of the organizations in this area of 57% is alarmingly low. In this respect, different levels of education should be distinguished and education should be separated from science as well. As for the IT organizations, out of which only 12% have their websites available in Cyrillic, which may be considered an expected outcome since, as previously stated, English and Latin script represent the norms and standards applicable to such organizations. Consequently, Latin script has been naturally and unduly transferred into the Serbian language. Hence, the organizations should be more influenced to use Cyrillic script as all the technical requirements have been provided.

In this study, we focused on the first question. If the results given in this paper are compared with those obtained by the Informatics Association of Serbia, it may be stated that the findings provided by our study on the attitude towards Cyrillic script at the ICT College are quite good. As a reminder, 59% of the students who participated in the study used Cyrillic script in the educational process, although the predominant field of education is that of IT. The problem with this profession can be found in the rapid development of new information technologies. In such a race against time, it is much easier for teachers to introduce English terms and use Latin script directly than to attempt to incorporate the Serbian language and Cyrillic script. However, we believe that a high level of IT expertise should not be a barrier to nurturing native Serbian and Cyrillic. In order to preserve Cyrillic script, the teachers of the College, and beyond, need to cherish it more. This can also have a positive impact on students as shown in our case.

CONCLUSION

In our study on the usage of Cyrillic script in the educational process by the students at the ICT College, conducted on a selected group of students and their papers, the obtained results have indicated that 59% of the students used Cyrillic. This percentage is rather high given that the predominant field of education at the College is that of IT. In the field of IT, English is the native language of the profession, which entails the intensive use of Latin script.

The results were provided by a direct inspection of the students' papers. This approach is direct and objective because the students were able to opt for the script quite spontaneously, without any special emphasis on the script concerned. In contrast, the common studies on the use of information technologies in our country and worldwide, including the usage of Cyrillic script, apply surveys whereby sampled respondents provide answers to the questions asked (Informatics Association of Serbia, 2018; Josanov & Djurić-Kuzmanović, 2004; Statistical Office of the Republic of Serbia 2017a, 2017b). However, it should be especially emphasized that the professors whose courses were herein analysed use Cyrillic script intensively in teaching and thus, probably indirectly, influence their students.

According to the results of the survey on the use of Cyrillic websites by the selected organizations from our country, predominantly from the field of science and education, which was con-

ducted by the Informatics Association of Serbia, 57% of them have their websites available in Cyrillic. The above findings are not quite good since they show that those who should take care of the people's identity, their knowledge and literacy, thus cherishing the Serbian language and its original, i.e. traditional Serbian Cyrillic script, do not put enough efforts into it.

The knowledge of new information technologies is an indisputable task of education; however, it should not undermine the basic knowledge of the native Serbian language and Cyrillic script. These two are not contradictory and they should not clash with each other. An increased percentage of the usage of Cyrillic script in IT teaching can be achieved through a greater involvement of teachers at all levels of the education system and in all courses, including the professional ones, in respect to the Serbian language and Cyrillic script. This is not easy because the profession does its part. It is much easier for teachers to directly introduce and use English terms and Latin script in the field of emerging technologies. Nevertheless, they should make an extra effort on this issue as their mission is to expand their students' knowledge in any field. The best method to direct students toward the Serbian language and Cyrillic script is to act as a role model without major proclamations, as shown in our research.

REFERENCES

- Association for defending the Cyrillic alphabet "Dobrica Erić". (2011). Retrieved from www.cirilica-beograd.rs
- "Cherish the Serbian Language" campaign. (2015). Retrieved from www.bgb.rs/index.php/component/content/article/2.-uncategorized/695-n-gu-sprs-i-zi
- Constitution of the Republic of Serbia. (2006). Retrieved from www.srbija.gov.rs/cinjenice-o-srbiji/ustav-php
- Constitutional Court of the Republic of Serbia. (1963). Retrieved from www.ustavni.sud.rs/page/view/139-100028/ustav-republike-srbije
- "Draft of the Cultural Development Strategy". (2017). RTS (Radio Television of Serbia). Retrieved from www.rts.rs/page/stories/ci/story/124/drustvo/2764362/zastita-cirilice-i-jezik-a-vazni-za-kulturoloski-opstanak-drustva.html
- ICT College of Applied Studies, Belgrade. (2007). Retrieved from <https://www.ict.edu.rs>
- Jošanov, B. i Đurić-Kuzmanović, T. (2004). Rodne razlike u upotrebi računara, uspehu na ispitima i istraživačkom radu u ICT i E-biznisu. CDROM Zbornik radova, YU iNFO, E-Society, Kopaonik, 2004, 16 (1-5).
- Marković N. i Bečejski Vujaklija D. (2018). Anketa o korišćenju ćirilice na Internetu. Informatics Association of Serbia. Društvo za informatiku Srbije. Retrieved from <http://dis.org.rs/sr/?s=anketacir>
- Mihajlović, Z. & Ognjanović, J. (2006). Jedna analiza o tome da li znamo da koristimo baze podataka. CDROM Zbornik radova, YU iNFO 2006, Internet i E-Society, Kopaonik, 6-10th March, 2006, 133 (1-4). ISBN 86-85525-01.
- Statistical Office of the Republic of Serbia. Republički zavod za statistiku, Republika Srbija (2017a). Informacione tehnologije. Statistički godišnjak Republike Srbije, 2017, 17. Poglavlje. Beograd.
- Statistical Office of the Republic of Serbia. Republički zavod za statistiku, Republika Srbija (2017b). Upotreba informaciono-komunikacionih tehnologija u Republici Srbiji. Beograd.

ECONOMIC MIGRATION AND LABOUR TRAFFICKING FROM BULGARIA

Georgi Petrunov¹ 

DOI:

Abstract: *Economic migration from the post-socialist countries to the countries of Western Europe continues to be a highly dynamic process, with large migration flows marking the second decade of the 21st century. Bulgaria is no exception to this trend: thousands of Bulgarians each year migrate to Western European countries. In search of well-paying jobs and a better life, some of them find themselves trapped in trafficking schemes and fall victim to the modern form of slavery. This report explores trafficking in human beings from Bulgaria to Western Europe, and in particular trafficking for the purpose of labor exploitation. The research methods used include court case analysis and in-depth interviews with prosecutors, investigators, police officers, NGO representatives and victims of trafficking. The report examines the main reasons for involvement in labor trafficking, typical trafficking practices, recruitment methods, and the various forms and economic sectors in which the victims are exploited. Among the key factors for migration and labor trafficking the research highlights weak and slow economic development, high levels of poverty and social exclusion coupled with the marginalization of social groups, lack of adequate work and job insecurity, and high levels of crime.*

Keywords: *Economic disparities, Crime, Exploitation*

1. INTRODUCTION

The twenty-first century, as Anna Krasteva (Krasteva, 2014) points out, has been metaphorically described by researchers as the „age of peoples on the move”, the „era of migration”, and the „migration planet”. Although migration is not a new phenomenon, one can argue that it has become one of the main features of the modern world and the trend is a steady increase of the international migrant stock. The United Nations (UN, 2019) estimate that in 2019, there are 271,642,105 migrants in the world, which is almost 120 million more than in 1990, when the number of migrants was 153,011,473. This means that in 2019, 3.5% of the world’s population are migrants.

The multiple complex motivations and migration trajectories often combine economic, social and political factors (Manning, 2013). Nevertheless, with the exception of periods of war, ethnic or religious conflict, international movement is mostly economically motivated (Moch, 2013). People from less developed countries are seeking opportunities for a better life for themselves and their families in economically advanced countries, where they can find more jobs and higher incomes than in their home country. Economic globalization and modern technologies make the economic and social disparities between nations even more visible (Barner, Okech, & Camp, 2014). According to some authors, the access to information about the conditions of life in rich countries, as well as the easier contact with friends who have already gone abroad deepens the perception of inequality and lack of prospects at home, motivating people from poorer countries to migrate to richer countries (Jac-Kucharski, 2012; Cho, 2015; Mo, 2018).

¹ University of National and World Economy, boul. 8th December, Sofia, Bulgaria

As elaborated by Saskia Sassen (Sassen, 2002), with economic globalization various cross-border circuits emerge, that have become a source for livelihood, accumulation of profits and foreign currency in many countries around the world. These chains are specifically developed to generate big profits, but at the expense of disadvantaged people. They include cross-border migration and trafficking in human beings, and the exploitation of workers in formal and informal labor markets.

This report deals specifically with trafficking in human beings for the purpose of labor exploitation. In particular, the paper analyzes the main aspects of this type of trafficking of Bulgarians in Western European countries. The report draws upon sources and data collected through a project funded by the University of National and World Economy, and includes desk research of court cases and in-depth interviews with prosecutors, investigators, police officers, NGO representatives and victims of trafficking.

2. CONDITIONS FOR THE DEVELOPMENT OF LABOUR TRAFFICKING FROM BULGARIA

Scholars (Barner, Okech, & Camp, 2014) draw attention to the development of criminal markets, both between “developed” and “peripheral” countries, and in “peripheral”/developing nations themselves – such as trafficking in humans. Bulgaria belongs to the so-called developing countries, which after the fall of the communist regime in 1989 underwent radical changes in the political, economic and social spheres. The country’s post-communist period is marked by multiple economic and political crises. Furthermore, the enforcement of public policies of de-industrialization, deregulation, privatization, decentralization, and liberalization simultaneously in key spheres - the social security system, health care and education, local government and transport, in infrastructure and public services (electricity, water, etc.), in the labor market, etc., lead to the impoverishment and marginalization of large groups of people (Jeliazkova, 2011).

During the last ten years, the economic indicators in Bulgaria have improved. The GDP has increased, unemployment levels have dropped, and the average monthly salary has risen. Nevertheless, Bulgaria remains the country with the lowest per capita GDP in the European Union (6,550 euro in 2018 compared with an EU 28 average of 28,270 euro)², and with the highest percentages of people at risk of poverty or social exclusion (32,8 %³ in 2018). Although the average salary has increased, almost 80% of the workers in 2017 are paid below that and more than half of the workers have official incomes below the minimum wage (Ministry of Finance, 2017). There are great wage differences between regions: according to data of the National Statistical Institute⁴ while in southwestern Bulgaria (which includes the capital Sofia), the average gross monthly salary reaches 700 euros, in the cities of the Northwestern Region (ranked second in the EU for low purchasing power of the population) the average gross salary is around 400 euro. Disparities like this are a strong push factor for migration – both internal and external.

Bulgaria is a source country of migration. Official statistics⁵ show that in 2018 only, 33,225 people emigrated from Bulgaria. This is the official number of people who have declared their change of residence; the figure does not take into account seasonal migrants and those who have

² Eurostat, Real GDP per capita, code [SDG_08_10].

³ Eurostat, People at risk of poverty or social exclusion, code [T2020_50].

⁴ National Statistical Institute, Average Gross Monthly Salary in 2019, available at: <https://www.nsi.bg/bg/content/>, accessed on 28.10.2019

⁵ National Statistical Institute, External migration by age and gender, available at: <http://www.nsi.bg/bg/content/3072/>, accessed on 28.10.2019

not declared they were living abroad. According to experts, the number of Bulgarians who have emigrated since the 1990s is nearly 2 million (Jeliazkova et al, 2018). Other scholars point out that for 90-95% of the Bulgarian emigrants who left the country in large numbers between 2000 and 2003, the main incentive was the opportunity to earn €15-20,000 per year, compared with a typical annual salary of €1,000-2,000 for unskilled labor in Bulgaria; many of the emigrants work in the lowest segment of the West European labor market (Bezlov et al., 2007, p. 128). A recent study shows that among low-qualified Bulgarians, the wage levels for the same work are much higher in Western Europe than in Bulgaria, which motivates people to look for employment abroad (Stoilova & Dimitrova, 2017).

The circumstances of large groups of people in poor socio-economic conditions who are looking for a better life offer criminals a new niche, especially after the bans for free movement within the EU were lifted. People living in poverty are more likely to accept risky job offers abroad or to fall victims of exploitation by traffickers without being able to seek help. The Eastern European countries, including Bulgaria, are among the most affected by human trafficking and the main countries of origin of victims of trafficking to richer countries, mainly in Western Europe (Mattar, 2009; Shelley, 2014; UNODC, 2018). According to Europol (2016), most of the reported victims are Bulgarians, along with citizens of the Czech Republic, Estonia, Poland, Romania, and Slovakia. According to the UNODC (2018) report, 33% of the identified victims of trafficking in the countries of Western and Southern Europe come from Southeast European countries.

The living conditions in Bulgaria and the strong desire of people to migrate, motivated by the search for a better standard of living abroad, create a fertile ground for the operations of traffickers who thus respond to the demands of exploitative employers for cheap labor (Mansoor & Quillin, 2006; Mahmoud & Trebesch, 2010). The exploitation of victims of trafficking ranges from sexual exploitation, forced labor, to begging and organ harvesting (Petrinov, 2014). The next section of the report focuses on trafficking for labor exploitation.

3. ASPECTS OF LABOR TRAFFICKING FROM BULGARIA

In Bulgarian law,⁶ trafficking in human beings is defined as: “the recruitment, transportation, transfer, harbouring or admission of persons, regardless of their will, through the use of coercion, abduction, unlawful imprisonment, deception, abuse of power, abuse of vulnerability, or by giving, receiving or promising benefits, to obtain the consent of a person having control over another person when exercised for the purpose of exploitation.” According to the ILO Forced Labour Convention from 1930, labor exploitation constitutes “all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily.” The prohibition of forced labor relates to all types of work, services and employment, regardless of industry or profession, whether the practice is legal and formal, or illegal and informal in nature. The crime of labor exploitation involves practices such as slavery or those similar to slavery, debt bondage and servitude (Europol, 2016).

The main destination countries of trafficking in human beings from Bulgaria are the Czech Republic, Greece, Italy, Spain, Cyprus, but cases of forced labor involving Bulgarians are found in Sweden, Norway, Germany, the United Kingdom, the Netherlands, Portugal and other Western European countries. The analysis of the identified cases indicates that the most vulnerable group for this type of trafficking are young to middle-aged men and women with low education

⁶ Cf. The Law on Trafficking in Human Beings in Bulgaria.

and qualifications, who do not have a well-paid job in Bulgaria or work in seasonal employment. Most often, the recruiter is not the same as the exploiter himself; to recruit victims, the recruiter publishes advertisements in media or relies on personal contacts in certain communities. Similar conclusions are found in the Europol report (2016): victims are lured through word of mouth and online advertisements, posted on social media and on specific websites (e.g., online recruitment agencies). In one of the court cases investigated, traffickers recruited victims directly in the Employment Office in one city in northwestern Bulgaria, promising the unemployed lucrative jobs in Western Europe; however, on arrival at the final destination they were exploited. A man who worked in Greece shares: “I found out from acquaintances that they may introduce me to a person who arranges fruit-picking work in Greece... [He] offered me a good salary, promised to take care of the paper work, even to drive me [there]. I agreed... we went with his van and picked up other people along the way... When we arrived, we found ourselves in hell.” Upon arrival in Greece, he finds himself a victim of labor trafficking; his documents were taken by the traffickers, he was not free to travel, and had to work at different places each day, but never received the agreed payment for the harvested produce.

Transportation in many of these cases is legal, with no resistance from victims, as they are convinced that they will work abroad under pre-arranged conditions. After arriving in the country of final destination, the victims realize that the conditions are completely different from what they have been promised in advance – both in terms of living and working conditions. One of the respondents traveled to Sweden after an acquaintance offered him a job as an elderly caregiver. Upon arrival, he was taken to the outskirts of the city and accommodated with another Bulgarian in a tent, located in a wooded area – without sewage, without electricity, with food brought by the trafficker from time to time: “I didn’t know where I was or how to get to the city ... It was scary, you don’t know what might happen, a dungeon everywhere.” Regarding the work, the respondent realizes he has been deceived: “I did not become a caregiver. They lied to me. [The trafficker] made us carry the beams and metal for a cottage in the forest. They were building it; we were just laborers. [He] said, let’s get the job done here first, then he’d arrange for us work as caregivers. And that was a lie, it was clear.”

The sectors in which Bulgarian men and women are exploited are most often agriculture, harvesting of fruits/vegetables and the food industry; women are exploited as seamstresses or domestic helpers, and men in construction and logging. Usually the victims work from morning till night, with little or no breaks. The victims who were interviewed stated that they were forced to work between 10 to 14 hours a day, six to seven days a week. A young woman who worked in Germany says: “It was hard [picking strawberries] work, you squatted most of the time, but that wasn’t the problem. The bad thing is that they made us work 10-11 hours with two breaks of 20 minutes each. We rarely drank water and there was almost no time to eat. Considering that we worked without a day off sometimes, after a week you felt like dying. You can’t get a good night’s sleep, [it was] very bad.” The pay is well below what was agreed. The interviews show that almost all of the employees got money withheld from the workers’ wages for shelter, food (though only once a day), for arranging the paperwork and transportation. After covering these and other daily expenses, there is hardly any money left for the workers – in some cases they do not have enough to buy a ticket to return home. In many cases, the exploiters tell victims that they’ll be paid at the end of the season, forcing them to stay if they want to get anything at all.

Information gathered from court documents shows that this type of trafficking is most often organized by small groups, often with family ties between the members who have established

networks of contacts in the countries of destination. Group leaders and their confidants usually reside in the destination country and control the victims. The main means of control in trafficking for forced labor include threats that if the victim leaves, they will not receive any money; constant surveillance during work; taking the victims' personal documents; threats to inform local authorities that the victim is residing and working illegally. In many cases, victims are also controlled by the debt they have accumulated (typically, the money borrowed to travel to the country of destination and the cost of staying). In some cases, traffickers also use physical violence.

4. CONCLUSION

The study shows that among the key factors for migration and labor trafficking are weak and slow economic development, associated with huge economic inequalities between regions and countries; high levels of poverty and social exclusion coupled with the marginalization of social groups; lack of adequate work and job insecurity; high levels of crime. Notwithstanding the fact that there will always be poorer and richer countries, that the free movement of people cannot and should not be restricted, that the pursuit of wellbeing should not be denied anyone, one question remains open: How to make this movement safer? In this respect further analysis and identification of the most vulnerable groups is needed, along with identification of the measures to improve their situation first in their home country. We also need to examine more rigorously the factors behind the increase in the number of people being trafficked and how these factors can be eliminated or at least mitigated.

These issues relate to the so-called supply side of trafficking; on the other side is the demand for the services offered by traffickers through the exploitation of their victims. Therefore, the demand side must necessarily be included in the formula to mitigate the severity of the problem and to reduce its scale. As long as in destination countries employers go unpunished for using cheap labor by violating not only labor but also human rights, no adequate response to the issues can be expected. Only the close collaboration of all stakeholders, including researchers, experts from civil society organizations, social workers, law enforcement officials and government agencies, can ensure that the problems are properly addressed and the policies for prevention and combating trafficking in human beings and the measures implemented are based on knowledge and best practices.

ACKNOWLEDGMENT

This paper is result of the author's work in frame of research project № NID NI-10/2018: "Money Laundering from Human trafficking" financed by University of National and World Economy, Sofia.

REFERENCES

- Barner, J., Okech, D., & Camp, M. (2014). Socio-economic inequality, human trafficking, and the global slave trade. *Societies*, 4, 148–160; <https://doi.org/10.3390/soc4020148>.
- Bezlov, T., Gounev, P., Petrunov, G., Tzenkov, E., & Tzvetkova, M. (2007). *Organized crime in Bulgaria: Markets and trends*. Sofia: Center for the Study of Democracy.
- Cho, S.Y. (2015). Modeling for Determinants of Human Trafficking: An Empirical Analysis. *Social Inclusion*, 3, 2-21 (Special Issue „Perspectives on Human Trafficking and Modern Forms of Slavery”). <http://dx.doi.org/10.2139/ssrn.2117838>.

- Europol. (2016). *Trafficking in human beings in the EU*. Hague: Europol Public Information.
- Jac-Kucharski, A. (2012). The Determinants of Human Trafficking: A US Case Study. *International migration*, 50(6), 150-165. <https://doi.org/10.1111/j.1468-2435.2012.00777>.
- Jeliazkova, M. (2011). *Inequality and policies*. Trojan: Alja (in Bulgarian).
- Jeliazkova, M., Minev, D., Draganov, Dr., Krasteva, V. & Stoilov, A. (2018). *Youth employment policies in Bulgaria*. Tallinn: Tallinn University. Retrieved from: <http://www.except-project.eu/working-papers/>.
- Krasteva, A. (2014). *From migration to mobility: Policies and routes*. Sofia: New Bulgarian University Publishing House (in Bulgarian).
- Mahmoud, T.O., & Trebesch, C. (2010). The economics of human trafficking and labour migration: Micro-evidence from Eastern Europe. *Journal of Comparative Economics*, 38(2), 173–88. <https://doi:10.1016/j.jce.2010.02.001>.
- Manning, P. (2013). *Migration in world history*. Abingdon: Routledge.
- Mansoor, A., & Quillin, B. (2006). *Migration and Remittances: Eastern Europe and the Former Soviet Union*. Washington, DC: World Bank.
- Mattar, M. (2009). *Trafficking in persons: Global overview, current trends, and pathways forward*. Washington, DC: John Hopkins University.
- Ministry of finance. (2018). Data provided by Ministry of finance in response to a question from the Member of Parliament Jelio Boichev. Retrieved from: <https://www.parliament.bg/pub/PK/318729854-06-1098.pdf>.
- Mo, C.H. (2018). Perceived relative deprivation and risk: An aspiration-based model of human trafficking vulnerability. *Political behavior*, 40(1), 247-277. <https://doi:10.1007/s11109-017-9401-0>.
- Moch, L. P. (2013). Lessons and cautionary tales from the past: Building bridges from migration history to Europeanness. *National Identities*, 15(1), 9-19. <https://doi:10.1080/14608944.2012.733151>.
- Petrunov, G. (2014). Human trafficking in Eastern Europe: The case of Bulgaria. *The Annals of the American Academy of Political and Social Science*, 653(1), 162-182. <https://doi:10.1177/0002716214521556>.
- Sassen, S. (2002). Women's burden: Counter-geographies of globalization and the feminization of survival. *Nordic Journal of International Law*, 71(2):255-274. <https://doi:10.1163/157181002761931378>.
- Shelley, L. (2010). *Human trafficking: A global perspective*. New York: Cambridge University Press;
- Stoilova, R. & Dimitrova, E. (2017). Emigration from the Perspective of School to Work Transition in Bulgaria. *Czech Sociological Review*, 53(6), 903-933. <https://doi:10.13060/00380288.2017.53.6.380>
- United Nations. (2019). Workbook: UN Migrant stock total 2019. United Nations, Department of Economic and Social Affairs, Population Division. Retrieved from: <https://www.un.org/en/development/desa/population/migration/data/estimates2/estimates19.asp>
- UNODC. (2018). *Global report on trafficking in persons 2018*. New York: United Nations.

BIODIVERSITY CONSERVATION AND AGRICULTURAL TERRACES: A CASE STUDY ON THE ISLAND OF KYTHIRA (GREECE)

Alexandra Solomou¹

DOI:

Abstract: *Agricultural terraces and terrace walls are a conspicuous feature of the Mediterranean landscapes. The aim of the study is the contribution of agricultural terraces and terrace walls in the biodiversity conservation of the Kythira island. Analysis of the literature from the main academic resources databases and personal interview surveys indicate that agricultural terraces and terrace walls provide various goods and services, which are vital, and they are potential and interesting resources for the development of this area. It is noteworthy that agricultural terraces and terrace walls are an important habitat for biodiversity. Consequently, these landscape elements should be preserved and exploited as favor the components of biodiversity which are the source of our food and medicines, fibers, fuels and industrial products. The direct uses of the components of biodiversity contribute substantially to the economy and tourism development.*

Keywords: *Flora, Fauna, Environment, Protection, Agrotourism, Mediterranean.*

1. INTRODUCTION

1.1. The Natural Environment of Kythira

The island of Kythira, also known as Cerigo, is located south of the southeastern tip of the Peloponnese. The area of Kythira is 277.28 km² and the length of the coastline is 114.24 km, while taking into account the 22 islands around it, the total area is 278.65 km². Its general geomorphologic picture is semi-mountainous, dominated by a low plateau of 200-300 meters, which is often interrupted by gorges and some valley-like configurations. This plateau leads to steep cliffs to the west and south, and to the east and north, to smoother and lower formations, with many beaches. There are several islands and islets around, with the most important being Dragonares in the east and Avgo or Hitra in the south (Aggelidis et al., 2016). Most of the Kythira area belongs to the category „forests and semi-natural areas” (63.35%), 36.38% of the total area belongs to the category „agricultural areas” and 0.27% to artificial areas (Figure 1).

The climate of Kythira is temperate Mediterranean. According to Hellenic National Meteorological Service (HNMS) statistics (1955-1997), the region is characterized by a dry, warm season during the summer months, with relatively high temperatures and moderately low temperatures during the winter months. It is noteworthy that Kythira possesses significant natural wealth (flora and fauna), composing a highly versatile mosaic that can offer multiple emotions to the visitor.

Specifically, the EZD area GR3000010 - NISIDES KYTHIRON: PRASONISI, DRAGONERA, ANTIDRAGONERA (total area: 989.13 ha) is important for flora [e.g. *Allium gomphrenoides* Boiss. & Heldr., *Anthemis scopulorum* Rech. f., *Centaurea raphanina* subsp. mixta

¹ Institute of Mediterranean and Forest Ecosystems, Hellenic Agricultural Organization “Demeter”, N. Chlorou 1, 11528, Ilisia, Athens, Greece

(DC.) Runemark etc.], the bird (eg *Anthus campestris*, *Falco eleonora*, *Lanius senator* etc.) and its mammals (eg *Monachus monachus*, etc.). Also, SPA GR3000013 - KYTHIRA KAI GYRO NISIDES: PRASONISI, DRAGONERA, ANTIDRAGONERA, AVGO, KAPELLO, KOUFO KA FIDONISI (total area: 5392.46 ha) (Map 1) are important for breeding species and marine species. It has been designated as SPA for the following birds: *Calonectris diomedea*, *Puffinus yelkouan*, *Phalacrocorax aristotelis*, *Falco eleonora*, *Falco peregrinus*, *Larus audouinii* and *Emberiza caesia* (FILOTIS, 2018).



Figure 1. The Natural Environment of Kythira (Photo: Dr Alexandra Solomou).

2. MATERIALS AND METHODS

Data for the current study were taken from previously published work and to ensure the credibility only indexed research and review articles were used. The databases were included: Scopus, Google Scholar, PubMed, Science Direct, and MEDLINE. Also, we carried out personal interview surveys (Fowler, 2002) with the residents of Kythira island (Map 1) in 2017 and 2018.



Map 1. Greek island Kythira.

3. RESULTS AND DISCUSSION

3.1. Dynamics of stone terraces and walls in the natural environment

The island of Kythira is the crossroad of Mediterranean cultures. The fire caused in 2017 exposed the stone terraces and walls (Figure 2), works that span hundreds of years, whose maintenance and extension continued until the 1960s, as they are elements of the Greek landscape and its features. Greek countryside. According to Koulouri (2004) terraces are, historically, one of the most important and characteristic human interventions in shaping the Mediterranean landscape. They are a very important element of the historical and cultural heritage of the Mediterranean peoples and at the same time of great aesthetic and environmental value.

The stone terraces and stone walls (Figure 2) are very likely to have been conceived by the island's inhabitants in ancient times so that they can cultivate the land, mainly due to the steep the slope of the soil and to some extent secure their survival. Traditionally, the art of tiering has been passed down from generation to generation, among members of each artisan family. Terrestrial farming has largely been abandoned by the mechanization of agriculture, extensive farming and the reduction in the share of human labor in agricultural production (Crhysanthaki, 2005).

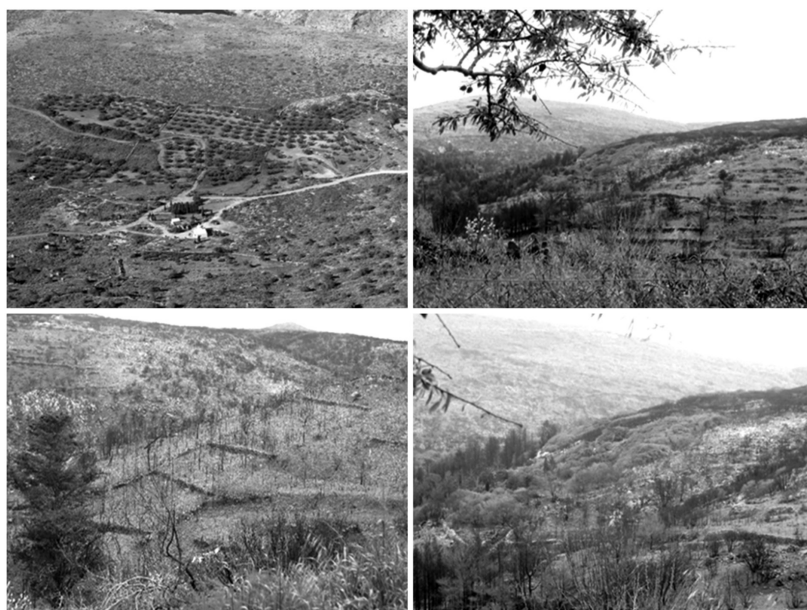


Figure 2. Stone terraces and walls in the Kythira landscape (Photo: Dr Alexandra Solomou).

It is noteworthy that the systems of stone terraces and walls (Figure 2) provide a multitude of benefits for both the environment and human societies. They provide Ecosystem Services that are vital, especially in island regions. More specifically, the most important benefits of maintaining stone terraces and walls are:

- Prevention of soil erosion, both by the action of water and by air,
- Protection during extreme weather, preventing floods and contributing to the creation of a local microclimate,
- Production, under conditions, of high-quality products,
- The creation of suitable micro-habitats for the conservation, protection and enhancement of biodiversity,
- Maintaining the high aesthetic and cultural value of the Mediterranean landscape [1,5].

3.2. Contribution of stone terraces and walls to biodiversity conservation

Stone terraces and walls are an integral part of the Mediterranean landscape (Figure 3). In many cases, they create ecological seals/habitats/nests offering a permanent or temporary refuge to various biodiversity components, e.g. invertebrates, reptiles, birds, etc. One of the reasons that terraces create fires is that they are normally oriented so that „retaining walls during the day store solar energy, which is released at night, thereby creating local microclimate” suitable for supporting many organisms, leading thus increasing biodiversity (Vernikos et al., 2001). In essence, they create an artificial habitat and organism shelter that is enhanced by the increase in landscape mosaics.

The micro-environment at the base of stone terraces and walls is a refuge of high humidity and increased primary productivity (dense vegetation), factors which are important for invertebrate populations (e.g. spiders, phalanx, Carabidae, Staphylinida, etc.) (Arnett et al., 2002, Dajoz 2002). During the summer months the slits and openings of the stone terraces and walls accommodate large numbers of other invertebrates (e.g. snails) that pass the grouping period in a protected microclimate. This is probably due both to the high humidity of the stone terraces and walls, and to the increased calcium requirements for the construction of snail shells, factors that make them ideal environments for organisms.



Figure 3. Stone terraces and walls as an important source of biodiversity
(Photo: Dr Alexandra Solomou).

As regards the reptiles, their exothermic role plays a decisive role in the selection of „good” calorie sites where there are rich food and predator protection (Adolph, 1990). Stone terraces and walls are places for this activity and they are selected by reptiles. In addition, these areas of the island’s rural landscape are very important for wildlife, because they are an important refuge for a large number of species (e.g. reptiles, smallpox and insects) that constitute important food for many bird species.

Stone terraces and walls are also an important habitat for flora diversity and habitat for dry or shady plants as they find a safe retreat site, a haven of life. The flora that grows in these areas hosts species that are scattered by the natural flora of neighboring areas. Plant species vary greatly from place to place depending on geographical location (climate, altitude, etc.) (Peta-

nidou, 2001). Also, the age of the building, the conservation of moisture at least once a year, and the north orientation or shading (which indirectly regulate the amount and / or moisture duration) favor the growth of herbaceous plants (Pafilis, 2014).

4. FUTURE RESEARCH DIRECTIONS

Future research should continue for biodiversity monitoring and management actions which will allow this wealth to maintain and to be inherited undisturbed in future generations. Also, it will be studied the promotion of agrotourism in Kythira island. It is important to be referred that agrotourism is a mild alternative form of sustainable tourism development and multiactivity in a rural area, which aims to: a) help the visitor get acquainted with the rural area, the cultural and authentic features of the area, the farming activities, the local products, the traditional cuisine and the daily life of the residents, b) bring the visitor in touch with nature as well as the activities in the countryside, in which he can participate, entertain and feel his joy navigation, knowledge, information and discovery, c) mobilize the productive, cultural and developmental forces of the place, thus contributing to the sustainable economic and social development of Kythira rural area.

In addition to the proposed framework, some additional proposals to support Kythira's development include: a) Protecting the local product and developing an integrated marketing strategy to achieve benefits at the individual and collective level and b) Strengthening the sustainable character of tourism development on the Kythira island and turning to alternative forms of tourism, in the context of exploiting the local product. This strategy would have as a result the extension of the tourist season, with even more positive consequences for Kythira island.

5. CONCLUSION

In conclusion, stone terraces and walls are part of the island's cultural tradition and heritage, which should be preserved and exploited with a view to an environmentally sustainable spatial development with effective and coherent protection of the environment and its cultural heritage, of biodiversity and adaptation to climate change. Finally, Greece offered to develop agrotourism because of its natural beauty and its history and tradition. The research on biodiversity, sustainability and agrotourism may provide guidance for researchers, policymakers and funding agencies to prioritize research questions and frame their activities.

ACKNOWLEDGMENT

We thank the Institute of Mediterranean and Forest Ecosystems, Hellenic Agricultural Organization "Demeter" for their bibliographic database and assistance.

REFERENCES

- Adolph, S.C. (1990). Influence of behavioral thermoregulation on microhabitat use by two *Sceeloporus* lizards. *Ecology*, 71(1):315-327.
- Aggelidis, Ch., Georgiadis, N., Kordopatis, P., Portolou, D. and Tsiopelas, N. (2016). Recording and Evaluation of the Kythira and Antikythera Natural Environment. Mediterranean Institute for Nature and Man - Hellenic Ornithological Society, Athens (in Greek).
- Arnett, R.Jr, Thomas M.C., Skelley, P.E., Frank, J.H. (2002). American Beetles, Volume II: Polyphaga: Scarabaeoidea through Curculionoidea. CRC Press LLC, Boca Raton, FL.

- Chrysanthaki, Ch. (2005). Aesthetic Value of the Upgraded Landscape and its Development in the Sustainable Development Education. Bachelor's thesis. School of Humanities. Department of Preschool Education and Educational Design Sciences. University of the Aegean. Mytilene.
- Dajoz, R. (2002). Les coléoptères carabidés et ténébrionidés. Tec & Doc Lavoisier.
- FILOTIS. (2018). Available at: <https://filotis.itia.ntua.gr/biotopes/c/GR3000010/> (Accessed 10.10.2018).
- Fowler, F.J. (2002). Survey Research Methods, 3rd ed. Thousand Oaks, CA: Sage.
- Hellenic National Meteorological Service (HNMS) (1955-1997). Available at: <http://www.hnms.gr/emy/el/> (Accessed 19.10.2018).
- <https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.2307/1940271#accessDenialLayout>
- Kiráľová, A., & Hamarneh, I. (2018). Urban tourism competitiveness of selected European cities. In V. Bevanda (Ed.), *Recent Advances in Information Technology, Tourism, Economics, Management and Agriculture*. Paper presented at 2nd International Scientific Conference ITEMA 2018, Graz University of Technology, Graz, November 8, 2018 (pp. 125-133). Belgrade: Association of Economists and Managers of the Balkans. <https://doi.org/10.31410/itema.2018.125>
- Koulouri, M. (2004). Soil water erosion and land use change in the Mediterranean: abandoning traditional extensive cultivation. Doctoral thesis. Environment Department. University of the Aegean. Mytilene.
- Pafilis, P. (2014) Dry stone, biodiversity supports. Scientific Research Program 2013. Ioannis S. Latsis Public Benefit Foundation. National and Kapodistrian University of Athens, Greece.
- Petanidou, Th. (2001). The role of terraces in the past and their importance for the future of the islands in terms of economy, ecology and culture. Final Technical Report to the Ministry of the Aegean. Mytilene, Greece.
- Vernikos, N., Daskalopoulou, S., Paylogeorgatos, G. (2001). Proposal for Classification of Stone Structures. In M. Varte-Matarangas, Katselis Y. (Ed.), *The Building Stone in Monuments*. Paper presented at the International Interdisciplinary Workshop Scientific Conference ICOMOS – IGME 2001 (pp. 170-270) Mytilene, Greece.

URBAN AND ARCHITECTURAL PERFORMANCES IN THE FUNCTION OF DEFINING OF STRATEGY OF SUSTAINABLE DEVELOPMENT OF TOURIST DESTINATION

Spasoje Tuševljak¹ 

Miodrag Simović² 

Vladimir Simović³ 

Ivan Tuševljak⁴ 

DOI:

Abstract: *Development of science and positive practice are increasingly emphasizing the importance of multidisciplinary approach in resolving problems in the domain of nature, society and economy, and in particular problems generated by interaction of various factors of influence of apostrophized strategic areas. As diverse the factors of action are, diversity of character of action by areas and synergy is manifested even more, which emphasizes the need for planning and monitoring of effects. In this context, observed relationships between natural, social and economic structures indicate the lack of indigenous self-regulation by fields and the complexity of synergy and interactions. As the whole paradigm is situated in a given milieu, from micro location to universe, the role of space becomes important, placing spatial planning, urbanism and architecture as scientific disciplines dealing with the phenomenology of space, its significance and effect on the phenomena of nature, society and economy, sequentially and as a whole.*

Keywords: *Spatial Planning, Architecture, Development, Ownership, Institutions.*

1. INTRODUCTION

Spatial planning includes a wide range of relevant natural, technological, economic and social factors, having the intention to formulate principles and aims of sustainable development by optimizing available factors within given spatial framework. As it is natural that potentials and resources are situated in the space, so is natural interdependence of economic activities and space, as well as pluralism and rivalry of ownership portfolio and interests, which emphasize the significance of legal regulation and functionality and stability of institutional settings.

Tourism has become an economic branch on the rise thanks to numerous circumstances, before all globalization of world economy, growth of mobility of production factors, but also autochthonous specificities of business itself that opens optimistic perspectives to everyone; for development, growth of employment and compensation of losses caused by globalization and liberalization of market with negative implications in many sectors and branches. Comparative advantages as those exotic natural circumstances, attributes and characteristics undeveloped countries have – are not sufficient for use for tourism development dynamization. A sophisticated view of all circumstances is needed to effectively valorize human and material resources

¹ University of Economy of East Sarajevo, Alekse Šantića 3, 71240 Pale, Bosnia and Herzegovina

² Constitutional Court of Bosnia and Herzegovina, R.Dž.Čauševića 6/III, 71000 Sarajevo, Bosnia and Herzegovina

³ Prosecutor's Office of Bosnia and Herzegovina, Kraljice Jelene 88, 71000 Sarajevo, Bosnia and Herzegovina

⁴ Preduzetnik.IT, Stari Grad, Belgrade, Serbia

the country has, which implies the creation of development strategies, economic and current policies with a sophisticated and forward-looking approach to achievement of future goals.

Spatial planning encompasses a wide range of relevant natural, technological, economic and social factors in order to formulate the principles and goals of sustainable development by optimization of available factors within given spatial framework, so as to distinguish between local, regional, national and transnational spatial planning documents and concepts. Urbanism, on the other hand, defines the conditions and mechanisms of operational purpose with the aim of harmonization and optimization of natural, social and economic performances for generating of sustainable development, while architecture creates functional and aesthetic dimensions of use and visual recognition. As it is natural that potentials and resources are located in space, so is natural and necessary appropriate legislation that regulates all the aspects in a creative and effective manner, connections and interactions of economic activities and spaces.

2. URBANISM AND ARCHITECTURE AS FRAMEWORK FOR FORMULATING THE TOURIST DESTINATION DEVELOPMENT STRATEGY

The urban framework and architectural solutions primarily determine the attractiveness of tourist destination, but also business opportunities and effects of functional and aesthetic performances, in general and in details, which is certainly the most important. Unfortunately, the circumstances of poor and underdeveloped countries are such that the lack of money, knowledge, vision and functional institutions is most often compensated by *ad hoc* improvisation, which generates errors that are difficult to eliminate and expensive.

Of course, not even the richest people are immune to mistakes, but they are less frequently made and easier to repair. However, the impression is that the area of spatial planning and architecture is important only insofar as it allows political and investment elites to provide “soft” mobility and low costs at a certain moment, which in the long term limits the possibilities of valorization, but also multiplies social expenditures on various basis, now and in future.

In order to come up with solutions that optimize the valorization of potentials, a sophisticated research approach is needed when formulating strategies and operational mechanisms for implementation. This approach is *sui generis* challenging in the context of Jahorina tourist destination, due to growing disparity between fascinating natural performances and huge social and private investments, on the one hand, and realized exploitation effects, on the other, that worryingly stagnate and threaten the survival. It must be noted that the existing situation was significantly negatively influenced by urban-architectural solutions.

It is extremely important for a tourist destination that it is urbanistically functional and architecturally recognizable, which is not only a picture of the landscape and visual identity that visitors will take with them, but also the basis on which commercial and business strategies are built. In order to create conditions for formulating commercial and business strategies and their functional harmonization, it is necessary to first build mechanisms for defining spatial planning strategies and architectural solutions frameworks.

Infrastructure potential and concept of visual recognizability is formatted by the strategy of spatial planning and framework of architectural solutions, which is at the same time basis for formulating competitive business strategies and their operationalization. Spatial planning

should look at the totality of natural, economic and demographic potentials in the context of goals that are to be achieved, now and in the long term. It is an unquestionably complex mission that entails a multidisciplinary approach, which generates complications in coordination and harmonization of diverse doctrinal and methodological approaches and propositions.

It is a long and complex journey from vision, concept and instruments, to planning documents and institutional operationalization, that, perhaps most expressive, describes a well-known Latin proverb "*per astra ad astra*". The paradigm of the phenomenon is compounded by the fact that spatial planning formulates vision, performance strategies and instruments that effectively affect economic, legal, social, demographic and employment status and perspectives, which certainly implies branch, regional, local, but also political controversies and rivalries.

The study of the impact of urbanism and architecture on the position and perspectives of sustainable development of Jahorina tourist complex is indisputably intriguing and significant not only in the context of apostrophized aspects, but also in the context of assessment of the possibilities for overcoming of generated constraints in order to create better conditions for businesses to grow their competitiveness and profitability. .

3. CULTURAL HERITAGE, SOCIAL AND ECONOMIC CIRCUMSTANCES AND THEIR IMPACT ON THE PROCESS OF FORMULATING AND PROJECTING OF URBAN AND ARCHITECTURAL PERFORMANCES

Urban and architectural vision is primarily determined by heritage, level of technocratic development of the profession and talent and gift of architect. In doing so, vision is always situated in given socio-economic context, which defines the goals to be achieved, as well as the means and instruments for the realization of set goals.

An analysis of the current state of urban functionality and architectural recognizability indicates that the existing configuration is the result of ideological heritage and preferences of social and political factors whose primary goal was to meet the needs of social groups, so that market valorization was at the second place. According to such preferences, established goals were not primarily economic but social and propaganda in a way that rest and recreation could be used by workers and their families, unions, youth and ferrymen under privileged conditions, with a wide range of socialization and loss recovery mechanisms.

In such conditions, many companies and institutions have built capacities "by directive" without necessary complete urban and architectural projects, but also without professional elaborations and economic feasibility projects. This has resulted in activation of numerous construction and infrastructure facilities without institutionally authorized building and use permits and resolved ownership status.

The mortgage of (ir)reparable failures from the past complicates resolution of cumulated problems, as in sphere of value system so as in profiling of vision for the market environment and inexorably harsh economic conditions, which economic theory classifies as a model of complete competition. In this context, a new strategic role and generated reach of urbanism and architecture in development of economy and society as a whole should be formulated, which in modern conditions implies a multidisciplinary approach and sophisticated future forecasting mechanisms in order to create solutions of a higher degree of reliability in assessment of changes.

At the present moment, the circumstances are further complicated by the persistent crisis, which discourages investors and limits investment opportunities, and without additional investments for optimization of urban performances, it is not possible to revitalize the yield potential of existing capacities or to build new ones. The problem is all the greater because significant investments are also needed to improve financial position and for financial consolidation, which in given circumstances is impossible without adequate support and interventions from social funds.

What to choose as a priority for investment in case of limited resources - optimization of urban performances or consolidation of financial position, is a question for economic policy makers, which the fate of Jahorina tourist complex depends on, in many respects. The problem is additionally complicated by both the ideological confusion caused by transition and lack of answers for overcoming of economic crisis, as well as political conflicts, improvisation and lay arbitration when selecting economic policy priorities that, instead of growth, produce regional rivalries and animosities, as well as branch and structural mismatches. Such circumstances clearly affect the neglect of the potential of touristic economy as a whole, and consequently the potential of the Jahorina tourist destination, although this economic branch has a pronounced multiplier effect on the growth of the conjuncture, employment and GDP.

Optimization of urban performances is extremely important for the market valorization of tourist complex potential, as it creates the conditions for the revitalization of the yield position through diversification of supply. The revitalization of the yield position is unthinkable without urban situation of the conditions for infrastructure investments, new facilities on offer, traditional crafts and production, including complementary sectors which create circumstances for full utilization of capacities in season and "off-season".

Unfortunately, economic crisis is not the only limiting factor for creating of innovative urban concept and architectural recognition. Limiting factors are also lack of knowledge and good practice, neglect and marginalization of profession and aforementioned absence of a systematic approach, long-term vision and harmonization of branch, regional and strategic performances, which limits planners to create functional spatial plans for a dynamic and sustainable economic development. In the conditions of globalization, where market mechanism and the principle of competitiveness dominate, the incompleteness and imperfections of urban performances radically limit business opportunities of economic entities.

4. A NEW URBAN-ARCHITECTONIC VISION OF JAHORINA TOURIST DESTINATION IN THE FUNCTION OF GROWING BUSINESS PERFORMANCES AND DYNAMIZATION OF DEVELOPMENT

From the very beginning, development of the Jahorina tourist destination took place in the context of a poor country, where the first steps were taken by enthusiasts and proprietors inspired by the beauty of the landscape and the extraordinary natural and climate conditions of the complex. Although prosperity periods and certain significant events, before all the 1984 Winter Olympics, generated investment and development conditions for tourism, the approach and philosophy of development did not change significantly, as this resource is recognized as a complex rather than a tourist destination, which is not just a semantic difference.

In architectural and urban terms, the complex is understood as a set of objects and functional possibilities for realization of program contents and the needs of users, while destination im-

plies a broader context of attractions, organization and functions, which unambiguously indicates both larger functional possibilities and scope, as well as evident commercial potential and promotional recognizability. In that sense, Jahorina is still positioned as a complex today rather than a tourist destination, because of the vision of development up to date, planned interventions and inadequately perceived implications, but also because of negative political changes, the dissolution of the country, wars, devastation of infrastructure and facilities.

Due to improvisation and the absence of systematic approach in formulating a development vision, strategic decision makers have for many years preferred the development of skiing infrastructure and accommodation capacity without fully considering the possibilities generates integrated and harmonized infrastructure setting. Infrastructure setting cannot be optimized without a creative vision and strategic spatial planning that defines the construction conditions by urban-architectural mechanisms, broad enough, but also with important details and necessary coverage in spatial and substantive sense. Otherwise, all approaches that favor a single infrastructure segment significantly limit urban planners and architects, so that designed solutions appear as a limiting framework for valorization of potential.

The current state of urban and architectural performances is not at a level that would allow restructuring of the complex and its transformation into a prestigious tourist destination without redefining the concept of development and significant investments. The new approach should be conceived on contemporary spatial planning principles by formulating the interaction mechanisms of natural, social and economic resources to generate sustainable development.

In such an approach, it is important to create urban and architectural solutions, based on analytical view of the current situation, that will enable functional parameters for valorization so as to effectively use all the opportunities provided by: (1) existing facilities and infrastructure of the complex for creating of contents enabling diversification of offer and the growth of capacity utilization scale by taking advantage of all comparative advantages of natural and economic parameters, (2) social infrastructure in the immediate hinterland (East Sarajevo and Sarajevo), (3) complex hinterland; rural regions in the Northeast, East and Southeast and urban hinterland of East Sarajevo and Sarajevo in the West, and (4) contemporary science of spatial planning in order to formulate urban architectural determinants for achieving of sustainable development.

1. Existing facilities and infrastructure of the complex allow significant improvements and redefining of urban solutions, which should be used to interpolate sports, recreation, cultural events, seminars, congresses, student and professional events and meetings, art colonies, festivals and happenings, with interventions to improve and diversify the contents of operational logistics, in order to create conditions for diversification of offer and transition from seasonal to year-round business. Certainly, in all of this it is necessary to revitalize promotional activities, with serious systematic effort and rehabilitation of Jahorina as an Olympic mountain and rare and exceptional tourist resource. Focusing on urban-architectural settings and prioritizing new investments is a rational solution given the circumstances of the crisis and limited funding sources.
2. An impressive and representative social infrastructure in the near hinterland is undoubtedly developmental advantage that should be used to address strategic and operational constraints, both in the development and business domains, with intention to generate partnerships in the implementation of projected sustainable development goals.

3. The effort to create mechanisms for valorization of potentials of rural environment of gravitational regions in the East and urban hinterland of East Sarajevo and Sarajevo in the West by creating conditions for development of traditional businesses and crafts, their promotion and branding in the function of offer diversification, is of great importance, which will stimulate demand growth not only in the urban hinterland, but beyond.
4. Contemporary science of spatial planning has largely affirmed a multidisciplinary approach to the studying of this phenomenon, emphasizing the need to harmonize natural, social and economic performances in order to achieve long-term sustainable development, which is ultimately a strategic civilization act. Scientific propositions and good practice analysis in this field benefit small underdeveloped economies in formulating sustainable development strategies, with the phenomenology of space being an extremely complex and demanding issue that implies the necessity of continuous, sophisticated professional care and regulation, in order to generate optimal contribution to economic and social development, and maintain natural balance.

Encouraging is the fact that, both at global level⁵ (in Europe) and domicile (in the Balkans), operational efforts and measures have been evident for almost 90 years to affirm and apply scientific principles and propositions of functioning in this important area through normative and management actions, which resulted in the adoption of appropriate documents that sought to achieve certain harmonization and standardization of solutions. Thus, in 1933, the European Council of Spatial Planners (ECSP) adopted the Athens Charter, and in 1998 issued a new Athens Charter with the ambition to address the problems and recommend ways to address many challenges of spatial development at the threshold of the new century. The new Athens Charter has undergone appropriate adjustments and revisions at the 2003 and 2010 meetings, and the revised text entitled “European Spatial Planning Charter” was adopted at the ECSP Assembly held in Barcelona in 2013. It is expected that recognizing the importance of space will provide effective mechanisms for eliminating the negative implications that have generated incompetent managerial decisions and improvisations at the global and local level in the past on natural, social and economic structures.

5. CONCLUSION

This paper not only highlights the basic doctrinal and methodological determinants of urban-architectural solutions, procedures and actions, but also addresses their importance in the process of creating effective economic development strategies, with basic message that only an interdisciplinary approach can reliably view all relevant aspects of this complex phenomenon. Confirmation of principle points of view is also found in the analysis of economic position of the Jahorina tourist complex, where it is evident that one of the important causes of the crisis is the neglect of the importance of spatial planning, urban and architectural performances in profiling infrastructural conditions for a sustainable development. Neglecting the importance of spatial planning, urbanism and architecture has negative implications for development, because infrastructure often appears as a limiting factor of diversification and business adaptation to changing economic conditions.

As in the current conditions of globalization, competition, information and mobility of factors are increasing - the risks of survival of companies, industrial branches and sectors are also increas-

⁵ Development of European strategies and spatial development and planning policies is carried out through activities of two central European organizations – Council of Europe and European Commission.

ing, if available potentials in the necessary and sufficient volume are not valorized. Valorization of potentials is influenced by numerous factors and mechanisms of combining them within a given framework, that is, space, and above all material resources, knowledge and organization.

Everything is located in space; nature, society and economy with dynamic interactions that disrupt the balance of the system by generating risks that endanger functioning and threaten the survival of the entities individually and of the system as a whole. This knowledge has primarily contributed to positioning the principle of sustainable development as a universal point of view and the principle of civilization, in which the dimension of space has a dominant importance and determination. Because of the risks that complicate functioning and endanger survival, planning that effectively adjusts space performances and creates conditions for optimizing potential valorization and sustainable development is required.

Due to the lack of systematic approach and sophisticated vision, urban solutions, which position Jahorina primarily as a ski resort are preferred, which is not enough for sustainable development in areas with a stable season of six to eight months or longer, without urban solutions, infrastructural and business portfolio extending the season from ten to 12 months. In addition to other shortcomings in the business portfolio, neglecting the importance of architectural recognition of facilities, landscapes and environment has significantly limited the positioning of this remarkable natural treasure as a prestigious and prosperous tourist destination.

REFERENCES

- Fukujama, F. (2002). *Kraj istorije i poslednji čovjek*. Beograd: CID, Romanov.
- Korica, R. (2008). *Infrastruktura, saobraćaj, urbanizam, arhitektura*. Beograd: Arhitektonski fakultet Univerziteta u Beogradu.
- Saks, D.D. (2014). *Doba održivog razvoja*. Beograd: CIRSD and JP "Službeni glasnik".
- Tuševljak, S. (2014). *Treba (li) nam nacionalni program izlaska iz krize - Šta (ni)smo mogli to nismo razumjeli*. Beograd: Srpska akademija nauka i umjetnosti.
- Tuševljak, S. (2017). *Institucionalna ekonomija danas – šta (ne) možemo uraditi bolje*, Zbornik radova - Naučni skup „Ekonomija danas, Institucije i ekonomija - šta (ne)možemo uraditi bolje“, Univerzitet u Istočnom Sarajevu, Andrićgrad, 1. i 2. septembar 2017.
- Tuševljak, S. & Tomić, Ž. (2015). *Doctrinal and management controversies of debt growth of small open economies in terms of globalization -What must or need not the Republic of Srpska and Bosnia and Herzegovina do?* Univerzitet Nižnji Novgorod
- Simović, M., Jovašević, D. & Simović, V. (2016). *Privredno kazneno pravo*. Istočno Sarajevo: Pravni fakultet.

A SYSTEMIC APPROACH TO THE MANAGEMENT OF MUSEUM HERITAGE: THE CASE OF BASILICATA REGION MUSEUM POLE (ITALY)

Sonia Ferrari¹ 
Nicolaia Iaffaldano² 
Vito Roberto Santamato³ 

DOI:

Abstract: *The main aim of this paper is the definition of the distinctive features of museum networks and systems with a focus on the potential of specific organizational and management solutions in terms of optimization of museums' effectiveness and efficiency, especially in Italy.*

Research regarding the Museum Pole of the Basilicata Region (MPBR) in Southern Italy will be presented. The MPBR is recognized as a successful and innovative form of large-scale (compatible with the limited size of the region) sharing of strategies, services, organizational structures, cultural planning, scientific contents, and technical and administrative tools, also following the nomination of Matera as 'European Capital of Culture 2019'. The research is based on existing data and qualitative interviews with the MPBR management and other stakeholders.

Keywords: *Museum Network, Museum System, Systematic Approach.*

1. INTRODUCTION

Thanks to the rise over the last decades in Italy of a large number of museum networks and systems, although with very different characteristics from each other, the systemic approach to museum heritage management has been brought to the attention of scholars, especially in the economic, business and management fields. Reticular organizational structures and management models based on the systemic perspective have also been formally recognized as the best solutions to optimize the effectiveness and efficiency of museums, especially in Italy. In fact, Italian museums are mostly small, widely scattered all over the territory and mainly of local interest. In addition, they are burdened by heavy internal financial, organizational and productive constraints.

The main aim of this paper is the definition of the distinctive features of museum networks and systems with a focus on the potential of specific organizational and management solutions in terms of the optimization of museums' effectiveness and efficiency. For this purpose, the business, economics and management literature will be the basis to outline the theoretical framework, with particular reference on the one hand to the business networks and, on the other hand, to the characteristics of the Italian museum heritage. Subsequently, the attention will be focused on the implementation of museums reticular structures and on their management in a systemic approach.

¹ University of Calabria, Department of Business and Law Science, Campus di Arcavacata, 87036, Rende (Cs), Italy

² University of Bari, Ionian Department of Law, Economics and Environment, Via Lago Maggiore ang. Via Ancona, 74121, Taranto, Italy

³ University of Bari, Department of Economics, Management and Business Law, Largo Abbazia Santa Scolastica, 70124, Bari, Italy

In particular, the paper aims to:

- clarify the distinctive features of museum networks and systems, considering the paradigms of the vital systemic approach;
- identify the main probable advantages achievable through the implementation of these solutions, also considering the literature that postulates the integrated enhancement of the territory and its cultural resources for the creation of innovative tourist routes. These routes would be richer in terms of capillarity and significance compared to the common tourist routes. In addition, this perspective would make it possible to obtain a more adequate spatial and temporal distribution of the tourist flows in order to achieve economic, social and cultural sustainability;
- indicate the most appropriate methods for implementing and operating museum networks and systems;
- identify the most critical issues with regard to Italian experiences.

Research regarding the Museum Pole of the Basilicata Region (MPBR), in Southern Italy, will be presented. The MPBR is recognized as a successful and innovative form of large-scale (compatible with the limited size of the region) sharing of strategies, services, organizational structures, cultural planning, scientific contents and technical and administrative tools, also following the nomination of Matera as 'European Capital of Culture 2019'. The research is based on existing data and qualitative interviews with the MPBR management and other stakeholders.

2. LITERATURE REVIEW

The post-modern change in the socio-economic context, with particular regard to market conditions, has led companies to modify their productive and competitive strategies towards an inter-company and network cooperation (Albertini, 1990; Lorenzoni, 1897; 1990; 1992; Mariti, 1980). As a consequence, starting from the last twenty years of the twentieth century, inter-organizational structures have been spontaneously experimented by small Italian companies. In the current era of the experience economy (Pine & Gilmore, 2000), the network is becoming the most widespread form of production and consumption (Rullani, 2008; Thorelli, 1986; Vacca, 1986; Vicari, 2008).

In the literature the terms "museum network" and "museum system" are not clearly defined. Therefore, it seems appropriate to propose, even if briefly, a differentiation between these terms referring to the paradigms of the vital systemic approach (Golinelli, 2011). A museum network can be defined as a structural arrangement produced by the establishment of cooperative ties among several museum organizations, or the set of museum-components and the relationships between them. In a holistic perspective, a museum system can be seen as a management structure: it will originate when some of the pre-set relationships between the museums of the network are actually implemented to achieve a specific objective. The museum system can therefore be defined as a structure-network of active museums. Therefore, multiple systems (or sub-systems) can emerge from a museum network, depending on the specific activity that they aim to carry out jointly. It should be noted that the term *network* will be used to indicate systemic management models based on network organizational structures (Golinelli, 2012; Iaffaldano & Mariella, 2014; Montella, 2003 and 2009).

From a cultural point of view, the Italian museum collections are mutually complementary because they come from places that are culturally cohesive and widely spread throughout the

territory. For this reason, the networks are decisive in making explicit the most important historical connections between the collections of each museum and between these and the territorial context. This is also the prerequisite for developing landscape enhancement policies, according to an integrated and systemic approach, so as to capture the strategic value of places (Bonel et al., 2005; Ferrari, 2013; Ferrari & Gilli, 2015; Franch, 2002; Gregori, 2005; Iaffaldano, 2013; Cirillo, 2016; Johnson et al., 2015; Martini, 2005; Pencarelli & Splendiani, 2008; Soren, 2009). A satisfactory experience of places needs to be facilitated with routes offered thanks to special tools; they could be the Italian museums thanks to their widespread diffusion and local character. The strategy of the museum-territory could be very useful for this purpose (Dragoni, 2005; Montella, 2003).

Also the recommendations of the Italian ministerial decrees move this direction in that they face the theme of the relationship between museums and territory warning that “the territory as a widespread museum [...] can be enjoyed and respected only if it finds in the museum-institute a suitable location for the interpretation and communication of its values” (DM May 10, 2001). Also, the International Cultural Tourism Charter: Managing Tourism at Places of Heritage Significance (ICOMS, Paris 1999) pursues the enhancement of systems for the management of cultural heritage to make single and overall meanings accessible to users (Hu, 2019).

Moreover, the networks seem to be indispensable to overcome the financial, organizational and productive constraints and the structural economic limits due to the low number of visitors (Bagdadli, 1995, 1997 and 2001). Indeed, it could help to achieve decisive economies of scale, as well as saturation, specialization and learning economies. At the same time, the network would make it possible to achieve objectives linked to differentiation strategies. It would be particularly effective for the implementation of differentiated marketing policies to intercept the multiple interests that move the different clusters of demand and, therefore, to attract more and more visitors. With reference to the promotional activities, the network would allow the prestige to increase and also enhance the image of the whole and of each museum-component (Bollo, 2012; Zan, 1999).

3. THE BASILICATA REGION MUSEUM POLE RESEARCH METHODOLOGY

The MPRB has been analyzed as a particularly interesting case with respect to the research objectives of the paper. This case, that has been recognized by many as a successful and innovative form of large-scale sharing of strategies, services, organizational set-ups, cultural addresses, scientific contents, and technical and administrative tools, therefore, seems to be a model. From this case it could be possible to obtain appropriate design and implementation suggestions.

A qualitative empirical investigation responding to exploratory aims has been carried out by the authors with the aim of providing a description of the composition process, the functioning and the results achieved by the museum system, with a focus on its main strengths.

The analysis of the case was first conducted by reviewing the main studies on the subject in the literature (Bagdadli, 1997; Cabasino & Trimarchi, 1997; Gioli, 2001; Pezzoni & Vago, 2000). The information acquired was then integrated analyzing institutional documents and conducting in-depth interviews with stakeholders - operators in the tourism and cultural heritage sectors. This approach was chosen because the qualitative method is more interactive, in-depth and sensitive in the study of human behaviour, attitudes, ways of thinking and motivations. The

survey was based on 10 in-depth face-to-face and semi-structured interviews, each lasting between 40 and 60 minutes. All interviews were recorded and transcribed the same day to ensure minimal information loss. A subsequent step was to structure meanings using narrative, leaving the stories of participants as they were told.

Data analysis followed a deductive coding approach. The data were managed by hand through a thematic analysis. The three main themes identified are as follows:

- *how MPRB was born and has evolved,*
- *impact of the nomination of Matera as 2019 European Capital of Culture (ECC) on the MPRB,*
- *effects of the new management method on MPRB operational results.*

These themes are useful to study the main objects of our research.

4. FINDINGS AND DISCUSSION

4.1. How the MPBR was born and has evolved

As in all Italian regions, the MPBR was born thanks to the Franceschini Reform between 2014 and 2015 (Marzano & Castellini, 2018). Coordinated by the Directorate General of Museums, the Pole is the connection point between the center and the periphery; it aims to foster the dialogue between state and local authorities and between public and private museums for the construction of the regional museum system. The MPBR coordinates human, technological and financial resources of various museums in order to offer the public cultural and exhibition activities, quality reception and educational services. It supports the creation of local networks, that involve different actors for the development of cultural itineraries and the growth of the territory.

The PMRB is one of the smallest but also one of the most homogeneous Italian poles. The network is mainly composed of archaeological museums (8) and also by other important but smaller museums, and an exhibition site in the Ducal Palace of Tricarico. The core of this homogeneous network is the National Museum of Medieval and Modern Art in Palazzo Lanfranchi, that is a historical-artistic museum. It was, as one interviewee tells us, the fulcrum of the process of appointment of Matera as European Capital of Culture 2019.

The work preceding the birth of the Pole was carried out around this museum (36,833 visitors in the year 2018). *This museum has strategically chosen to open itself to the community. This truly new methodology represented the basis of the Matera-Basilicata 2019 Foundation (which handled the entire candidature process). In the first years of building the candidature it was a scientific and operational committee. This method of openness, total accessibility, involvement, participation, and concrete work with the community was immediately shared by the other stakeholders and it was, as one interviewee explains, the distinctive trait for the construction and then the implementation of the candidacy, of Matera-Basilicata 2019.* Another interviewee adds that: *the networking process began with some events, the week of culture, the night of the museums, the day of the landscape, creating a coordinated program with all or almost all the museums. We involved associations and protagonists of local cultural life in this program. Therefore, the MPBR museums can be considered as museums of the territory, or museums that can intersect the interest of the major stakeholders with those of local community.*

Regarding the existence of networks of operators in Matera, four of the interviewees confirm that there are several collaborative networks in different sectors. *However, we are told by one of them that, there is not a large intersectoral network. In particular, there are many micro-networks that work and others that do not work. In tourism, specifies another, a network is needed. However, adds one interviewee, there is not a subject able to coordinate all the promotional activities.*

The individualism of the various subjects cannot be overcome. Each subject has its own cartel, formed by other subjects that act as its satellites; the networks are not created among peers, one of the interviewees complains.

4.2. Impact of the nomination of Matera as 2019 European Capital of Culture (ECC) on the MPRB

In 2018 the visitors of the MPBR were 262,000, with revenues of 219,000 Euros. These data are defined as “very positive” by the Pole management, and they confirm the boom in visitors registered in Matera in the previous year.

The extraordinary challenge and the notable responsibility were not only of those who led the process of creation of the network, but also of all the institutions that joined them to achieve the result. According to one interviewee, *it became a shared cultural working method.*

The objective of creating a museums network in a small, limited and homogeneous environment such as that of Basilicata could be concretized, while elsewhere it would be much more difficult. Museum Poles with 40, 45 or 50 museums, in fact, cannot really put their structures into a network, because they are different and scattered, they have heterogeneous needs, perspectives and problems. Instead, with the exception of Palazzo Lanfranchi, our museums are more homogeneous. The latter, however as one of the interviewees explains, was easily included in the network having been the engine of the whole process.

The network was the element that led to the nomination of Matera. The ECC recognition was obtained by the whole region, by all the 130 municipalities in the region, but also by the neighboring regions, Puglia, Calabria, and Campania, he/she goes on.

But the network was not born only thanks to the nomination: it was the result of the Franceschini Reform, which aims at the concrete realization of the National Museum System, says an interviewee. And he/she adds: So, a certain direction, that of the network, had already been started and it was easy then with the arrival of the new collaborators, archaeologists and architects to build a wider team. The main part of the ECC program was carried out together with the MPBR.

As for the legacy of the ECC event, one of the interviewees says something very important: *We adopted a new method and way of thinking, which is now the task of all those who live in our area to carry on.*

4.3. Effects of the new management method on MPRB operational results

Our museums have no autonomy in any sense, so the MPRB is the main subject in the organization and management of the activities. Being a Pole allows us to achieve certain results, we are told. An interviewee says: Many museums in Basilicata cannot be autonomous because they draw just a few

tens of thousands of Euros a year. The museums are managed with a portfolio logic and the Pole acts as the implementing entity for the activities that each museum carries out. The expenses of the museums are in charge of the Pole, which collects the revenues. The efficiency and effectiveness of the system are, however, limited by bureaucratic problems and lack of personnel.

The strategic programming is common. The result is that, we are told, every museum has a different positioning, a precise identity, but the objective is not to increase the revenues, an interviewee says.

The museums of the Basilicata Region have been set up and proposed to the public not as treasure chests in themselves, but as episodes of a story that continues in the city and in the territory, as a door through which to introduce the visitor to the uninterrupted diffuse museum, in which the real Italian competitive advantage consists. To this end, the museum-territory strategy was implemented and considered decisive for the systemic enhancement of the historical-cultural heritage of the Basilica, the management of the Pole explains. However, there are no joint tickets and shared price policies. In addition, the museums do not have online reservations or forms of collaboration with tour operators.

To complete this picture about the BRMP, we must add that some of the interviewees stress that these territories cannot accommodate large flows of visitors, there is the risk of overtourism and a potential lack of tourism sustainability. *There is a pressure on the Murgic plateau, rich in rock churches; they cannot anthropize the area of the plateau, one of the interviewees explains.*

5. CONCLUSION

The paper presents findings that have implications both at a theoretical and a managerial level. In fact, it illustrates the peculiar characteristics of the Italian museum heritage and aims to focus on the potentially achievable advantages related to the adoption of the network as organizational solution and to the implementation of its systemic management. The MPBR case is illustrated as an empirical finding of the theoretical reflections. It is recognized by many as a successful and innovative form of large-scale sharing of strategies, services, organizational structures, cultural addresses, scientific contents, and technical and administrative instrumentation.

The study highlights that the network could allow Italian museums, that are widespread throughout the territory, mainly of local interest and burdened by heavy internal constraints, to optimize management effectiveness and efficiency. The network can reduce the production costs, enhance the overall production capacity and increase the qualitative and quantitative level of the offer. The Pole museums can attract a growing number of visitors and achieve significant economies of scale. As a consequence, it could obtain important plant and business costs reductions and revenue increases.

Furthermore, network museums could make their cultural heritage more accessible, not limiting their value to the aesthetic-formal aspect. This could happen because the network significantly helps to make explicit the historical connections between the objects of each museum and between them and the context of origin, presenting them to the public as material testimonies of the culture spread in a certain time and place. It is legitimate to expect from this information-educational function the increase in the human capital of visitors, the strengthening and the dissemination of the community identity and, therefore, a greater fulfillment of the public func-

tion of Italian museums. At the same time, the network could allow each museum to strengthen its image and to make use of the integrated product created to better intercept the multiple interests of the different demand clusters and, therefore, to attract an ever-increasing number of visitors. Finally, the entire territory would be enhanced and a support for marketing and place branding policies would be offered.

The study presents a model for the establishment of a regional museum network and for its management in a systemic perspective. In the future, this could become a reference model to provide public decision makers in the cultural sector with useful suggestions related to the design and development of such processes.

REFERENCES

- Albertini, S. (1990). Modello «strategia-risorse-strategia» e forme di coordinamento a rete. *Economia e Politica Industriale*, 65, 147-180.
- Bagdadli, S. (1995). Cooperazione o isolamento? Verso una nuova organizzazione dei musei italiani. *Economia & Management*, 7, 110-121.
- Bagdadli, S. (1997). *Il museo come azienda. Management e organizzazione al servizio della cultura*. Milano: Etas Libri.
- Bagdadli, S. (2001). *La rete di musei. L'organizzazione a rete per i beni culturali in Italia e all'estero*. Milano: Egea.
- Bollo, A. (2012). *Il marketing della cultura*. Roma: Carocci.
- Bonel, E., Moretti, A., Rispoli, M., & Tamma, M. (2005). I prodotti culturali in una prospettiva economico-manageriale. *Economia della Cultura*, 4, 497-512.
- Cabasino, E., & Trimarchi, M. (1997). Musei e territorio: archivi della memoria storica e poli di sviluppo e di comunicazione culturale in Europa. *Economia della Cultura*, 2, 146-149.
- Cirillo, N. (2016). An integrated approach to the valorization strategy of cultural heritage. In: F. Bifulco & T. Russo Spena (Eds.). *Managing cultural heritage*. Milano: McGraw-Hill.
- Dragoni, P. (2005). Antimarketing dei musei italiani? *Sinergie*, 23 (68), 55-73.
- Ferrari, S. (2013). An experiential approach to differentiating tourism offers in cultural heritage. In: M. Smith, & G. Richards (Eds.). *Routledge Handbook of Cultural Tourism*. Oxon, UK: Routledge, 383-388.
- Ferrari, S., & Gilli, M. (2015). From the Museums of Objects to the Virtual Museums: An Opportunity for Local Tourism Development. In H. Eto (Ed.). *New Business Opportunities in the Growing E-Tourism Industry*. Hershey, Pennsylvania (USA): IGI Global Publication: 255-272.
- Franch, M. (a cura di). (2002). *Destination management. Governare il turismo tra locale e globale*. Torino: Giappichelli.
- Gioli, A. (2001). Les musées italiens entre le public et le privé. In AA.VV., *L'avenir des musées, Réunion des musées nationaux-musée du Louvre*, Paris.
- Golinelli, G.M. (2011). *L'approccio sistemico vitale al governo dell'impresa*. Vol. II Verso la scientificazione dell'azione di governo, Padova: Cedam.
- Golinelli, G.M. (a cura di). (2012). *Patrimonio culturale e creazione di valore*. Padova: Cedam.
- Gregori, G.L. (2005). Quali soluzioni tecnico-organizzative per il soddisfacimento di una domanda 'integrata' di turismo: dai sistemi turistici locali al franchising territoriale. *Sinergie*, 23 (66), 55-77.
- Hu, J. (2019). Exploration on the Development Direction of Museum Management in the New Period. *Management Science and Research*, 8, 109-112.

- Iaffaldano, N. (2013). Il 'museo diffuso' e le risorse immateriali quali determinanti della competitività di una destinazione turistica culturale. *Esperienze d'Impresa*, 2, 43-67.
- Iaffaldano, N., & Mariella, G. (2014). The proposal of a model to build a museum network and its management in a systemic perspective in Apulia. In conference book proceedings of the 17th Toulon-Verona Conference *Excellence in Services*, Liverpool John Moores University, Liverpool, England, August 28-29, 2014, pp.179-196.
- Johnson, L., Becker, S. A., Estrada, V., & Freeman, A. (2015). *NMC horizon report: 2015 museum edition*. The New Media Consortium.
- Lorenzoni, G. (1987). Costellazioni di imprese e processi di sviluppo. *Sviluppo e Organizzazione*, 102, 59-72.
- Lorenzoni, G. (1990). *L'architettura di sviluppo delle imprese minori*. Bologna: Il Mulino.
- Lorenzoni, G. (ed.). (1992). *Accordi, reti e vantaggio competitivo. Le innovazioni nell'economia d'impresa e negli assetti organizzativi*. Milano: Etas Libri.
- Mariti, P. (1980). *Sui rapporti tra imprese in un'economia industriale moderna*. Milano: FrancoAngeli.
- Martini, U. (2005). *Management dei sistemi territoriali. Gestione e marketing delle destinazioni turistiche*. Torino: Giappichelli.
- Marzano, M., & Castellini, M. (2018). The Reform of the Italian Ministry of Cultural Heritage: Implications for Governance of the Museum System. *The Journal of Arts Management, Law, and Society*, 48 (3), 206-220.
- Montella, M. (2003). *Musei e beni culturali, verso un modello di governance*, Milano: Electa-Mondadori.
- Montella, M. (2009). *Valore e valorizzazione del patrimonio culturale storico*. Milano: Electa-Mondadori.
- Pencarelli T. & Splendiani S. (2008). Il governo delle destinazioni e dei prodotti turistici: analisi di alcune esperienze, *Mercati e Competitività*, 2, 91-121.
- Pezzoni, L., & Vago, M. (2000). Musei italiani: il sistema vincente. *La Rivista del Turismo*, 5-6, 29-49.
- Pine, J.B., & Gilmore, J.H. (2000). *L'economia delle esperienze*. Milano: Etas Libri.
- Rullani, E. (2008). L'economia della conoscenza nel capitalismo delle reti. *Sinergie*, 26 (76), 67-90.
- Soren, B. J. (2009). Museum experiences that change. *Museum Management and Curatorship*, 24 (3), 233-251.
- Thorelli, H.B. (1986). Networks: between market and hierarchies! *Strategic Management Journal*, 7(1), 37-51.
- Vaccà, S. (1986). L'economia delle relazioni tra imprese: dall'espansione dimensionale allo sviluppo per reti esterne. *Economia e Politica Industriale*, 51, 48-86.
- Vicari, S. (2008). Conoscenza e impresa. *Sinergie*, 26 (76), 43-66.
- Zan, L. (a cura di). (1999). *Conservazione e innovazione nei musei italiani. Management e processi di cambiamento*. Milano: Etas Libri.

THE EVOLUTION OF THE ROMANIAN PASTRY. TRADITIONS, EUROPEAN INFLUENCES, NEW TRENDS

Adina Săcara-Onița¹
Andra-Teodora Porumb²
Ciprian Beniamin Benea³

DOI:

Abstract: *In the last 30 years, the food industry and especially the pastry industry has experienced a spectacular dynamic in the landscape of the Romanian economy. Few of the big companies in the communist period in the field of bakery managed to maintain and adapt to the new, most of them went bankrupt or divided into smaller departments. In the first years after the revolution, Romanian investors look to invest mainly in bakery units specialized in bread, sometimes in simple salt or sesame bagels, white or black bread rolls production. The pastry was not perceived as a profitable business, especially due to the lack of qualified personnel and the lack of ingredients. The communist leadership considered the pastry products to be luxury products, for which raw materials would have been needed, but these were mainly sent for export. In this paper we intend to show the recent evolution of the units in the bakery field, highlighting three major trends: restoring in the foreground the Romanian tradition from the interwar period with the reinterpretation of the classic recipes; taking over brands, concepts and products that have been successful in France, Italy and Germany and which are the emblem of a western lifestyle, with the rapid adoption in the confectionery and chocolate fields; adaptation to the influence of Hungarian and German gastronomic culture - especially in Transylvania. Last but not least, we will show that pastry is nowadays reluctant for customers, especially due to the use of sugar and margarine-type fats. The new trend is the introduction of butter in pastry following the French model, but this aspect involves high costs, these new products can only be purchased by certain social classes. In our opinion, genuine pastry will become a niche product.*

Keywords: *Bakery Field, Brand, Organizational Identity, Advertising Strategy, Web Site, Food Safety.*

1. INTRODUCTION

The bakery, and later the pastry, have had a spectacular evolution over the centuries. In this paper we intend to show how these sectors evolved in Romania, the influences that marked them, their current status and development prospects. These are extremely dynamic sectors, with over 5,000 producers, which in the last years have registered a turnover of about 2.5 billion Euro/ year.

2. SHORT HISTORY OF PASTRY

The pastry products were born from the handling of bread dough, being served at ceremonies and solemnities. In the Greek and Roman world, bakers have started to make cakes using eggs, wheat or oatmeal, milk, honey and wine, almonds, turmeric, figs, nuts and various types of

¹ University of Oradea, Faculty of Economic Sciences, Department of International Business, 1 Universităţii Street, Oradea, 410087, Bihor, Romania

² University of Oradea, Faculty of Economic Sciences, Department of International Business, 1 Universităţii Street, Oradea, 410087, Bihor, Romania

³ University of Oradea, Faculty of Economic Sciences, Department of International Business, 1 Universităţii Street, Oradea, 410087, Bihor, Romania

cheese. In fact, it is said that the first cakes prepared were in the form of a pyramid and were brought by the Greeks as an offering to Dionisos.

After 1000 AD, Arab merchants brought spices and citrus fruits to Europe. The bakers began to use more and more cinnamon, ginger, rice, sesame, cloves, nutmeg. In the thirteenth century, the Turks brought pastry products to Europe. Also, in the Middle Ages, the Crusaders bring sweet recipes to Europe, as well, which will be adapted by the chefs of the time.

At the end of the sixteenth century, with the discovery of the sugar cane, sugar begins to be used in the composition of the pastry products. Thus, the production of chocolate, battered dough, pastry and cream cakes develops, and the pastry business advances. The French import sponge cake, macarons or marzipan from Italy. Ice cream is also created in Italy, and in 1566 the guild of bakers appears. In Italy and France, the pie sheets are perfected. At the French royal court, pastry masters invented and cooked pastry products for the kings of France.

In 1645, yeast was invented and more and more types of dough were produced. In the 17th century, the term „dessert” appears, used to name the sweets served at the end of the meal. Cakes are baked, at the beginning of the next century, butter cakes, and at the beginning of the 19th century, egg and chocolate cakes.

It is said that the one who raised the pastry to the rank of art was Marie-Antoine (Antonin) Carême, the cook of Napoleon, of the King of England, George IV, or of the Tsar of Russia, Alexander. He also installs the toque that the bakers and cooks will wear.

At the end of the eighteenth century in Paris there were around 100 bakeries, and in France more than 40,000. While the pastry and confectionery products had previously been reserved exclusively for the nobility, with the industrial revolution more and more people had access to these products.

In the nineteenth century, in the European countries, pastries and confectioneries knew an unexpected success, even becoming meeting places for the bourgeoisie, cultural people and politicians of the time. The confectioners and pastry makers were educated in Paris, Vienna, Berlin, to then work in the capitals and big cities of the countries of origin and to develop their own recipes.

3. THE PANIFICATION SECTOR IN ROMANIA

Romanians have a true cult for bread, which is in close connection to beliefs, traditions and customs. Bread is generally used for holidays and events (weddings, baptisms, funerals). Ordinary people used to eat polenta, worked hard for earning their bread and never got to have sufficient bread until some decades ago. It was only at the end of the 19th century and at the beginning of the 20th century that bread and special bakery products (rolls, buns) were produced industrially, in the army's bakery units. These were the first high capacity production units, called „manutanțe” (storehouses).

After the First World War, the first bakeries were created, and they used blenders and steam-heated ovens, the majority of which were “Dampf” type. Thus, the transition was made from manual kneading and from the earth oven, heated with wood, to the first modern devices, meant

to increase both the quantity and the quality of the bread. In 1935, 36 mechanized bakeries functioned in Romania, with a number of 700 employees. Bread became a basic food product.

According to the data obtained by the daily newspaper *Gândul* from the National Institute of Statistics, a Romanian currently eats 546 grams of bakery and pastry products per day. This figure places Romania above the European average, according to the data of the last Eurobarometer, which shows that a European consumes 300 grams of bakery and pastry products.

ROMPAN President Aurel Popescu said that in 2018 in the milling and bakery industry, there were around 60,000 employees, with 10,000 less than in previous years, due to the massive migration of the Romanian population to other European countries and also due to the closing of vocational schools.

In Romania there still is a tradition of preparing bread in the house. From the market analysis conducted by the research company Gallup we find that 28% of the participants stated that they prepare bread and bakery products in their own homes, especially those in the rural area (39% in the rural area and 19% in the urban area). The frequency is once or twice a week (43%), once a month (23%), once every 2-3 months (11%) and daily (1%). More than half of them produce around 1-5 kg / month, 15% produce 6-10 kg / month, 9% below 1 kg / month. On average, people for whom bread baking is a hobby produce 7.6 kg / month. Bread is produced in homes, especially in the regions of Muntenia, Oltenia and Moldova (over 80% of the total quantity), followed by Crișana-Maramureș and Banat. The method of preparation is largely traditional (manual kneading and oven baking), only 4% of the respondents use household appliances. The reasons invoked would be the taste, the lower costs, the health, and having the ingredients from own crops.

Even if many imported bakery products and frozen bakery products have recently entered the Romanian market, being sold mainly in supermarkets, Romanians prefer local products. The main reason is their concern for health, and the frozen products contain many chemicals (E numbers, acidifiers and even bleaching agents).

Care for health is one of the premises that underlie the innovation attempts in the bakery field. If up to now the producers of bakery products aimed at optimizing quality at a low price, now it is intended to reap benefits in terms of nutrition, taste and health. Almost all companies, and especially the new ones, try to offer new products, using natural spices instead of chemicals. Researchers in the bakery field (Teodorescu, Toma, Pistol, 2019) claim that many spices (pepper, bay leaf, cloves, cinnamon, rosemary) have a therapeutic and nutritional potential thanks to the antimicrobial, antioxidant and anti-inflammatory effect, as well as technological potential since they work as true natural preservatives. However, they are also used in the pharmaceutical industry, being part of many herbal remedies.

4. THE PASTRY SECTOR IN ROMANIA

In Romania, the transition from bakery to pastry takes place in the eighteenth century, when chefs are beginning to be concerned with the creation of sweet products, to be served at the end of the nobles' meals. The oldest cookbook in Romanian Country dates from the 18th century. It was written during Constantin Brancoveanu's reign and included bread and dessert recipes. In the capital, in the eighteenth century, there were already places where food and desserts could be served. The most famous location in Bucharest where pastry and confectionery products

could be served is „Capşa” (located on Calea Victoriei). It had a restaurant, a cafe, a confectionery and a hotel, it was frequented by the capital's elite, famous artists and politicians and became the supplier of the Romanian, Serbian and Bulgarian royal houses. It is said that Emperor Franz Josef, Tsar Alexander II, Kaisers Wilhelm I and II, former French President Raimond Poincaré or Greek Prime Minister Eleftherios Venizelos tasted the products prepared here by Emil Frederic, a confectionery chef taught in Paris and who regularly brought samples of the latest products made in Paris. Capşa was located on a place where in the seventeenth century there used to be the home of a great Romanian boyar. In 1830 the house was bought by the former cook of the ruler Grigorie IV Ghica, an Italian who opened an Italian-Oriental restaurant and a ballroom. Then the house was taken over by the Capsa brothers. One of them learned the job at the „Boisier House” in France. The success of Capşa House has led to the increase of the number of confectioneries and the emergence of several candy and chocolate factories.

Bucharest has been nicknamed, since the 19th century, the city of confectioners. There were then about 15 confectioners. The most successful were the confectioners of Venice, Germany and Turkey, which mainly served ice cream and sherbet. The best rated were the confectionery of some Italians („Giovanni” and „Comorelli”) and a French confectionery („Elefterescu”), where fine cakes were served.

During the interwar period, the number of confectioners and cafés increased significantly. The pastry chefs, who had attended schools already famous in France and Italy, proposed reinterpreted products and own creations, prepared with local ingredients. They had their own recipe book, with specialties that were only available in their stores, handwritten recipe books handed down to the disciples. In order to open a pastry shop or a confectionery one had to have attended a school and obtained a qualification.

After nationalization (1940-1950), all these units get into the state's ownership, more specifically that of the „Cooperativa”, and the patrons and pastry masters become mere employees.

During the communist era, the state factories in the field of bakery were organized at national level and centralized. Particular emphasis was placed on the production of bread, less white, blacker. The main products were: white, black and bran rolls, sugar buns, cocoa buns, „brânzoici” (sweet cheese rolls), and buns with different fruit fillings. The pastry products were sold through their own network of shops along with the bakery products.

The pastry products were seen as luxury products, accessible only to political activists or could be obtained very difficultly, through interventions, in the last period before the revolution. A plus of that period was the lack of harmful additives from the post-December period. The quantity produced was not big, the raw material was sent for export to pay off the external debt, but good quality raw material was processed. The creams were processed from local fruits, they were made from milk and eggs, and so was the dough.

The equipment of these production units was rudimentary because the Ceausescu regime did not want to invest in state-of-the-art foreign machinery, and the labour was cheap. With the revolution, the centralized structure of the food area collapsed. The old management was changed, the commercial relations with the raw material suppliers were stopped. The production units were grouped into smaller units, some of them continued their initial activity, others were destroyed, abandoned. The mammoth units could not adapt to the challenges of the market econ-

omy. Foreign investors, through different investment funds, have purchased and refurbished some production units (Titan, Vel Pitar, Băneasa). The production units were relocated to the outskirts of the big cities or in the surrounding areas, leaving room for commercial spaces, offices or dwellings. The commercial spaces, i.e. the former bakery and pastry shops located in the central areas, were rented or sold, getting into the hands of real estate opportunists, conclusive examples being those of Titan factory in Bucharest or Pamora factory in Oradea.

In the first years after the revolution, Titan, Vel Pitar and Baneasa were the most important companies in the field of bakery and pastry in Romania. They made large-scale bakery products, but also „cozonac” (sweet bread), pasca (Easter cheesecake), sweet cheese rolls, buns, small sweet rolls, crackers, salty pastries, pretzels, pies, which they first sold in their own stores, and then through supermarket networks. Romanians are big consumers of cozonac (traditional dessert, preferred by over 80% of Romanians according to ROMPAN statistics - Romanian Patronage of the Milling, Bakery and Floury Products Industry), Easter cheesecake (the star of the Easter celebrations), crackers, salty pastries, pretzels, which they sell even nowadays, especially during holidays and events (weddings, baptisms, funerals).

After they had known success, companies such as Ana Pan (pastry company founded in 1990) and Dobrogea Group (first a milling and bakery company, created in 1961, then a bakery and pastry factory) introduced on the Romanian market the franchise with pastry products. In fact, the public is increasingly focusing on quality products and brands.

Last but not least, famous companies in the 1900s are reopened by the descendants of the founders. For example, the PETRU Bakery-Simigeria, founded in the capital in 1937, reopened after the Revolution, out of the desire of the descendants of the baker named PETRU to revive the traditions and recipes forgotten during the communist era. Today there is a PETRU store in almost all the big cities of the country, where, in addition to the famous sweet and salty savory specialties, they sell pizza, sandwiches and drinks.

Also, famous companies from abroad, for example PAUL bakery (founded in 1889 in Lille - France) and who had gained success due to concepts such as opening the workspace to let customers see how the products are baked, have opened franchises worldwide. The refinement and the quality of the products of this brand have conquered the Romanian profile market. The brand, which entered the Romanian market in 2008, also has a catering service, delivering products to companies and private clients and even organizing candy bars for events, parties and anniversaries. Another large company, Fornetti, of Hungarian origin, has opened numerous sale points in Romania, especially in the Transylvania region. It offers frozen specialties, with a constant quality that meets food safety standards (IFS Food and FSSC 22000 system). The products are baked on site and served hot to customers. The Fornetti franchise system makes it possible to obtain profits with small investments and minimal risks.

The Morarita brand offers specialties and frozen dough for pies and pastries especially through the supermarket network. It is a facility for customers who want to save time and have hot pastry specialties in their own home. The disadvantage is that margarine, vegetable oils and artificial preservatives are among the ingredients of these products.

Another competitor for traditional pastries is Bella, a brand present in Romania for the last 9 years, which sells frozen specialties: dough, pies, patisserie, strudels. Frozen pastry is increas-

ingly successful because it offers comfort, longer shelf life and affordable prices. Persistence Market Research estimates that the frozen pastry segment on the European market will reach, by 2024, 62.3% of the global market in the field. In Romania, the market and the consumption of frozen foods are among the lowest in Europe, having approximately 5% of the bread market, but this segment has a steady growth rate.

The latest trend on the Romanian and European market is the shift from pastry to restaurant. Panemar brand, founded in 1993 in Cluj county, has succeeded in expanding its recipe for success in neighbouring counties. Under the slogan „Bread with soul”, the company first produced bread and sweet bread with traditional recipes, taking care to comply with international standards in food safety, quality management and environmental management (ISO 22000, ISO 9001, ISO 14001). Then they offered to the Romanian customers, in addition to the traditional apple or cheese pies, international pastry specialties (muffins, Bavarian pretzels, Polish pretzels, tiramisu, apple, cheese, or caramel strudel, croissants, cookies, brownies, cheesecake). Recently, it has introduced salads, sandwiches and soups, so customers can spend the entire lunch break inside the pastry-restaurant.

Since the beginning of the twentieth century, Turkish pastry shops have been a constant success, especially in the southern and south-eastern regions of Romania. Recently, such pastries have also opened in the western region of the country. The *baclava*, the *cataif* and the *sarailia* have always been preferred by a large number of Romanians.

At present, some bakeries and pastry shops in Romania (Boromir, Baneasa, Dobrogea, Vel Pitar, Pambac, Bunexim) export traditional products and specialties (biscuits, sweet rolls, cookies, pretzels, salty pastries, sweet bread) to the European countries where there are stores with Romanian products and a large number of Romanians who have emigrated (especially France, Italy, Spain, the United Kingdom, but also the countries of the Scandinavian Peninsula). Customers are not only Romanians working abroad, but also foreigners who want to try new tastes.

5. CURRENT TRENDS IN CONSUMPTION

In what the bakery products are concerned, according to the „Study on the Bakery Products Market and the Market of Flour Products”, for 2018, made by Rompan, the white, traditional loaf, still holds a big share of the total market of bakery products, but the increase in the assortment diversity with new tastes and flavours are key factors that can drive sales. Then come the black bread, whole graham, rye bread, multi-grain bread, sales of which register increases, especially in the urban areas, among women and young people, because the products are perceived as healthier, as having fewer calories and are recommended by doctors.

In the last decade there has been a tendency to decrease the amount of bread consumed in Romania: consumption has decreased from 9.2 kg / month per capita in 2008 to about 8 kg / month per capita.

There are significant differences in consumer behaviour depending on social class or region. Thus, among the unemployed there is a marked increase in the consumption of bread, reaching even monthly quantities of 9 kg / person, by 16% more than in 2017. In the regions with a lower standard of living, such as Oltenia, Muntenia or the North-East Region (Moldova), an increase in the consumption of bakery and bread products was seen in 2018, as compared to the previous year.

According to the GfK study, 82% of Romanians have bread daily, 7 percent less than in 2009 when this category of frequent consumers of bread was 89% (Gallup study). As the bread consumption gradually decreases, the pastry consumption increases. The pastry products are not basic products, but comfort products, they are usually consumed as a snack or as a dessert and are preferred by young consumers from the urban area.

Given the current concern for a healthy diet, the frequency of consumption of these products is slightly lower, with 1 in 4 respondents consuming them only once a week. Confectionery and pretzels are products consumed especially by the inhabitants of the big cities, being a consumption habit of the type „on the go”. The most consumed types of confectionery products are the sweet bread and the fresh pastry (strudels, patisserie, pastries), by about 60% of consumers; 46% of consumers use to have cakes, sweet rolls and 39% - sponge cake; muffins / madeleines and frozen pastry are the least consumed - 13% and 7% respectively. Even though it is in the last place, in the last ten years the frozen pastry has registered a constant growth.

Consumers take into account, at the time of purchase, the quality and aspect of the products, the price, the content of E's and preservatives and the type of flour.

6. PASTRY SHOPS AT THE BEGINNING OF THE 21ST CENTURY – CHARACTERISTICS AND DEVELOPMENT OPPORTUNITIES

In a desire to permanently evolve and reinvent themselves, investors in the confectionery and confectionery field are concerned about:

- creating strong brands and promoting them through new communication channels (Internet - websites and social media);
- accessing European funds;
- the possibility to expand by opening more patisserie in the franchise;
- permanent contact with market news, by participating in national exhibitions (for example the GastroPan exhibition in Arad which will hold its 12th edition in March 2020) and international exhibitions (Le Salon de la Pâtisserie - Paris, SIGEP - international exhibition of ice cream, confectionery artisan bakery - Rimini, Expo Sweet - Exhibition for the confectionery and confectionery sectors - Warsaw, Artoza - International exhibition for the bakery and confectionery sectors - Athens, Modern Bakery Moscow - International exhibition for the bakery and confectionery industry - Moscow Bakepol - Specialized fair for the bakery and confectionery industry - Krakow, Südback - Exhibition for the bakery and confectionery industry - Stuttgart) or by participating in competitions for professionals (The World Trophy of Pastry Ice Cream and Chocolate - Milan).
- innovation (new products, special or specialized, new ingredients, with health benefits, new flavours, competitive prices, new technologies);

They try to achieve these goals by:

- focus on staff:
 - sending the personnel to specialized courses, at home and abroad;
 - reintroduction of apprenticeship under the guidance of pastry masters and confectioners (returning to the tradition of the beginning of the 20th century);
- focus on product:
 - the orientation towards the traditional Romanian confectionery, reinvented, the old recipes adapted to the aesthetics and modern taste (for example „coliva” cone);

- bringing to the attention of the Romanian customers some traditional products from other countries with which Romania has affinities: France (croissant, macaroons, madeleines, millefeuille / a thousand leaves, éclairs, small fruit tarts, artisan chocolate), Italy (canollo), Germany (kremschnitt, linzer);
- proposing traditional products of the national minorities, the Hungarian and German gastronomic culture having a strong influence especially in Transylvania (e.g. kürtőskalács, hájas, Beigli, Bretzeln, Strudel);
- creation of high-quality products for the business environment (e.g. fresh pastry specialties + coffee „to go”, daily delivery of some pastry specialties to offices, creation of product packages for corporate events - parties, coffee breaks, conferences, personalized gift baskets for partners on the occasion of the holidays);
- focus on aesthetics:
 - publishing on social networks (especially Instagram) photos of new, beautiful and elegant products, thus acting on the subconscious and on the purchase behaviour;
 - adopting the concept of creative pastry - the baker becomes a designer;
- focus on ingredients:
 - the use of quality ingredients, even if the price of products increases, as consumers are becoming more sophisticated;
 - creation of less sweet products, with less sugar, less butter or lard, with flour richer in fibre;
 - replacement of the „star ingredient”, the chocolate, with fruits;
 - introduction of vegan and raw vegan products, products without dough, only from seeds and fruits;
 - giving up artificial dyes;
 - finding solutions to replace the ingredients that causes food allergies;
- focus on spaces and location:
 - arrangement of mixed spaces (tea shop + pastry shop, cafe + pastry shop, bistro + pastry shop / confectionery), preferred by young consumers;
- focus on customer:
 - customer loyalty (small businesses, which are easier to control, require smaller investments, a small number of staff, a limited number of products, but have loyal customers);

The bakery sector is currently threatened by:

- catering services (1 strudel or croissant costs 2.2 lei compared to 4.5 lei in bakeries),
- the „menu of the day”, offered by restaurants (12-14 lei),
- the preference of young consumers for fast food.

7. CONCLUSION

The year 1990 marked a change in the consumers' behaviour in Romania. They gave up the products that were recommended based on the concept of „rational eating” imposed by the communist era (according to which the basic product was black bread) and, faced with a rich offer (due to the imports and to the national companies that diversified their production), they started to prefer white bread and pastry specialties. Although over time theories have emerged that white bread was not healthy, it still has the highest market share.

Gradually, the big producers of bread and bakery products began to manufacture confectionery and pastry specialties, distributed through their own network of stores. Since the specialties are more expensive, the profit obtained is bigger. According to the studies carried out periodically

by the patronage, the market for bakery and pastry products is increasing year by year, the big players on the market setting up special production lines for both fresh and frozen pastries. If at first the basic production was bread, now the production focuses on pastry. Also, these big producers are concerned with the implementation of the food safety management system.

The market for bakery and pastry products has become extremely dynamic and competitive. Besides the big producers, small companies appeared, which developed, evolved and turned into successful brands.

The range of pastry specialties has expanded, being enriched with products from France, Italy, Germany, Turkey, Hungary. These were adapted to the Romanian tradition and tastes, being assimilated by the population, who no longer perceives them as borrowed.

The range of ingredients has also been diversified. Enhancers and low-quality ingredients have appeared on the market, allowing for reasonable prices to be set. At the opposite pole there are the high-class ingredients, with which specialties are produced, but which have a limited number of consumers, with higher incomes, in the urban area, concerned about the quality of the products and a healthy lifestyle.

The other social classes will increasingly focus on frozen products, the price of which is lower and which we can find in the big chains of supermarkets.

The artisan pastry shops will only survive on the market as a niche sector, with high quality products and located in strategic positions, with high business reputation, located in tourist areas and in the middle of the big cities, where there are potential customers with high purchasing power.

In our opinion, the chance of the artisan bakery to survive is to make the shift toward the restaurant. In the coming years, the pastry shop will become the place where one can have a high-quality coffee, a delicious sandwich, and even a cream soup, a concept favoured by the corporate customers and the young generation.

REFERENCES

- Balmer, J.M.T., Greyser S. (2003), *Revealing the Corporation: Perspectives on Identity, Image, Reputation, Corporate Branding and Corporate Level Marketing*, Routledge, London.
- Bucci, L. (2019) « Pâtisserie: on vous dit tout sur les tendances du dessert », *Dernières nouvelles d'Alsace*, 19.06.2019, [Online], Available: <https://www.dna.fr/actualite/2019/06/19/patisserie-on-vous-dit-tout-sur-les-tendances-du-dessert>
- Calvel, R. (1990) *Le goût du Pain*, Éditions Jerome Villette.
- Cătoiu, I., Oancea, O., Pandelică, A. (2011) „Cercetări de marketing privind evaluarea decalajelor de percepție asupra siguranței alimentare existente între industria și piața produselor de panificație din România” (Marketing research on evaluation of the perception gap focused on the food security between bakers industry and market in Romania), *Revista de Marketing Online (Journal of Online Marketing)*, vol. 4 nr. 3, pp. 3-21.
- Chițu, M., Voiculescu (2013), „Românii, printre campionii Europei la consumul de pâine. Cât de sănătoasă este „pâinea noastră cea de toate zilele”. Reacția nutriționiștilor”, *Gândul*, 4.08.2013, [Online], Available : <https://www.gandul.info/stiri/romanii-prin->

tre-campionii-europei-la-consumul-de-paine-cat-de-sanatoasa-este-painea-noastra-cea-de-toate-zilele-reactia-nutritionistilor-11187721

Develey, A. (2017) « Éclair, macaron... L'histoire secrète de nos pâtisseries », *Le Figaro*, 23.03.2017, [Online], Available: <https://www.lefigaro.fr/langue-francaise/expressions-francaises/2017/03/23/37003-20170323ARTFIG00013-eclair-macaron-l-histoire-secrete-de-nos-patisseries.php>

Kolbay, G., 2018, *ANPC a luat în vizor produsele de panificație congelate. Producătorii atrag atenția: Ce riscăm dacă nu știm exact ce conțin*, [Online], Available: <http://www.ziare.com/social/consumatori/anpc-a-luat-in-vizor-produsele-de-panificatie-congelate-producatorii-atrag-atentia-miza-e-sanatatea-romanilor-1506789>.

Lindstrom, M. (2011) *Buyology*, Publica, București.

Lindstrom, M. (2013) *Brand Washed. Trucuri prin care companiile ne manipulează mințile și ne conving să cumpărăm*, Publica, București.

Maior, D., *Studiu de piață privind produsele de panificație (2)*, [Online], Available: http://www.rompan.ro/uploaded_files/file/Articol%20aparut%20in%20Revista%20Brutarul%20iulie%202010.pdf.

Pélissier, D. (2015) « Les organisations ont-elles ont une identité numérique? », *Présence numérique des organisations*, [Online], Available : <http://presnumorg.hypotheses.org/34>.

Popescu, M. (2008) « Site-ul web: Între modalitate de comunicare și instrument strategic de marketing », *Revista de marketing Online*, vol. 2, nr. 1, pp. 39-45.

Porumb, A.T. (2016) « Mise en thème de l'identité organisationnelle: le cas du site web », *Analele Universității din Oradea (Seria Științe Economice)*, tom XXV, Vol. II, pp. 149-157.

Săseanu, A.S., Petrescu, R.M., Voica, D. (2009), The bakery industry - a favourable environment for the Romanian entrepreneurs”, *Analele Universității din Oradea (Seria Științe Economice)*, tom XVIII, Vol. II, pp. 201-207.

Teodorescu, F., Toma, M., Pistol, M., 2019, „Tradiție și modernitate – condimentele în panificație”, *Brutarul*, 4.11.2019, [Online], Available <https://brutarul.ro/traditie-si-modernitate-condimentele-in-panificatie/>.

Van der Spuy, A. (2018) “Food as a Marker of Identity in *My Beautiful Death by Eben Venter*”, *Athens Journal of Philology*, Volume 5, Issue 1, pp. 7-18.

Internet sources:

www.anamob.ro

www.artaalba.ro

www.brutarul.ro

<https://www.castelanne.com/blog/evolution-patisserie/>

<https://www.didatticagenzialighieri.it/storia-della-pasticceria/>

<http://www.eattheglobe.com/story/the-history-of-french-pastry-and-confectionery-1100>

<http://www.patiseria-leon.ro/istoria-patiseriei.html>

<https://www.gfk.com/ro/>

<https://theculturetrip.com/europe/romania/articles/the-most-delicious-romanian-desserts/>

<https://www.forbes.ro/record-patiserii-ies-pe-piata-cu-5-milioane-de-bucati-de-pasca-si-75-milioane-de-cozonaci-80957>

HEAVY METAL ACCUMULATION AND CHEMICAL COMPOSITION OF ESSENTIAL OILS OF SALVIA OFFICINALIS CULTIVATED ON HEAVY METAL CONTAMINATED SOILS

Violina Angelova¹

DOI:

Abstract: Comparative research has been conducted to allow us to determine the content of heavy metals and chemical composition of *Salvia officinalis* L oils, as well as to identify the possibility of *Salvia officinalis* L. growth on soils contaminated by heavy metals. The experimental plots were situated at different distances of 0.5 km and 15 km, respectively, from the source of pollution the Non-Ferrous-Metal Works (MFMW) near Plovdiv, Bulgaria. On reaching flowering stage the *Salvia officinalis* L plants were gathered. The content of heavy metals in different parts of *Salvia officinalis* L. (roots, stems, leaves and inflorescences) was determined by ICP. The essential oil of the *Salvia officinalis* L. was obtained by steam distillation in laboratory conditions which was analyzed for heavy metals and its chemical composition was determined.

Salvia officinalis L. is a plant which is tolerant to heavy metals and can be grown on contaminated soils. Favorable is also the fact that heavy metals do not influence the development of the *Salvia officinalis* L. as well as on the quality and quantity of the essential oil. Twenty-nine components were identified in the oil. The main compounds of essential oil were as follows: α -thujone (15.927-18.912), camphor (16.839-17.826), trans-thujone (5.379-11.575), 1,8-cineole (6.891-7.625), camphene (6.024-6.514), α -humulene (5.395-6.098), borneol (4.591-5.394), (e)- β -caryophyllene (3.868-4.576), limonene (3.458-4.612), bornyl acetate (1.621-3.194), viridiflorene (2.449-5.633), β -pinene (2.174-2.223), allo-aromadendrene (2.034-4.777). The compounds in the essential oil that decreased as a result of heavy metals pollution are limonene, bornyl acetate and allo-aromadendrene, while the α -thujone, trans-thujone, camphor and viridiflorene significantly increased. Observed increase of the levels of α -thujone, trans-thujone, and camphor level in the leaves of sage grown on heavy metals polluted soil indicated an improvement of the essential oil quality. The essential oil of *Salvia officinalis* L. can be a valuable product for the farmers from the polluted regions.

Keywords: Heavy Metals, Contaminated Soils, Essential Oil Composition, *Salvia Officinalis*

1. INTRODUCTION

Salvia officinalis (sage, also called garden sage, common sage, or culinary sage) is a perennial, evergreen subshrub of the Lamiaceae family, with woody stems, greyish leaves and blue to purple flowers [1]. It is cultivated in the subtropical countries of Central and Eastern Europe, Turkey, Algeria, Asia, America and Africa, Ukraine, India, Ceylon, Madagascar, Tunisia, Morocco, etc. [2-4]. In Bulgaria it is grown in the southern part of the country. The plant is essential oil-bearing, honey-bearing and anti-erosion plant.

There are over 900 species of salvia. *Salvia officinalis*, *Salvia sclarea* and *Salvia lavandulifolia* are of economic importance, as these three species have the highest content of aromatic substances.

¹ Agricultural University-Plovdiv, 12 Mendelev street, Plovdiv, Bulgaria

The essential oil is obtained by steam distillation of fresh or dried leaves and inflorescences of the plant. The sage essential oil can be used in the food and alcohol industries (as aromatic vector in the production of salami, cheese and wine), in the pharmaceutical industry and in the perfumery and cosmetics [5]. *S. officinalis* L. essential oil has antiseptic, anti-inflammatory, antitumor, antispasmodic and antioxidant effects [6-8]. Its pharmacological properties depend on the chemical composition of the essential oil.

The production of *S. officinalis* essential oil and its chemical composition have been the subject of much investigation around the world. It has been found that monoterpene and sesquiterpene hydrocarbons and their oxygen derivatives are predominant in the composition of *S. officinalis* oil [9-11]. The qualitative characteristics of essential oils from different countries are similar, but large quantitative differences in the content of the basic compounds have been found, suggesting that these oils are likely to have different biological activity [6, 12-14]. The composition of the oil depends on various factors, such as genetic origin [15], habitat [15-16], environmental conditions such as temperature, day length, intensity of light [15,17-19], season [15], physiological stage (harvest time) [18], plant parts used for essential oil extraction [15, 20], soil composition [21], etc. The development of *S. officinalis* also has an effect on the oil composition [22]. It was found that α -humulene, viridiflorol and manool are predominant in young leaf oil, while the content of camphor or α -thujone is lower. In the older leaf oil, the content of α -humulene, viridiflorol and manool declines significantly with the simultaneous increase in camphor and α -thujone [23]. Cluster analysis shows that young leaf oil belongs to the α -humulene chemotype, whereas old leaf oil originating in Serbia belongs to camphor chemotype, and old leaf oil originating in Croatia belonged to the thujone chemotype [24]. Due to the strong influence of these factors the composition of the essential oil often does not match the profile defined according to ISO 9909 [25], which according to Bruneton [26] is: α -thujone (18-43%), β -thujone (3- 8,5%), camphor (4 , 5-24.5%), 1,8-cineole (5.5-13%), α -humulene (0-12%), α -pinene (1-6.5%), camphene (1.5-7%) , citric (0.5-3%), linalool and bornyl acetate (maximum 2.5%).

Studies have been conducted to evaluate the content of heavy metals in medicinal and aromatic plants [6, 27-29]. Some aromatic and medicinal plants have been found to be capable of accumulating heavy metals when grown on contaminated soils [30]. The content of essential oil and heavy metals in medicinal plants may be influenced by environmental conditions [31], soil geochemical characteristics and plant habitat [6, 29, 32]. It was found that the content of the essential oil obtained from the fresh plant mass of the sage is not affected by the level of heavy metal soil contamination [33]. Zheljazkov [33] found that peppermint can extract significant quantities of heavy metals from the soil. It was found that the tested varieties of mint can be successfully grown on soils highly polluted with heavy metals (in the region of NFMW – Plovdiv (Non-ferrous metals plant), without contamination of the final product - the essential oil. Despite the reduction in the yield (14%) due to pollution with heavy metals, mint still remains very profitable crop and can be used as an alternative to food crops. Some medical plants such as mint, St. John's wort, sage, marigold, marshmallow, cumin, garlic, garden sorrel, hemp and others can accumulate large amounts of toxic heavy metals in their tissues. They can also be successfully used in phytoremediation and can replace food crops grown under the same conditions [34].

The purpose of this study is to conduct a comparative study that will allow us to determine the content of heavy metals and chemical composition of *Salvia officinalis* L oils, as well as to identify the possibility of *Salvia officinalis* L. growth on soils contaminated by heavy metals.

2. MATERIAL AND METHODS

The experiment was performed on an agricultural field contaminated by Zn, Pb and Cd, situated at different distances (0.5, and 15.0 km) from the source of pollution, the NFMW (Non-Ferrous-Metal Works) near Plovdiv, Bulgaria.

Characteristics of soils are shown in Table I. The soils were slightly neutral to alkalic with moderate content of organic matter and essential nutrients (N, P and K). The pseudo-total content of Zn, Pb and Cd is high and exceeds the maximum permissible concentrations (MPC) in soil 1 (S1) (Table 1).

Table 1: Characterisation of the soils used in the experiment

| Parameter | pH | EC, dS/m | Organic C,% | N Kjeldal,% | P, mg/ kg | K, mg/ kg | Pb, mg/ kg | Zn, mg/ kg | Cd, mg/ kg |
|-----------------------|-----|-------------|----------------|-------------|--------------|--------------|---------------|---------------|---------------|
| Soil 1 (S1) 0.5 km | 7,4 | 0,15 | 2,2 | 0,34 | 625,6 | 6960 | 2509,1 | 2423,9 | 64,3 |
| Soil 2 (S2) 15 km | 7,5 | 0,15 | 1,54 | 0,12 | 387,3 | 6780 | 49,4 | 172,7 | 1,0 |

MPC (pH 6.0-7.4) – Pb -100 mg/kg, Cd-2.0 mg/kg, Zn-320 mg/kg

MPC (pH >7.4) – Pb – 100 mg/kg, Cd – 3.0 mg/kg, Zn -400 mg/kg

The test plant was sage. Sage is grown according to conventional technology. 5 plants of each of the areas were used for the analysis. Upon reaching the stage of flowering, sage was harvested and the content of Pb, Zn and Cd in leaves was determined. The essential oil of the sage was obtained by steam distillation in industrial conditions which was analyzed for heavy metals and its chemical composition was determined.

Pseudo-total content of metals in soils was determined in accordance with ISO 11466[35]. The available (mobile) heavy metals contents were extracted in accordance with ISO 14870 by a solution of DTPA [36]. The contents of heavy metals (Pb, Zn and Cd) in the plant material (leaves) and in the essential oils of sage were determined by the method of the microwave mineralization. The quantitative measures were carried out by ICP method (Jobin Yvon Emission - JY 38 S, France). Digestion and analytical efficiency of ICP was validated using a standard reference material of apple leaves (SRM 1515, National Institute of Standards and Technology, NIST).

The chemical composition of the oils in hexane (1:1000) were analyzed on Agilent 7890A Gas Chromatography system equipped with FID detector and Agilent 5975C mass spectrometer.

3. RESULTS AND DISCUSSION

The results presented in Tables 1 and 2 show that in the soil samples S1 (taken from the area situated at the distance of 0.5 km from NFMW), the reported values for Pb were exceeding MPC approved for Bulgaria and reached to 2509.1 mg/kg. In the area located at a distance of 15 km, the contents of Pb significantly reduce to 49.4 mg/kg. Similar results were obtained for Cd and Zn. The results for the mobile forms of the metals extracted by DTPA show that the mobile forms of Cd in the contaminated soils are the most significant portion of its total content and reached to 57,2%, followed by Pb with 33,8 % and Zn with 9,8%.

In uncontaminated soils, again the mobile forms of Cd are the largest part of its total content, followed by Pb and Zn.

Table 2: DTPA –extractable Pb, Zn and Cd (mg/kg) in soils sampled from NFMW

| Soils | Pb | | Cd | | Zn | |
|-----------|-------|------|-------|------|-------|------|
| | mg/kg | %* | mg/kg | % | mg/kg | % |
| S1 | 849.1 | 33,8 | 36.8 | 57,2 | 236.8 | 9,8 |
| S2 | 21.5 | 43.5 | 0.7 | 70 | 38.9 | 22.5 |

* DTPA -extractable / total content

A significant accumulation of Pb is found in the leaves of the sage. The content of this element reaches up to 108,1 mg/kg in leaves of the sage grown at a distance of 0.5 km from NFMW (Table 3). Probably a portion of heavy metals absorbed by the conduction system moves from the roots to the above-ground parts of the sage and are accumulated predominantly there. Probably a portion of the accumulated heavy metals in the above-ground mass of the sage is also due to aerosol pollution, which can be explained by the anatomical and morphological characteristics of the crop. The greater accumulation of Pb in the leaves is probably due to the fact that the leaves of sage are covered by many short soft, which favors the attachment of the aerosols and their accumulation therein. The content of Cd in the leaves of the sage grown at a distance of 0.5 km from NFMW reaches up to 1.3 mg/kg, values considered to be non-toxic to plants. According to Kabata-Pendias [37] 5.0 mg/kg Cd is considered to be a toxic value for the plants. Our results show the low ability of the sage to accumulate Cd in the above-ground mass.

The content of Zn in the stems and leaves of the sage grown at a distance of 0.3 km from NFMW reaches up to 120.4 mg/kg, as these values are also less the critical values for plants - 100-400 mg/kg.

With increasing the distance from NFMW a clear trend is seen towards reducing the content of heavy metals in the leaves of the studied crop. Significantly lower is the content of heavy metals in the leaves of the sage grown at 15 km from NFMW. The content of heavy metals in the leaves of the sage grown at 15 km from NFMW reaches up to 0.27 mg/kg Pb, 0.02 mg/kg Cd and 13.6 mg/kg Zn.

Table 3. Content of Pb, Cd and Zn (mg/kg) in leaves and essential oil of sage

| | Pb | | Cd | | Zn | |
|---------------------|--------|------|--------|-----|--------|------|
| | leaves | oil | leaves | oil | leaves | oil |
| S1 (0.5 km) | 108,1 | 0,15 | 1,27 | nd | 120,4 | 1,3 |
| S2 (15.0 km) | 0,27 | 0,14 | 0,02 | nd | 13,6 | 0,89 |

n.d. - non detectable

The heavy metal content in the essential oil from sage was also determined. The results obtained show that the majority of the heavy metals contained in the leaves of the sage do not pass into the oil during the distillation, therefore their content in the oil is much lower. Pb content in the essential oil of sage reaches up to 0.15 mg/kg, Zn up to 1.3 mg/kg, while the content of Cd is below the limits of the quantitative measurement of the method used. Significantly lower are the figures in the essential oil of sage grown at a distance of 15 km from NFMW - 0,14 mg/kg Pb and 0,89 mg/kg Zn. The results obtained show that the content of heavy metals in the essential oils is much lower compared to the leaves of the sage, and the amounts of Pb, Zn and Cd in the oil of sage are lower than the accepted maximum values and meet the requirements of an environmentally friendly product. Our results are in accordance with the ones established by Zheljazkov et al. [33, 38], which found that the heavy metal content in the essential oils of the lavender, basil and mint is very low and is not affected by the level of soil contamination with heavy metals.

The results of the chromatographic analysis of essential oils obtained by processing of leaves of sage grown at a different distance from NFMW are presented in Table 4. The values of the main components of the essential oil of sage are compared with the requirements of ISO 9909 [25] for the sage oil. ISO 9909 [25] for medicinal uses regulates the amounts of the following constituents in the essential oil: α -thujone (18.0-43.0%), camphor (4.5-24.5%), 1,8- cineole (5.5-13.0%), trans-thujone (3.0-8.5%), α -humulene ($\leq 12.0\%$), α -pinene (1.0-6.5%), camphene (1.5-7.0%), limonene (0.5-3.0%), bornyl acetate ($\leq 2.5\%$) and linalool+linalyl acetate ($\leq 1.0\%$).

Table 4. Composition of oil of sage (%) obtained by processing fresh leaves

| № | Compound | RI | S1 (0.5 km) | S2(15.0 km) | ISO 9909 |
|----|-----------------------------|------|-------------|-------------|----------|
| | | | % of TIC | | |
| 1 | (Z)-Salvene | 865 | 0,237 | 0,275 | |
| 2 | α -Pinene | 939 | 4,308 | 3,414 | 1,0-6.5 |
| 3 | Camphene | 952 | 6,514 | 6,024 | 1.5-7.0 |
| 4 | Sabinene | 969 | 0,182 | 0,218 | |
| 5 | β -Pinene | 979 | 2,223 | 2,174 | |
| 6 | Myrcene | 990 | 0,949 | 1,267 | |
| 7 | α -Terpinene | 1018 | 0,167 | 0,215 | |
| 8 | p-Cymene | 1026 | 0,416 | 0,533 | |
| 9 | Limonene | 1029 | 3,458 | 4,612 | 0.5-3.0 |
| 10 | 1,8-Cineole | 1031 | 7,625 | 6,891 | 5,5-13.0 |
| 11 | γ -Terpinene | 1061 | 0,341 | 0,474 | |
| 12 | beta-Linalool | 1097 | 0,394 | 0,308 | < 1 |
| 13 | cis-Thujone | 1102 | 18,912 | 15,927 | 18-43 |
| 14 | trans-Thujone | 1112 | 5,379 | 11,575 | 3,0-8,5 |
| 15 | Camphor | 1143 | 17,826 | 16,839 | 4,5-24,5 |
| 16 | trans-Pinocamphone | 1160 | 0,568 | 0,623 | |
| 17 | Borneol | 1165 | 5,394 | 4,591 | |
| 18 | Terpinen-4-ol | 1177 | 0,457 | 0,542 | |
| 19 | α -Terpineol | 1189 | 0,659 | 0,508 | |
| 20 | Bornyl acetate | 1285 | 1,621 | 3,194 | <2,5 |
| 21 | (E)- β -Caryophyllene | 1419 | 4,576 | 3,868 | |
| 22 | α -Humulene | 1454 | 6,098 | 5,396 | <12,0 |
| 23 | allo-Aromadendrene | 1461 | 2,034 | 4,777 | |
| 24 | γ -Muurolene | 1477 | 0,527 | 0,493 | |
| 25 | Viridiflorene | 1493 | 5,633 | 2,449 | |
| 26 | γ -Cadinene | 1513 | 0,805 | 0,722 | |
| 27 | δ -Cadinene | 1524 | 0,246 | 0,374 | |
| 28 | Ledol | 1565 | 0,173 | 0,116 | |
| 29 | Caryophyllene oxide | 1583 | 0,117 | 0,105 | |
| | Total | | 97,839 | 98,504 | |

RI - Relative Index; TIC - Total Ion Current

Good quality sage oil must contain a high percentage ($> 50\%$) of epimeric α - and β -thujones and $< 20\%$ of camphor [4]. α -Thujone is known to be more toxic than β -thujone, due to many of the biological effects of sage.

The results we obtained show that oxygen-containing monoterpenes (1,8-cineole, α -thujone and β -thujone, camphor, borneol and bornyl acetate) are predominant in oil, but significant differences in their content are observed in oils from contaminated and uncontaminated area. The content of 1,8-cineole ranges from 6.89% in the uncontaminated soil (S2) to 7.63% in the contaminated area (S1); α -thujone from 15.30% (S2) to 18.91% (S1), β -thujone from 5.38% (S1) to 11.58% (S2);

camphor from 16.84% (S2) to 17.83% (S1); borneol from 4.59% (S2) to (5.39 (S1); and bornyl acetate from 1.62% (S1) to 3.19% (S2). Significant amounts of sesquiterpenes were also found in the oil: α -humulene, which ranges from 5.40% (S2) to 6.10% (S1); viridiflorene from 2.45% (S2) to 5.63 (S1); (E)- β -caryophyllene from 3.87 (S2) up to 4.58% (S1) A negative correlation was found between the ratio of the amount of α - and β -thujones to the ratio of camphor and borneol in oils, and the higher content of α - and β -thujones corresponds to a lower content of camphor and borneol. Similar results were obtained from Kustrak et al. [18] and Pitarevic et al. [39], who found an inverse relationship between the ratio of thujones and camphor in most oils.

Higher levels of sesquiterpenes viridiflorene, humulene and γ -Cadinene are observed in the oils from the contaminated area compared to the oil from the uncontaminated area. Oils from both regions have significant amounts of camphor (16,839% -17,826%), as well as high levels of α -thujone (15,297% - 18,912%) and β -thujone (5,379% -11,575%).

Stancheva et al. [40] found a higher yield of essential oil from sage grown in heavy metal-contaminated soils, which is confirmed by our results. They found that the amounts of α -thujone, β -thujone β -cariophyllene and viridoflorol decreased as a result of heavy metal contamination, while the amounts of camphor, borneol, 1,8-cineole and bornyl acetate increased. According to Stancheva et al [40], the decrease in the levels of α - and β -thujones and the increased level of camphor in sage oil grown on heavy metal contaminated soil leads to a deterioration in the quality of the essential oil, which is not confirmed by our results. The oils from contaminated area oil contains more α -pinene, camphene, 1,8-cineole, β -linalool, α -thujone, borneol, (e)- β -caryophyllene, α -humulene, viridiflorene, γ -cadinene, smaller quantities of myrcene, α -terpinene, p-cymene, limonene, γ -terpinene, β -thujone, trans-pinocamphone, bornyl acetate, allo-aromadendrene, δ -cadinene, ledol and identical amounts of β -pinene, (Z)-salvene, γ -muurolene, caryophyllene oxide. The probable cause of the difference in the results obtained is due to the ways of cultivation of plants – field vs. vessel trials.

The results of most studies [18, 39, 41] show great variability of components in sage oil. Franz [42] points out that the difference in the composition of the essential oils within a species seems to be the rule rather than the exception; and is influenced by three main factors: (a) individual genetic variability, (b) plant parts and stage of development, and (c) environment. All these factors influence the ways of biosynthesis of the biologically active components in plants and will subsequently affect the ratio between them.

Most studies have found that oxygen containing monoterpenes (1,8-cineole, camphor, α -thujone, β -thujone, borneol and bornyl acetate), in an amount of 54.9 to 74.5%, represent the main part of sage oil. The monoterpene fraction (1, 8-cineole, camphor, α -thujone, β -thujone, borneol and bornyl acetate) ranged from 0.7 to 23.0%. Of the sesquiterpene fraction (3.4-15.0%), (E)-B-caryophyllene and x-humulol are in the highest amounts. Oxygen-containing sesquiterpenes (3.8-275. %) predominate viridiflorol and manool (0.3 and 8.2%),

Couladis et al. [24] reported that oxygenated monoterpenes (1,8-cineol, α - and β -thujone, camphor, borneol and bornyl acetate) predominate in the oil, their quantities varying widely.

Craft et al. [23] finds that monoterpenoids α -thujone (17–27%), 1,8-cineole (12–27%) and camphor (13–21%) predominate in oil, with smaller amounts of β -thujone (3, 8–6.0%), camphene (3.5–5.3%) and sesquiterpene α -humulene (3.1–4.4%). There are reports that sage oil from Italy, Romania, the Czech Republic, Portugal and Turkey are characterized by a high content of cam-

phor (22.0 to 31.79%) as a major component in the oil [43]. In contrast, oils in other countries such as Italy, Yugoslavia, Bulgaria and Iran are characterized by their large amount of oxygen monoterpenes, with α -thujone, 1,8-cineole and camphor as the main compounds known to exhibit antimicrobial, anti-inflammatory and antioxidant properties [44].

Tucker and Maciarello [45] describe five chemotopy groups based on four major components: (1) camphor > α -thujone > 1,8-cineole > β -thujone; (2) camphor > α -thujone > β -thujone > 1,8-cineole; (3) β -thujone > camphor > 1,8-cineole > α -thujone; (4) 1,8-cineole > camphor > α -thujone > β -thujone; and (5) α -thujone > camphor > β -thujone > 1,8-cineole.

Jug-Dujakovic et al. [46] based on data from eight major components (α -thujone, camphor, β -thujone, 1,8-cineole, β -pinene, camphene, borneol and bornyl acetate) distinguish three Dalmatian sage chemo types from Dalmatia: (A) α -1 thujone , 8-cineole > β -thujone; (B) β -thujone > α -thujone > camphor \approx 1,8-cineole; and (C) camphor > α -thujone > 1,8-cineole > camphene \approx borneol.

Our results show that sage oil from the uncontaminated area belongs to camphor-chemotype camphor (16.84) > α -thujone (15.93) > β -thujone (11.58) > 1,8-cineole (6.89), whereas the oil from the contaminated area belongs to the thujone-chemotype (α -thujone (18.91) > camphor (17.83) > 1,8-cineole (7.63) > β -thujone (5.38). The results obtained by us confirm that each sage plant has a unique chemical composition and individual chemotype of the oil.

The chromatographic profile shows a complex mixture of components contained in sage oil. Figure 1 shows the classification of the identified compounds based on functional groups. The highest is the content of oxygen-containing monoterpenes (60-62), followed by monoterpene hydrocarbons (19%), sesquiterpene hydrocarbons (13-18%) and oxygen-containing monoterpenes (3-6%).

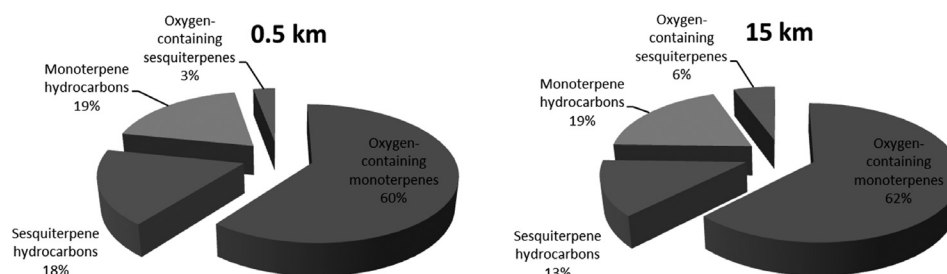


Figure 1: Classification of the identified compounds based on functional groups

Similar results were obtained by Damyanova et al. [41] for oil originating in Bulgaria (oxygen-containing monoterpenes (59.15%), sesquiterpene hydrocarbons (24.37%) and monoterpene hydrocarbons (14.66%). The results are in line with those of Santos-Gomes and Fernandes-Ferreira [20] and Farhat et al. [48], who find that oxygen-containing monoterpenes are essential components in sage oil.

The observed differences in the profile of the essential oils of sage when grown on contaminated and uncontaminated soils may be due to the conditions of cultivation of the plants are related to soil contamination.

The main components contained in sage oil grown on contaminated soil are within the standard except limonene, which slightly exceeds the corresponding value in the standard. The content of trans-thujon and limonene from uncontaminated soil oil exceeds the specified values in ISO

9909, while the content of α -thujon is below the values in ISO 9909. The content of all other oil ingredients in our study was within their respective values of the ISO standard.

The composition of the oil from the contaminated area complies with the requirements of 9909 for the use of *S. officinalis* oil for medical purposes.

4. CONCLUSION

Based on the results obtained the following conclusions can be made:

1. *Salvia officinalis* L. is a plant which is tolerant to heavy metals and can be grown on contaminated soils.
2. The amounts of Pb, Zn and Cd in the oil of sage grown on contaminated soil (Pb -2509.1 mg/kg, Zn -2423.9 mg/kg, Cd – 64.3 mg/kg) are lower than the accepted maximum values and meet the requirements of an environmentally friendly product
3. The highest is the content of oxygen-containing monoterpenes in essential oils of sage (60-62), followed by monoterpene hydrocarbons (19%), sesquiterpene hydrocarbons (13-18%) and oxygen-containing monoterpenes (3-6%).
4. The main components contained in sage oil grown on contaminated soil are within the standard except limonene, which slightly exceeds the corresponding value in ISO 9909.
5. The content of trans-thujon and limonene from sage oil from uncontaminated soil exceeds the specified values in ISO 9909, while the content of α -thujon is below the values in ISO 9909.
6. The composition of the oil from the contaminated area complies with the requirements of 9909 for the use of *S. officinalis* oil for medical purposes.

ACKNOWLEDGEMENT

The financial support by the Bulgarian National Science Fund Project DFNI H04/9 is greatly appreciated.

REFERENCES

- [1] Pederson, J.A., (2000) *Distribution and taxonomic implications of some phenolics in the family Lamiaceae determined by ESR Spectroscopy*, Biochemical Systematic and Ecology, vol. 28, pp. 229-253.
- [2] Georgiev, E., Stoyanova, A. (2006) A guide for the specialist in aromatic industry. Plovdiv, Bulgaria
- [3] Mirijalili. M., Salehi, P., Sonboli, A., Vala, M. (2006) *Essential oil variation of Salvia officinalis aerial parts during its phenological cycle*, Chem Nat Compd., vol.42(1), pp.19–23.
- [4] Raal, A., Orav, A., Arak, E. (2007) *Composition of the essential oil of Salvia officinalis L., from various European countries*. Nat Prod Res., vol. 21(5), pp.406–411.
- [5] Stojanov, N. (1973) Our medicinal plants. Nauka I izkustvo Press, Sofia, Bulgaria.
- [6] Abu-Darwish. M., Cabral, C., Ferreira. I., Gonçalves, M., Cavaleiro, C., Cruz, M., Al-Bdour, T., Salgueiro, I. (2013) *Essential oil of Common Sage (Salvia officinalis L.) from Jordan: assessment of safety in mammalian cells and its antifungal and Anti-inflammatory potential*, Bio Med Res Int, Article ID 538940:1–9
- [7] Fu, Z., Wang, H., Hu, X., Sun, Z., Han, C. (2013) *The Pharmacological properties of Salvia essential Oil*, J Appl Pharm Sci., vol. 3(7), pp. 122–127.

- [8] Loizzo, R., Tundis, R., Menichini, F., Saab, M., Statti, A., Menichini, F. (2007) *Cytotoxic activity of essential oils from Labiatae and Lauraceae families against in vitro human tumor models*, Anticancer Res., vol.27, pp.3293–3300.
- [9] Fellah, S., Diouf, P.N., Petrissans, M., Perrin, D., Romdhane, M., Abderrabba, M. (2006) *Chemical composition and antioxidant properties of Salvia officinalis L. oil from two culture sites in Tunisia*, Journal of Essential Oil Research, vol.18(5), pp. 553-556.
- [10] Tsankova, E.T., Konaktchiev, A.N., Genova, E.M. (1994) *Constituents of essential oils from three Salvia species*, Journal of Essential Oil Research, vol.6, pp.375-378.
- [11] Velickovic, D., Ristic, M., Randjelovic, N., Smelcerovic, A. (2002) *Chemical composition and antimicrobial characteristics of the essential oils obtained from flower, leaf and stem of Salvia officinalis L. originated from southern Serbia*. Journal of Essential Oil Research, vol.14, pp. 453-458.
- [12] Djeddi, S., Bouchenak, N., Settar, I., Halli, L. (2012) *Screening of chemical composition and antimicrobial potential of Algerian sage essential oil*, Glob J Med Plant Res., vol.1(1), pp.46–49.
- [13] Lakhal, H., Ghorab, H., Chibani, S., Kabauche, A., Semra, Z., Smati, Z., Smati, F., Abuhamdah, S., Kabouche, Z. (2013) *Chemical composition and biological activities of the essential oil of Salvia officinalis from Batna (Algeria)*, Scholars Res Libr., vol.5(3), pp. 310–314.
- [14] Orhan, I., Özçelik, B., Kartal, M., Kan, Y. (2012) *Antimicrobial and antiviral effects of essential oils from selected Umbeliferae and Labiatae plants and individual essential oil components*, Turk J Biol., vol.36, pp.239–246.
- [15] Perry, N. B., Anderson, R. E., Brennan, N. J. (1999) *Essential oils from Dalmatian sage (Salvia officinalis L.): variations among individuals, plant parts, seasons, and sites*, J.Agric. Food Chemist., vol.47(5), pp. 2048-2054.
- [16] Berotiene, G., Nivinskiene, O., Butkiene, R., Mockute, D. (2007) *Essential oil composition variability in sage (Salvia officinalis L.)*, Chemija, vol.18, pp. 38-43.
- [17] Máthé, J. I., Oláh, L., Máthé, A., Miklossy, V., Bernáth, J., Blunden, G., Patel, A., Máthé, I. (1992) *Changes in the essential oil production of Salvia officinalis under climatic conditions of the temperate belt*. Plant med., vol.58, pp. 680-686.
- [18] Kuštrak, D., Kuftinec, J., Blazevic, N. (1984) *Yields and composition of sage oils from different regions of the Yugoslavian Adriatic Coast*, J Nat Prod., vol. 47, pp. 520-524.
- [19] Hadri, A., Gomez del Rio, M., Sanz, J., Coloma, A., Idaomar, M., Ozanas, B. (2010) *Cytotoxic activity of α -humulene and transcario-phyllene from Salvia officinalis in animal and human tumor cells*, An R Acad Nac Farm., vol.76, pp.343-356.
- [20] Santos-Gomes, P. C., Fernandes-Ferreira, M. (2001) *Organ and seasoned-pendent variation in the essential oil composition of Salvia officinalis L. cultivated in two different sites*, J Agric Food Chem., vol.49, pp. 2908-2916.
- [21] Piccaglia, R., Marotti, M., Galletti, G. C. (1989) *Effect of Mineral Fertilizers on the Composition of Salvia officinalis Oil*, Journal of Essential Oil Research, vol.1, pp. 73-83.
- [22] Lakušić, B.S., Ristić, M.S., Slavkovska, V.N., Stojanović, D.L.J., Lakušić, D.V. (2013) *Variations in essential oil yields and compositions of Salvia officinalis (Lamiaceae) at different developmental stages*, Bot. Serb., vol.37, pp.127–139.
- [23] Craft, J. D., Satyal, P., Setzer, W. N. (2017) *The Chemotaxonomy of Common Sage (Salvia officinalis) Based on the Volatile Constituents*, Medicines, vol. 4, pp. 47, doi:10.3390/medicines4030047
- [24] Couladis, M., Tzakou, O., Mimica-Dukic, N., Jancic, R., Stojanovic, D. (2002) *Essential oil of Salvia officinalis L. from Serbia and Montenegro*, Flavour Fragr. J., vol. 17, pp. 119–126.
- [25] ISO 9909 (1997), Oil of Dalmatian sage (Salvia officinalis L.).
- [26] Bruneton, J. (1999) Pharmacognosy, Phytochemistry Medicinal Plants. Lavoisier Intercept, London, UK

- [27] Amr, S., Đorđević, S. (2000) *The investigation of the quality of Sage (Salvia officinalis) originating from Jordan*, FACTA Universitatis Series: Working Living Environmental Protection, vol.5, pp.103-108.
- [28] Angelova, V., Ivanov, K., Ivanov, R. (2005) Heavy metal content in plants from family Lamiaceae cultivated in an industrially polluted region, *Journal of Herbs, Spices and Medicinal Plants*, vol.11, pp.37-46.
- [29] Blagojević, N., Damjanović-Vratnica, B., Vukašinović-Pešić, V., Đurović, D. (2009) *Heavy Metals Content in Leaves and Extracts of Wild-Growing Salvia officinalis from Montenegro*, *The Polish Journal of Environmental Studies*, vol.18(2), pp. 167-173.
- [30] Angelova, V. (2012) *Potential of some medicinal and aromatic plants for phytoremediation of soils contaminated with heavy metals*, *Agrarni Nauki*, vol. 4(11), pp. 61-66.
- [31] Maksimovic, M., Vidic, D., Milos, M., Molic, M. E. S., Zic, S. A., Siljak-Yakovlev, S. (2007) *Effect of the environmental conditions on essential oil profile in two Dinaric Salvia species: S. brachyodon Vandas and S. officinalis L.*, *Biochemical Systematic and Ecology*, vol.35, pp.473-478.
- [32] Chan, K. (2003) *Some aspects of toxic contaminants in herbal medicines*, *Chemosphere*, vol. 52, pp.1361-1371.
- [33] V. D. Zheljazkov, Nielsen, N.E., (1966) *Studies on the effect of heavy metals (Cd, Pb, Cu, Mn, Zn and Fe) upon the growth, productivity and quality of lavender (Lavandula angustifolia Mill) production*, *J. Essential Oil Res.*, vol.8 (3), pp. 259-274.
- [34] Bağdat, R. B., Eid, E. M. (2007) *Phytoremediation behaviour of some medicinal and aromatic plants to various pollutants*, *Journal of Field Crops Central Research Institute*, vol.16(1-2), pp. 1-10.
- [35] ISO 11466. (1995) Soil quality - Extraction of trace elements soluble in aqua regia.
- [36] ISO 14780. (2001) Soil Quality- Extraction of Trace Elements by Buffered DTPA Solution.
- [37] Kabata-Pendias, A. (2001) *Trace Elements in Soils and Plants*, 3rd ed. CRC Press LLC, Boca Raton.
- [38] Zheljazkov, V. D., Craker, L.E., Baoshan, X. (2006) *Effects of Cd, Pb and Cu on growth and essential oil contents in dill pepper mint, and basil*, *Environ. Exp. Bot.*, vol. 58, pp.9-16.
- [39] Pitarević, I., Kuftinec, J., Blažević, N., Kuštrak, D. (1984) *Seasonal variation of essential oil yield and composition of Dalmatian sage, Salvia officinalis*, *J Nat Prod.*, vol.47, pp.409-412.
- [40] Stancheva, M., Geneva, M., Hristozkova, M., Boychinova, M., Markovska, Y. (2009) *Essential oil variation of Salvia officinalis (L.), grown on heavy metals polluted soil*, *Biotechnol. and Biotechnol. Eq.*, vol. 23, pp. 373-376.
- [41] Damyanova S., Mollova S., Stoyanova, A., Gubenia, O. (2016) *Chemical composition of Salvia officinalis L. essential oil from Bulgaria*, *Ukrainian Food Journal*, vol. (4), pp.695-700.
- [42] Franz, C. (1993) *Genetics. On: Hay RKM & Waterman PG (eds.), Volatile Oil Crops: Their Biology, Biochemistry and Production*, pp. 63-96, Longman: Harlow, UK.
- [43] Dob, T., Berramdane, T., Dahmane, D., Benabdelkader, T., Chelghoum C. (2007) *Chemical composition of the essential oil of Salvia officinalis from Algeria*. *Chem. Nat. Compd.*, vol.43, pp.491-494.
- [44] Radulescu, V., Chiliment, S., Oprea E. (2004) *Capillary gas chromatography-mass spectrometry of volatile and semi volatile compounds of Salvia officinalis*, *J. Chromatogr. A.*, vol.1027, pp. 121-126.
- [45] Tucker, A.O., Maciarello, M.J. (1990) *Essential oils of cultivars of Dalmatian sage (Salvia officinalis L.)*. *J. Essent. Oil Res.*, vol.2(3), pp. 139-144.
- [46] Jug-Dujakovic, M., Ristic, M., Pljevljakušić, D., Dajic-Stevanovic, Z., Liber, Z., Hancevic, K., Radic, T., Šatovic, Z. (2012) *High diversity of indigenous populations of Dalmatian sage (Salvia officinalis L.) in essential-oil composition*. *Chem. Biodivers.*, vol. 9, pp. 2309-2323.

SCALING BLOCKCHAIN FOR AGRICULTURAL SECTOR: THE AGRIDIGITAL CASE

Roberto Mavilia¹ 

Roberta Pisani² 

DOI:

Abstract: *New technologies are playing a fundamental role in the postmodern era of globalization where interpersonal interactions at the international level and the exchange of goods, services, information and capital are the basis of all activities. The agriculture sector is constantly facing numerous challenges including the steady growth of the population, climate change, the increasing number of catastrophes, the loss of biodiversity and the spread of parasites. New technology applications such as Blockchain, Internet of things (IoT), drones, Big Data and artificial intelligence can provide the various players in the agriculture value chain with new tools and key technologies to improve production and distribution processes. To demonstrate the importance of applying the Blockchain in the agriculture sector, the case of the AgriDigital platform will be examined. AgriDigital is a cloud-based raw materials management platform that has started the implementation of the Blockchain in agricultural supply chains.*

Keywords: *Blockchain, Agricultural Sector, Innovation Management.*

1. INTRODUCTION

New technologies are playing a fundamental role in the postmodern era of globalization where interpersonal interactions at the international level and the exchange of goods, services, information and capital are the basis of all activities. Blockchain technology, in particular, is attracting more and more interest from the academic world but also from the corporate sector.

By allowing immutable and decentralized transactions, Blockchain technology is applied in various sectors, financial and non-financial sectors.

More specifically, the agriculture sector is constantly facing numerous challenges including the steady growth of the population, climate change, the increasing number of catastrophes, the loss of biodiversity and the spread of parasites. Therefore, innovation in agricultural processes is necessary to overcome them and make agriculture a profitable activity for small and large farmers.

New technology applications such as Blockchain, Internet of things (IoT), drones, Big Data and artificial intelligence can provide the various players in the agriculture value chain with new tools and key technologies to improve production and distribution processes. Despite its great potential, it is essential to also consider the relative costs and implementation risks in assessing the possibility of using it within the sectors of the economy.

¹ ICRIOS – Invernizzi Center for Research on Innovation, Organization, Strategy and Entrepreneurship – Bocconi University, Via Sarfatti 25 – 20136, Milan, Italy

² MEDAlies – Research Center for Mediterranean Relations – Via del Torrione 95 – 89125, Reggio Calabria, Italy

To verify whether a process could benefit from a Blockchain-based solution, the first step is to identify use cases, followed by the identification of the fundamental guidelines of the process (including regulatory requirements, stakeholders, legal framework, interoperability with the existing system and other key requirements) and then the determination of the technology that could help address the challenges in the particular case analyzed. In many cases, in fact, a much simpler digital solution could be the answer to the problem.

To demonstrate the importance of applying the Blockchain in the agriculture sector, the case of the AgriDigital platform, an Australian company based in Sydney, will be examined. AgriDigital is a cloud-based raw materials management platform that has started the implementation of the Blockchain in agricultural supply chains, which represents a significant example of the benefits that these solutions can bring to agricultural businesses and entrepreneurs. The platform allows the management of goods, the traceability of food and the perfect information of customers regarding the origin of the products using precisely a Blockchain protocol. In addition, AgriDigital is continuing to invest and develop new solutions to expand its horizons to new sectors.

2. BLOCKCHAIN LITERATURE REVIEW

The birth of the Blockchain is linked to the publication of the white paper entitled „Bitcoin: A Peer-to-Peer Electronic Cash System” in 2008 by Satoshi Nakamoto, whose identity is still unknown.

This paper describes a purely peer-to-peer version of electronic money known as Bitcoin.

With this event, Blockchain technology, literally a chain of blocks, made its public debut. The Blockchain is a type of Distributed Ledger Technology (DLT), a distributed, shared, encrypted database that acts as an irreversible and incorruptible repository of information. It is a digital platform that stores and verifies the entire chronology of transactions between users through the network (Nakamoto, 2008)

There is no unanimously accepted definition of blockchain. Nevertheless, it is possible to outline three complementary conceptualizations of this technology (Mavilia and Pisani, 2018)

From a technical point of view, the Blockchain is a database consisting of a ledger divided between users and can be openly inspected; it is not, therefore, physically present in a single server, but is placed on several computers at the same time, all synchronized real-time.

From the business point of view, it is a network where transactions, exchanges of values and exchanges of goods between users can be carried out without the existence of central mediators.

On the other hand, from a legal point of view, the Blockchain validates transactions, replacing the old centralized bodies.

To date, the most promising applications of this technology can be seen in the financial sector. Additional fields of application can be identified in the insurance sector (Dai and Vasarhelyi, 2017), data protection, intellectual property protection, electronic voting system, identity verification but also government services, the health sector and medical research (Nichol, 2016), in general for social purpose and catching-up of developing countries (Mavilia and Pisani, 2019).

3. BLOCKCHAIN APPLICATIONS IN AGRICULTURAL SECTOR

To generalize, the applications of this technology can be divided into two macro-groups: financial and non-financial applications.

As for the second area of application, numerous studies and numerous pilot projects have been launched to evaluate the blockchain applications in the agricultural sector, as following (Tripoli and Schmidhuber, 2018):

The agricultural supply chains present substantial inefficiencies, which affect all the players in the chain, from producers to consumers. It is estimated that the cost of operational supply chains constitutes two-thirds of the final cost of goods (Niforos, 2017).

The blockchain stores immutable records that are transparent and, in theory, accessible to any user. This technology has the potential to create huge efficiencies for each actor in the supply chain. The blockchain provides a platform for traceability in agricultural supply chains. It is thus able to keep track of the origin and guarantee the authenticity of agricultural products. In fact, food is the most direct way to get in touch with a place (Baralla et al., 2018).

This solution will make regulatory control easier as the product can be traced along the entire supply chain and possible fraudulent behavior that is discouraged in this way can be identified. However, elements such as hierarchy, Blockchain experiences and the industrial sector have a significant impact on logistics professionals in this field. (Hackius and Petersen, 2017).

The greater traceability of the production and processing of agricultural products will improve the ability to ensure compliance with food standards (national and international) and sustainability.

In addition, the agricultural sector will benefit from the blockchain to reduce costs, risks for sellers and banks and bring greater efficiency gains to supply chains for commercial financing operations. The blockchain uses smart contracts to automatically execute payment settlement in real time, evaluating delivery first, then verifying that the buyer has sufficient funds and finally securing the funds on behalf of the buyer awaiting delivery. These smart contracts can facilitate entrepreneurial collaboration of inter-organizational business processes in the context of smart rural supply chains (Prause and Boevsky, 2019).

The blockchain can also increase access to commercial finance. Commercial finance has not been able to meet demand, particularly from SMEs and emerging economies. Other types of financial services, such as payment, insurance and credit services, can also be carried out using this technology, thus helping the actors in the agricultural supply chain to reduce risk, manage liquidity and maximize returns.

As for payments, for many players in the agricultural value chain, financial transactions are mainly based on cash. This process is slow and expensive and is subject to risks such as theft and loss. Digital payment services make it possible to reduce costs and risks deriving from cash-based transactions, also generating data on the cash flows of the actors in the value chain that can be used to assess credit risk.

As for insurance applications, agricultural insurance is a risk management tool that helps stabilize agricultural income and investments in the event of losses. Insurance payments would become fully digitized and automated with the use of smart contracts and better insurance coverage would be possible.

As regards the credit sector, the main impediments for financial institutions to supply credit products to the sector are the cost of maintaining remote areas, the lack of data to assess the creditworthiness of the applicants or the guarantees.

The blockchain could provide financial institutions with data on the operations of farmers and other players in the value chain necessary to provide numerous financial services.

Agricultural markets are inherently volatile and agricultural and price incomes are vulnerable to exogenous shocks. Derivatives are used as a risk management tool to cover price risk and set a future price for the harvest. The blockchain could also be applied in agricultural derivatives markets.

Through blockchain technology, users are able to build digital identities. Blockchain technology generates a large amount of data from transactions in agricultural supply chains and agricultural financial services. The blockchain technology stores each recorded transaction, able to provide the actors in the supply chain with detailed records of their operations, financial service activities and more accurate and better-quality market information.

Blockchain technology could potentially act as a core technology that integrates other emerging digital technologies into its platform to continuously improve the management of the agricultural supply chain such as artificial intelligence, IoT, big data and 3D printing.

In addition, the blockchain is able to address many of the shortcomings of traditional land registry. This is because it provides a secure, fast and immutable method for registering land titles, which will promote trust in the reliability of the system. A virtuous example is land management in Ghana (Ender, 2019).

4. CASE STUDY: AGRIDIGITAL

AgriDigital was founded to solve some challenges of agri-food supply chains (FAO, 2019). The main crucial issues are related to some problems such as: The payment of the farmers is not contextual to the delivery of the goods; buyers do not have access to flexible financing to pay farmers; consumers do not know where the food comes from.

The AgriDigital platform simplifies and automates business processes for farmers and buyers, acquiring data on the goods and facilitating the transfer and reconciliation of data. The platform offered a huge leap forward in the management of raw materials.

Three pilot projects were conducted using the blockchain in order to generate a digital title on a physical product and perform payment on the blockchain, use the blockchain to track the movement of goods.

The objective was to verify whether the AgriDigital platform, supported by the blockchain, could facilitate the purchase and sale transactions.

These pilot projects have demonstrated the ability to eliminate counterparty risk by performing commodity transactions on a blockchain, allowing the supply chain to operate effectively and efficiently.

5. LIMITS, CHALLENGES AND RECOMMENDATIONS

The AgriDigital raw materials management platform is one of the existing blockchain solutions able to show how this technology can be a profitable solution for companies. This case study allows us to show how the applications of the blockchain can be feasible even in a non-financial context in terms of application potential.

These solutions aim to eliminate counterparty risk and reduce existing inefficiencies in the agricultural sector in order to bring more autonomy and control to farmers and their businesses.

However, there are some critical issues and additional challenges that need to be taken into consideration linked to the intrinsic characteristics of the blockchain technology and beyond.

First of all, it is necessary to create a robust digital infrastructure of IoT devices, sensors and integrations to ensure that the digital resource is reliable.

To do this, it is also necessary to have certainty about the inputs to be certified at each step to ensure that the information contained on the Blockchain is not only immutable but also accurate and truthful.

A further element to be taken into consideration is related to the level of digital connectivity that can be a problem in certain areas of the world where the connection is limited or even absent.

In order for these blockchain applications to be realized it is crucial that incentives are provided and that cooperation between the different actors in the value chain is encouraged.

Sometimes it happens that the various stakeholders have different and even conflicting interests.

All these aspects can be a reason for delaying the positive applicability and implementation of these blockchain solutions.

6. CONCLUSION

Through the analyzes carried out, this paper investigated how new technologies and, in particular, Blockchain technology can be implemented in various projects and initiatives in the agricultural sector, aiming to create trust within value chains and make them transparent and sustainable, integrating all the main stakeholders. Despite this, it is also true that there are still many aspects to be improved and problems to be solved, both technically and beyond.

The case of the AgriDigital platform, specifically, shows how it is possible, through the new technological tools, to mitigate the counterparty risk in agricultural transactions up to eliminating it, making secure payments and allowing the traceability and transparency that agricultural value chains need.

Further future research will aim to investigate if and how the challenges that still characterize these applications can be definitively overcome so as to confirm the Blockchain as a safe, reliable and transparent way to guarantee the traceability and integrity of agricultural products, in addition to further applications in the same sector.

REFERENCES

- Baralla, G., Ibba, S., Marchesi, M., Tonelli, R., & Missineo, S. (2018, August). A Blockchain Based System to Ensure Transparency and Reliability in Food Supply Chain. In *European Conference on Parallel Processing* (pp. 379-391). Springer, Cham.
- Dai, J., & Vasarhelyi, M. A. (2017). Toward blockchain-based accounting and assurance. *Journal of Information Systems*, 31(3), 5-21.
- Eder, G. (2019). Digital Transformation: Blockchain and Land Titles. OECD Global Anti-Corruption & Integrity Forum.
- FAO (2019). Blockchain for Agriculture Opportunities and Challenges. ISBN 978-92-5-131227-8.
- Hackius, N., & Petersen, M. (2017). Blockchain in logistics and supply chain: trick or treat? In *Proceedings of the Hamburg International Conference of Logistics (HICL)* (pp. 3-18).
- Mavilia R., & Pisani R. (2018). Management delle nuove tecnologie per l'inclusione e l'innovazione sociale. EGEA Editore.
- Mavilia, R., & Pisani, R. (2019). Blockchain and catching-up in developing countries: The case of financial inclusion in Africa. *African Journal of Science, Technology, Innovation and Development*, 1-13.
- Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system.
- Nichol, P. B., & Brandt, J. (2016). Co-creation of trust for healthcare: The cryptocitizen framework for interoperability with blockchain. *Research Proposal. ResearchGate*.
- Niforos, M. (2017). Beyond Fintech: Leveraging Blockchain for More Sustainable and Inclusive Supply Chains. *International Finance Corporation (IFC) EM Compass Note*, 43, 45-46.
- Prause, G., & Boevsky, I. (2019). Smart contracts for smart rural supply chains. *Bulgarian Journal of Agricultural Science*, 25(3).
- Tripoli, M., & Schmidhuber, J. (2018). Emerging Opportunities for the Application of Blockchain in the Agri-food Industry. *FAO and ICTSD: Rome and Geneva. Licence: CC BY-NC-SA*, 3.

IDENTIFICATION OF THE SPORTS PREDISPOSITION AS A SOCIAL RISK MANAGEMENT ELEMENT

Elena Fefilova¹
Natalia Pazdnikova²
Yuliya Karpovich³

DOI:

Abstract: *The relevance of activities on sports selection and sports orientation of children, including in order to assess health risks, is substantiated. A method for identifying a sports predisposition based on sports selection and orientation methods has been formed, and testing has been conducted. As part of the study, a group of participants was identified for which recommendations were made to limit the use of sports due to health risks. A financial risk assessment was carried out. The suggestions are formulated for using the methodology for identifying sports predisposition as a risk management tool.*

Aim of the study is the health risk assessment based on the methodology of sports selection and orientation.

Materials and methods. The methods of theoretical analysis and generalization, the bibliographic method of searching and studying scientific information, and system analysis are used.

Keywords: *Sports Selection, Sports Orientation, Health Risks, Risk Management*

1. INTRODUCTION

A new stage in the development of the Russian Federation is marked by the large-scale implementation of national projects as an instrument designed to ensure a qualitative change in the standard of living of the population in all areas. One of the key indicators of the national project „Demography” involves an increase in the proportion of citizens who are systematically involved in physical education and sports, up to 55%. This goal, in addition to popularizing the aspects of a healthy lifestyle, involves ensuring a competitive sports infrastructure and the development of the institution of sports training, including institutions of the municipal, regional and federal levels that operate within the framework of the budget for results-based budgeting and provide state social services. Note that in the framework of federal law, the criterion for distinguishing between the categories of “sports” and “physical education” is the implementation of competitive activity.

In accordance with the Budget Code of the Russian Federation, such institutions operate within the framework of the state (municipal) assignment mechanism and provide sports training services in Olympic, non-Olympic sports, sports for people with disabilities in the context of the stages of initial preparation, training, the stage of improvement of sportsmanship, stage of higher sportsmanship, while financing is carried out according to the normative per capita principle per one Nima, provided the job. To determine the quality of the service, it is assumed to use an indicator that reflects the sustained interest of those involved in the sport (the share of students enrolled in the next stage), and the athlete’s compliance with the federal standards. Note that the factors of conducting competitive activity and its effectiveness, which are fundamental for the formalization of sports training, are ignored.

¹ Perm National Research Polytechnic University, Komsomolsky Avenue, 29, 614990 Perm, Russia

² Perm National Research Polytechnic University, Komsomolsky Avenue, 29, 614990 Perm, Russia

³ Perm National Research Polytechnic University, Komsomolsky Avenue, 29, 614990 Perm, Russia

Every year, about 30-40 percent of people undergoing sports training are screened out during the transition between stages, including for health reasons and due to non-compliance with control standards. In addition, because of the initially non-optimal choice of sport, a young athlete, having spent years training, reaches the limit of his physical, anthropometric, psychological capabilities, which leads to stagnation or deterioration of sports results.

The issues of planning the volumetric indicators of state sports training services (the number of people involved in the preparation stage) are determined by the following factors: limited budget funding (planning is carried out “from the reverse”), the level of provision of the territory with sports organizations, and material and technical equipment. At the same time, considering the institute of sports of the highest achievements, the question of forecasting optimal for ensuring the formation of a competitive sports reserve, the number of participants remains unresolved (Bakulev S.E. et al., 2017; Aleshin I.N., 2018). At the same time, domestic researchers determine the low level of efficiency of forecasting competitive activity by insufficient awareness and use of information about the sports makings of future athletes (Zebzeev V. V., 2015).

In addition, in the framework of modern scientific research, a conclusion has been drawn about possible negative consequences for the physical and psychological health of athletes, especially significant in cases of applying inappropriate loads to the body's capabilities applied at all stages of sports training (5-8). So, according to research, the initial number of visits to medical institutions of young athletes is 3.7 times higher than the value of a similar indicator among children who are not involved in sports (Avdeeva T. G., 2009). At the moment, there is an extremely high level of sports improvement and competition, which leads to an increase in the intensity of the training process, an increase in loads and aggravates the influence of risk factors on the health of young athletes.

Thus, the relevance of enhancing the activities of sports selection and orientation of children, the development of technologies for identifying sports orientation is obvious.

2. METHODOLOGY

In the framework of studying the processes for identifying a sports orientation, the establishment of a conceptual apparatus is of particular importance: sports selection is a system of organizational and methodological measures, including pedagogical, psychological, sociological and biomedical research methods, on the basis of which the abilities of children, adolescents and youths for specialization are identified in a particular sport or group of sports, while sports orientation reflects the opposite process – definition of sport or specialization areas, the most appropriate level of abilities, inclinations and interests of the child (Volkov V.M., Filin V.P., 1983). In the first case, the goal is to identify the most gifted children for sports, in the second - the determination of the sports path for both young athletes and children involved in physical education. At the same time, a number of authors consider orientation as one of the stages of selection, which is an activity to determine a narrow sports specialization in a particular sport (Volkov V.M. et al., 1983; Melikhova T.M., 2006).

It should be noted that activities within the framework of sports orientation require the use of more complex technology for its implementation, analysis of an extensive methodological and methodological base, as well as tools for processing and interpreting test results. At the same time, domestic researchers highlight the problem of the lack of unified methodological

approaches to assessing abilities and justify the need to review, systematize and update existing methods (Shvarts V.B., Khrushchev S.V., 1984), in addition, the need for the use of information technologies in testing is substantiated.

Basically, the following aspects of sports orientation and selection are distinguished: pedagogical (assessment of motor function, motor skills, coordination abilities, etc.), psychological (determination of personality characteristics, structure of psychological activity, identification of interest in activities), biomedical (assessment of health, morphological and functional characteristics of the body, level of adaptation to physical activity, etc.), sociological (study of motivation, the influence of family, sport, team) (Sergienko L.P., 2013).

3. DISCUSSION

As part of the study, we have developed a methodology for identifying a sports orientation and assessing health risks, based on a comparison of test results with standard indicators established for the corresponding gender and age group by domestic researchers. The criteria used in the diagnostic process are shown in table 1.

Table 1 - Criteria for sports orientation

| Criteria group | Complex factors | Tests and indicators |
|---|--|--|
| Pedagogical (assessment of physical qualities) | Speed abilities | 30 m running |
| | Muscular strength | Flexion-extension of the arms in an emphasis lying |
| | Vestibular resistance | Roymberg test |
| | Stamina | Planck, torso lift |
| | Flexibility | Tilt forward from a standing / lying position |
| | Coordination Ability | Coordination Ability |
| | Speed and Power Ability | Long Jump |
| Biomedical (Anthropometric) | Level of Physical Development | Body Mass Index (WHO) |
| | Body Proportionality | Proportionality Index |
| Psychological | Persistence of Attention | Schulte Tables |
| | Reaction rate | Hand-eye reaction |
| | Individual personality characteristics | Individual typological questionnaire |
| | Type of nervous system | tapping test |
| | Type of temperament | Testing to determine the type of temperament |
| | Formation of motives for activity | Test for determining leading activities |

In order to ensure the coverage of various sports in assessing predisposition, our methodology in terms of assessing physical qualities contains tests and indicators that, on the one hand, are accessible and feasible for the subject, on the other hand, correspond to those complex factors that reflect physical fitness requirements, presented by various sports (N.G. Ongienko, I.S. Voropai, L.P. Sergienko, P.V. Ostashev, etc.), in accordance with relevant approaches, the coefficient of significance of criteria for a sport (in accordance with the accepted classifications of sports, Olympic and non-Olympic sports are distinguished, which in turn are divided into winter and summer sports, as well as by groups that characterize the features of the activities carried out in the framework of training for these types: cyclic, martial arts, applied, difficult coordination, shooting, speed-strength, technical), determined by factors of the age of the beginning of reception and the degree of influence of the studied abilities, qualities, inclinations on sports results.

Evaluation within each criterion involves determining the individual level of motor abilities based on the correlation of an individual test result with normative indicators, the scale including the allocation of unsatisfactory results and hazard markers, which are the basis for generating information about the presence of health risk.

The integral assessment of physical qualities (AFQ) for the j th sport (group of species) is calculated by the formula:

$$AFQ_j = FQ_1 * s_1 + FQ_2 * s_2 + \dots + FQ_i * s_i \quad (1),$$

where: FQ_i - coefficient of the individual level of motor abilities according to the i -th criterion;
 s_i - coefficient of significance of the i -th criterion.

A feature of anthropometric criteria is the need to consider each of them in relation to the specific requirements of the sport (group of sports). When evaluating the obtained value is compared with a given model characteristic, which is optimal for a specific group of sports.

Psychological criteria determine the need to use a significant number of instrumental methods (G. Aizenk, O.E. Yashchin, A.A. Krylov, S.A. Manichev, E.P. Ilyin, etc.), each of which has its own calculation algorithm and scale results. In order to unify in accordance with the significance of the test results for a sport, these parameters are reduced to a 5-point system (0–2 points — health risk, 3–4 — satisfactory, 5 — maximum level of compliance).

Comprehensive diagnostics of a sports orientation is a choice from an array of ratings for each of the studied sports (groups) that are most relevant (in accordance with the rating scale) to the athlete's individual profile, the level of his abilities, qualities and inclinations. A separate group is formed by persons with respect to whom a health risk is identified during sports.

It should be noted that the technology for identifying sports orientation based on the presented methodology involves the use of an information system that allows you to collect, store, process, analyze large amounts of data.

4. RESULTS

As part of the testing of the methodology, testing was organized for participants in the Perm International Marathon (September 2019): a sample of children involved in athletics (at the sports and fitness, primary or sports and fitness stage of sports training) was formed, aged 6 to 15 years.

The organizational and technical parameters of the testing made it necessary to include short, easy to implement, and, at the same time, significant tests in the process of sports selection in the diagnostic process of sports involvement (test to determine leading activity (psychological criterion), measurements by anthropometric criteria, rapid assessment - power, coordination abilities). Interpretation of the results provides for the development of recommendations for practicing complex coordination sports, which assess the complexity and beauty of the movements performed (for example, ski biathlon) - the first group; cyclic sports, requiring a primary manifestation of endurance, with a significant duration of competitive exercises (athletics, cycling, etc.) - the second group; recommendations of daily physical activity in accordance with the recommendations of the All-Russian Health Organization (health risks identified) - the third group.

Table 2. - Distribution of test results (gender and age composition)

| Age and gender category | Group 1 | Group 2 | Group 3 |
|-------------------------|---------|---------|---------|
| Girls (6-10 years old) | 32,20% | 40,68% | 27,12% |
| Boys (6-10 years old) | 17,81% | 60,27% | 21,92% |
| Girls (11-13 years old) | 29,63% | 44,44% | 25,93% |
| Boys (11-13 years old) | 24,00% | 85,19% | 7,40% |
| Girls (14-15 years old) | 40,00% | 60,00% | - |
| Boys (14-15 years old) | 20,00% | 80,00% | - |
| Average meaning | 27,27% | 56,90% | 15,83% |

The results of the study showed a rather high level of predisposition to cyclic sports - about 60% of the total number of participants.

Almost a third of young athletes showed indicators that form a positive prognosis in the framework of complex coordination sports.

Within the age group of 14-15 years, recommendations for physical activity were not formed due to the presence of health risks (group 3), which demonstrates the effectiveness of the implementation of sports selection and orientation at the training stage.

At the same time, on average, in relation to 16% of the participants recommendations were made to limit sports, which are caused not only by unfavorable forecasts of competitive activity, but also by health risks. More than half of the children in this group are between the ages of 6 and 10 years and the availability of information about sports predisposition, taking into account the average age of admission to the initial stage of sports training (9-10 years), provides parents and teachers with the opportunity to form a health-saving path for the development of the child.

In the framework of the study, in addition to the individual (private) nature and social orientation of the risks to the health of children involved in sports, it is possible to single out financial risks of a general nature, the subject of which is the institution of public administration. An assessment of such risks can be made on the basis of information that 21.9% of those involved in the initial stage of sports training (11-13 years old) have abilities, qualities and inconsistencies that do not correspond to sports, which directly affects the results of fulfilling control standards and the implementation of competitive activity and determines the inefficient use of budget funds for the training of such an athlete. For example, for the consolidated budget of the Perm Territory, the assessment of this risk is 33.5 million rubles (based on the average value of standard costs for the provision of sports training services at the initial stage - 52.4 thousand rubles per year for the student and the number of students at the stage initial training).

The health risks under study also determine the frequency and nature of visits to medical institutions for children whose physical indicators do not correspond to the level of training load in the framework of the chosen sport. The object of financial risk in this situation is the health authorities and compulsory health insurance funds, an assessment of such a risk at the Perm Territory is 7 million rubles. per year (based on the funding standard of 15.3 thousand rubles per person per year from all sources and the number of people involved).

The total financial risk assessment at the level of the Russian Federation is 9.1 billion rubles. (including 1.92 billion rubles for the budget of compulsory health insurance funds).

CONCLUSION

As part of the study, the methods of sports selection and orientation were used to manage social risks (children's health). Diagnostic mechanisms for sports predisposition provide increased competitiveness of sports activities, sustained interest in sports and the effectiveness of the provision of public sports training services by minimizing the cost of preparing a sports reserve. The application of the methodology for identifying a sports predisposition as a risk management tool will make it possible to mitigate the health risks of students by identifying the level of compliance of their abilities and inclinations with the requirements and potential loads.

REFERENCES

- Aleshin I.N., Slinkina N.E., Samoilova E.L. (2018) The uncertainty and nonlinearity in sports training course, manifestations and implementation. *Problemy sovremennogo pedagogicheskogo obrazovaniya*, no.58-3, pp.33-40.
- Avdeeva T. G. (2009) Introduction in children's sports medicine. Moscow: GEOTAR-Media, 176 p.
- Bakulev S.E. (2009) Improvement of the success forecasting effectiveness of combat sports athletes taking into account genetic bases of patrimonial, interspecific and intraspecific orientation. *Uchenye zapiski universiteta Lesgafta*, no.11 (57), pp. 35-39.
- Bakulev S.E., Dveirina O.A. (2017). Determination of number of athletes for prospect, nearest and current reserve as a way to manage preparation of sports national teams of the Russian Federation. *Uchenye zapiski universiteta Lesgafta*, no.4 (146), pp. 17-26.
- Gavrilova E.A., Larintseva O.S. (2018) Risk factors for sudden cardiac death in athletes at various stages of sports training according to a cardiac examination. *Sportivnaya meditsina: nauka i praktika*, 2018, no.2, pp.33-37.
- Makarov L.M. (2017). Sport and sudden death in children. *Rossiiskii vestnik perinatologii i pediatrii*, no.1, pp.40-46.
- Melikhova T.M. (2006) Implementation of principles and technologies of sports selection and orientation. *Uchenye zapiski universiteta Lesgafta*, 2006, no.22, pp. 37-41.
- P. Taylor, L. Davies, P. Wells, J. Gilbertson, W. Tayleur. (2019) A review of the Social Impacts of Culture and Sport. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/416279/A_review_of_the_Social_Impacts_of_Culture_and_Sport.pdf (02.10.2019).
- Sergienko L.P. (2013) *Sports selection: theory and practice*. Moscow: Sovetskii sport, 1048 p.
- Shvarts V. B., Khrushchev S. V. (1984) *Biomedical aspects of sports orientation and selection*. Moscow: Fizkul'tura i sport, 1984, 151 p.
- Volkov V.M., Filin V.P. (1983) *Sports selection*. Moscow: Fizkul'tura i sport, 1983, 176 p.
- Zebzeev V. V. (2015). Comparative analysis of the morphological features of Nordic combined skiers representing the different types of competitive qualification. *Uchenye zapiski universiteta Lesgafta*, no.5 (123), pp. 75-79.

IMPLEMENTATION OF QUALITY CONTROL ON SOIL SAMPLING

Zorica Sovrlić¹ 
Daniela Urošević² 
Ivan Svrkota³ 

DOI:

Abstract: *Adequate soil sampling with the implementation of quality control guarantees high accuracy outputs of chemical analysis of the sampled soil. Mining and Metallurgy Institute Bor, as accredited scientific institution, sampling the soil from various locations according to the previously established sampling plan and to the standards ISO 18400-101 and 180400-104. The standards define the sampling scheme. Control of compulsory monitoring of sampling quality is done by ISO 18400-106 standard. Monitoring the quality control of the sampled soil, means formation of Trip blanks and Field blanks. Developed quality control plan monitors the status of the mentioned blanks, which considers the initial chemical composition of the zero blank, its way of packing and transport to the place where sampling occurs, preservation and storage as well as chemical analysis on specific elements. During 2019, Mining and Metallurgy Institute conducted quality control after every sampling on 6 locations. Comparative chemical analysis of the blanks after the sampling, started with zero blank, resulted in non-existence of cross contamination of the sampled soil. Conclusion is that the sampling was implemented according to the given procedures and standards.*

Keywords: *Quality Control, Soil Sampling, Blank Samples.*

1. INTRODUCTION

Soil is a complex heterogeneous matrix composed of mineral and organic solid matter, liquid and gaseous components and living organisms. (Alloway,1995.) It presents the important part of the urban ecosystem which directly or indirectly has impact on life quality and people's health. Industrial and urban development of human society among many advantages and benefits, results in environmental pollution and soil pollution as well. So, it is of the great importance to do the soil control and analysis more frequently. Soil samples for the analysis can be taken in disturbed or in undisturbed condition, depending which parameters are to be examined. Soil sampling is performed according to the criteria applicable in the Republic of Serbia, and to the following standards:

- ISO 18400 Soil quality- Sampling/part 101; Frame work for the preparation and application of the sampling plan, 2007.
- ISO 18400 Soil quality-sampling- part 102; selection and application of sampling techniques, 2017.
- ISO 18400 soil quality- sampling –part 104; strategies, 2018.Ways of taking disturbed and undisturbed field samples are defined in ISO 18400-104 standard:
- Systematic unaligned sampling pattern
- Circular grid
- Stratified random sampling

¹ Mining and Metallurgy Institute Bor, Zeleni bulevar 35, 19210 Bor, Serbia

² Mining and Metallurgy Institute Bor, Zeleni bulevar 35, 19210 Bor, Serbia

³ Mining and Metallurgy Institute Bor, Zeleni bulevar 35, 19210 Bor, Serbia

Transport, storage, preservation and preparation of samples for the analysis are defined by standards ISO18400 Soil Quality-Sampling-Part105; Packaging, transport, storage and preservation of samples.

2. SAMPLING QUALITY CONTROL

Sampling quality control has 3 main goals: Monitoring and detecting errors which may occur in the process of sampling; sampling error control and to present the sampling variability.

Precondition for accuracy and reproducibility of analytical results is sampling quality control that includes the following:

- Representativeness of the sampled material
- Prevention of contamination and unwanted changes or changes made on the samples during terrain sampling, pre-treatment of the samples if it is necessary, transport, storage and preservation of samples
- Adjustment to all protective measures on the field

Laboratory preparation for sampling quality control occurs by using field and trip blanks, gathering control samples of every field sampling (double samples) in order to check the sampling precision.

3. TRIP AND FIELD BLANKS

Trip blanks are used to detect prospective mutual contamination of blanks during the transport. Sample container or any other agent for sample storage, identical to the one used for samples, must be filled with soil or any other material that resembles the soil. The parameters that are to be analyzed must be presented before the container fills. Container or the agent for sample storage closes and together with samples is transported back to laboratory. Blank is then at the same time analyzed with gathered samples.

Trip blank is analyzed on chemical elements on which the soil samples will be analyzed, before going to the terrain, and packaging in container for preserving blanks and after the transport to the laboratory. This way confirms or eliminates the possible cross contamination of samples during the transport.

Field blanks are similar to trip blanks but are used in order to reveal inconsistency in entire process- from the sample taking to the laboratory analysis. The sample must go through the entire process, from the field sampling, transport to the laboratory, preparation on the ring mill and chemical analysis. This way confirms or eliminates possible inconsistency in entire process, considering transport than preparation and chemical analysis at the end.

4. CONTROL SAMPLES

As it is already mentioned, in order to implement the quality control, the double samples are taken on the terrain to show the quality of sampling on previously defined points for sampling. They provide information that ideally rejects all errors of possible contamination sources, inconsistencies in sampling and check the applied analytical techniques.

In order to gain insight in sampling quality, r-control maps are established (map of duplicate samples). In r-control map are input the controlled values, differences of the compatible results of the repeated analysis of control samples.

5. RESULTS AND DISCUSION

The following text will present the results of the analyzed chemical parameters of the zero blank, trip and field blank, control samples, processed in R-control maps. Sampling location, analysis of the double soil samples on previously defined points of sampling, for the period from April to May will not be presented in this project. Location on which the soil monitoring occurs—once per month, is presented as Location 1, and is situated in Eastern Serbia. According to the previously established sampling plan, all the necessary requests for sampling are defined, on the mentioned location, figure 1 and figure 2.



Figure 1.
Site Sampling at Site 1



Figure 2.
Sampling quality control, field blank

Table 1 shows the results of analyzed chemical parameters of zero, field and trip blank. (month April). Results of the analyzed control samples (April -November) are presented in table 2. Table 3 presents the relative range and average value of measuring. Table 4 presents control limits of all R-charts (control maps). Chemical analysis of examined parameter, Tables 1 and 2. on control soil samples, zero, trip and field blank, was done in duplicate. The difference of the obtained values is put in R-chart for each examined parameter and presented on charts 1-8. According to the duplicate differences of the analyzed parameters(R- range), the control limits of R- charts are calculated central line, warning limit and the limit of action are also presented in R- charts , it can be clearly seen that there is no outlier -the values that jump out from the calculated limits. It is of the great importance to mention that the blank analysis is done after every sampling and compared with zero blank.

From Tables of analyzed blank, Table 1, on the same chemical elements as well as on the control samples, we can conclude that the contamination of samples during the transport is excluded and no inconsistency in the entire process from sampling to chemical analysis. By comparative analysis of the examined element, trip and field blanks, marked as 5Te-4 and 6Te-4, with zero blank, mostly comes to concurrence of analyzed parameters which are done before they went on the terrain and after they came back to laboratory.

Table 1.
Comparative chemical analysis of zero-blank from field and transport blank

| Sample name | Element, ppm | | | | | |
|----------------|--------------|-----|------|------|------|-------|
| | Cu | Be | Zn | Co | Pb | V |
| 0-Blank | 33.3 | 1.3 | 82.3 | 15.5 | 20.6 | 101.6 |
| | 33.6 | 1.2 | 82.5 | 15.3 | 20.5 | 101.1 |
| 5Te-4 | 34.4 | 1.3 | 83.6 | 15.6 | 20.6 | 102.1 |
| | 34.3 | 1.2 | 83.8 | 15.3 | 20.6 | 101.9 |
| 6Tr-4 | 34.1 | 1.3 | 82.9 | 15.5 | 20.5 | 101.2 |
| | 34.7 | 1.3 | 83.0 | 15.4 | 20.6 | 101.2 |

Table 2.
Chemical analysis of control samples

| Sample name | Element, ppm | | | | | |
|-------------|--------------|------|------|------|------|-------|
| | Cu | Be | Zn | Co | Pb | V |
| 1K-1 | 53.0 | 1.2 | 74.6 | 10.6 | 23.0 | 109.8 |
| 1K-2 | 52.9 | 1.1 | 74.3 | 10.4 | 23.5 | 109.6 |
| 2K-1 | 54.5 | 1.2 | 72.3 | 13.8 | 22.7 | 105.6 |
| 2K-2 | 54.4 | 1.1 | 72.4 | 13.5 | 22.8 | 105.2 |
| 3K-1 | 76.3 | 1.2 | 89.6 | 12.9 | 26.5 | 125.3 |
| 3K-2 | 76.4 | 1.3 | 88.9 | 12.9 | 26.2 | 124.9 |
| 4K-1 | 67.4 | 1.1 | 73.8 | 14.2 | 26.6 | 113.3 |
| 4K-2 | 67.8 | 1.2 | 74.5 | 14.1 | 26.7 | 113.8 |
| 5K-1 | 117.2 | 1.1 | 79.3 | 21.2 | 19.9 | 116.8 |
| 5K-2 | 117.4 | 1.2 | 78.4 | 21.6 | 20.0 | 115.9 |
| 6K-1 | 123.5 | 0.98 | 80.5 | 20.6 | 21.6 | 223.8 |
| 6K-2 | 124.0 | 0.97 | 80.4 | 20.5 | 21.8 | 222.6 |
| 7K-1 | 142.6 | 1.0 | 87.2 | 18.6 | 19.9 | 142.2 |
| 7K-2 | 142.1 | 0.97 | 87.4 | 18.5 | 21.2 | 141.1 |
| 8K-1 | 144.1 | 1.2 | 78.6 | 13.1 | 22.5 | 135.7 |
| 8K-2 | 144.2 | 1.2 | 77.9 | 12.9 | 22.7 | 135.2 |

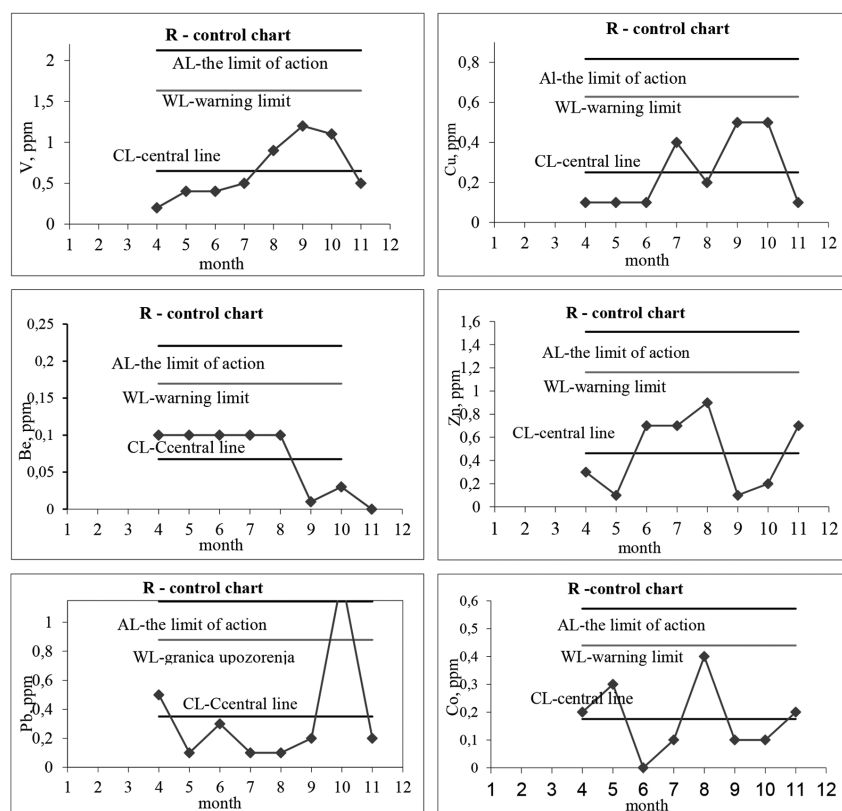
Table 3.
Relative range and mean of measurement, ppm

| Sample name | Cu | | Be | | Zn | | Co | | Pb | | V | |
|----------------|-----|--------|------|--------|-----|--------|-----|--------|-----|--------|-----|--------|
| | R | Sr.vr. | R | Sr.vr. | R | Sr.vr. | R | Sr.vr. | R | Sr.vr. | R | Sr.vr. |
| 0-Blank | 0.3 | 33.45 | 0.1 | 1.25 | 0.2 | 82.4 | 0.2 | 15.4 | 0.1 | 20.55 | 0.5 | 101.35 |
| 5Te-4 | 0.1 | 34.35 | 0.1 | 1.25 | 0.2 | 83.7 | 0.3 | 15.45 | 0.0 | 20.60 | 0.2 | 102.0 |
| 6Tr-4 | 0.6 | 34.40 | 0.0 | 1.30 | 0.1 | 82.95 | 0.1 | 15.45 | 0.1 | 20.55 | 0.0 | 101.2 |
| 1K | 0.1 | 52.95 | 0.1 | 1.15 | 0.3 | 74.45 | 0.2 | 10.5 | 0.5 | 23.25 | 0.2 | 109.7 |
| 2K | 0.1 | 54.45 | 0.1 | 1.15 | 0.1 | 72.35 | 0.3 | 13.65 | 0.1 | 22.75 | 0.4 | 105.4 |
| 3K | 0.1 | 76.35 | 0.1 | 1.25 | 0.7 | 89.25 | 0 | 12.9 | 0.3 | 26.35 | 0.4 | 125.1 |
| 4K | 0.4 | 67.6 | 0.1 | 1.15 | 0.7 | 74.15 | 0.1 | 14.15 | 0.1 | 26.65 | 0.5 | 113.55 |
| 5K | 0.2 | 117.3 | 0.1 | 1.15 | 0.9 | 78.85 | 0.4 | 21.4 | 0.1 | 19.95 | 0.9 | 116.35 |
| 6K | 0.5 | 123.75 | 0.01 | 0.975 | 0.1 | 80.45 | 0.1 | 20.55 | 0.2 | 21.7 | 1.2 | 223.2 |
| 7K | 0.5 | 142.35 | 0.03 | 0.985 | 0.2 | 87.3 | 0.1 | 18.55 | 1.3 | 20.55 | 1.1 | 141.65 |
| 8K | 0.1 | 144.15 | 0 | 1.2 | 0.7 | 78.25 | 0.2 | 13 | 0.2 | 22.6 | 0.5 | 135.45 |

Table 4.

Results of R-Limits of control chart: CL central line, WL alert limit, and AL detection limits

| Sample name | Cu | | | Be | | | Zn | | |
|-------------|--------|-------|--------|-------|--------|--------|--------|-------|--------|
| | CL | WL | AL | CL | WL | AL | CL | WL | AL |
| 0-Blank | 0.272 | 0.684 | 0.8911 | 0.067 | 0.1689 | 0.2198 | 0.381 | 0.958 | 1.2476 |
| 5Te-4 | 0.272 | 0.684 | 0.8911 | 0.067 | 0.1689 | 0.2198 | 0.381 | 0.958 | 1.2476 |
| 6Tr-4 | 0.272 | 0.684 | 0.8911 | 0.067 | 0.1689 | 0.2198 | 0.381 | 0.958 | 1.2476 |
| 1K | 0.25 | 0.627 | 0.816 | 0.06 | 0.169 | 0.220 | 0.46 | 1.161 | 1.511 |
| 2K | 0.25 | 0.627 | 0.816 | 0.06 | 0.169 | 0.220 | 0.46 | 1.161 | 1.511 |
| 3K | 0.25 | 0.627 | 0.816 | 0.06 | 0.169 | 0.220 | 0.46 | 1.161 | 1.511 |
| 4K | 0.25 | 0.627 | 0.816 | 0.06 | 0.169 | 0.220 | 0.46 | 1.161 | 1.511 |
| 5K | 0.25 | 0.627 | 0.816 | 0.06 | 0.169 | 0.220 | 0.46 | 1.161 | 1.511 |
| 6K | 0.25 | 0.627 | 0.816 | 0.06 | 0.169 | 0.220 | 0.46 | 1.161 | 1.511 |
| 7K | 0.25 | 0.627 | 0.816 | 0.06 | 0.169 | 0.220 | 0.46 | 1.161 | 1.511 |
| 8K | 0.25 | 0.627 | 0.816 | 0.06 | 0.169 | 0.220 | 0.46 | 1.161 | 1.511 |
| | Co | | | Pb | | | V | | |
| | CL | WL | AL | CL | WL | AL | CL | WL | AL |
| 0-Blank | 0.1818 | 0.456 | 0.5941 | 0.272 | 0.6849 | 0.891 | 0.5363 | 1.347 | 1.7526 |
| 5Te-4 | 0.1818 | 0.456 | 0.5941 | 0.272 | 0.6849 | 0.891 | 0.5363 | 1.347 | 1.7526 |
| 6Tr-4 | 0.1818 | 0.456 | 0.5941 | 0.272 | 0.6849 | 0.891 | 0.5363 | 1.347 | 1.7526 |
| 1K | 0.175 | 0.439 | 0.571 | 0.35 | 0.879 | 1.143 | 0.65 | 1.632 | 2.124 |
| 2K | 0.175 | 0.439 | 0.571 | 0.35 | 0.879 | 1.143 | 0.65 | 1.632 | 2.124 |
| 3K | 0.175 | 0.439 | 0.571 | 0.35 | 0.879 | 1.143 | 0.65 | 1.632 | 2.124 |
| 4K | 0.175 | 0.439 | 0.571 | 0.35 | 0.879 | 1.143 | 0.65 | 1.632 | 2.124 |
| 5K | 0.175 | 0.439 | 0.571 | 0.35 | 0.879 | 1.143 | 0.65 | 1.632 | 2.124 |
| 6K | 0.175 | 0.439 | 0.571 | 0.35 | 0.879 | 1.143 | 0.65 | 1.632 | 2.124 |
| 7K | 0.175 | 0.439 | 0.571 | 0.35 | 0.879 | 1.143 | 0.65 | 1.632 | 2.124 |
| 8K | 0.175 | 0.439 | 0.571 | 0.35 | 0.879 | 1.143 | 0.65 | 1.632 | 2.124 |

**Figure 3.** R control charts for V, Cu, Be, Zn, Pb, Co

6. CONCLUSION

On the location 1, the soil sampling was done every month according to the standards given above. Results of the analyzed parameters on the sampled soil are not part of this work, for justified reasons, except blanks and control samples. Their analysis is done according to the law, without any exception. The sampling and sampler control were done in laboratory in two ways:

- With blanks,
- and with taking control samples in duplicate.

Results of chemical analysis of control samples are presented on R-control chart, made of the range of two measurements and of the difference in results of two measurements. The value of the arithmetical range is used as a central line (CL). Standard deviation is used for calculation of control limits where the AI is limit of action and WL is warning limit. Results from the R-control map present that all the results of analyzed parameters on blanks and control samples, go into range of measuring and are acceptable, and can be used for further statistic data, as well as the quality of sampling and measurements in specific period of time. The double samples are used for monitoring the sampling quality and precision of analytical laboratory processes. Field and trip blanks illustrate the effects of managing the sample, they reveal the contaminations such as dust and atmospheric precipitation. The conclusion is that the Laboratory for preparation in Mining and Metallurgy Institute, adequately conducts the quality control on soil sampling, that results in high accuracy of chemical analysis outputs.

ACKNOWLEDGMENT

The authors are grateful to the Ministry of Education, Science and Technological Development of Republic of Serbia for financial support for projects TR34005 „Development of advanced materials and technology for multifunctional application based on ecological knowledge”, TR 33023 „Development of Technologies for Flotation Processing of Copper Ore and Precious Metals in Order to Achieve Better Technological Results”

REFERENCES

- Standard SRPS ISO / IEC 17025, *General requirements for the competence of testing and calibration laboratories*, (2017).
- Standard ISO 18400 Soil quality — Sampling —Part 101: *Framework for the preparation and application of a sampling plan*, (2017).
- Standard ISO 18400 Soil quality — Sampling —Part 102: Selection and application of sampling techniques, (2017).
- Standard ISO 18400 Soil quality — Sampling —Part 104: Strategies, (2018)
- Law on Land Protection („SG RS”, No. 112 of December 30, 2015).
- The Regulation on the Limit Values of Polluting, Harmful and Hazardous Substances in Land (Official Gazette of RS, No. 30 of 20 April 2018)

SEARCHING FOR THE MANAGERIAL IMPLICATIONS IN ITALIAN AUTONOMOUS MUSEUM. WHAT ARE THE PERSPECTIVES AND BARRIERS?

Marianna Marzano¹

Monia Castellini²

DOI:

Abstract: *The Italian public museums have been involved by a Reformation that has changed their status from non-autonomous museums to autonomous museums (Decree 171/2014 by the Ministry of Cultural Heritage and Tourism). This change has had significant implications for the Italian museums, introducing new managerial practices that has an impact on the system museum overall. Usually, public museums are supported by public funds. The autonomy could be a first step in overcoming critical issues that could be found in museums, aimed at supporting strategic and decision-making objectives and evaluating performance.*

Often, the literature has revealed that the lack of managerial cultural is due to barriers (ideological, technical and, organizational) that do not permit the development of managerial practices.

Through a documental analysis, it has been investigated the main management innovations and its accounting implications. Consequently, the degree of compliance of the museums with del legislator's request has been analysed.

Keywords: *Management, Accounting, Performance, Italian Museums.*

1. INTRODUCTION

Over the years the Italian cultural sector and, specifically the museum sector, has been indirectly affected by the reform processes that have involved the national public system driven by the introduction of company logics attributable to the New Public Management paradigm (Hood, 1991; Guthrie and Parker, 1990; Osborne and Gaebler, 1992; Cepiku et al., 2008). The process of change for the Italian museum system was characterized by two main lines of intervention. One is the reform path that involved the national public system as a whole and therefore also the museum organizations (as peripheral realities, not autonomous, of the central administration); the second concerns the introduction of ad hoc regulatory interventions however limited in their scope of managerial change (Marzano and Castellini, 2018).

Over the last five years, however, the Italian cultural sector has also undergone a specific and targeted reform process aimed at implementing managerial logic, principles, and tools in line with the NPM assumptions (Zan, 1999; Bonini Baraldi, 2007), oriented towards the pursuit of institutional goals.

The studies on the museums have underlined many features that characterize this field. The first limit has been identified in the dependence totally on public funding that has required the in-

¹ Department of Economics and Management – University of Ferrara – Ferrara, Via Voltapaletto 11 - 44124 Ferrara (FE), Italy

² Department of Economics and Management – University of Ferrara – Ferrara, Via Voltapaletto 11 - 44124 Ferrara (FE), Italy

tensification of the communicative dimension to find external resources. The problem of funds (Donato, 2013) is accentuated with the reduction and resizing of public financial resources. Another element that has emerged from the sector is the poor propensity to results and the inadequate attention to the planning and definition of objectives to be pursued in terms of quality and quantity, the development of an organizational culture oriented to results and control, as noted in other sectors of public administration.

The main concerns the lack of autonomy and, consequently, the subordination from the central structure in terms of decision-making, organization, and economic-financial management.

With particular regard to this last aspect, the absence of a system of autonomy in this sense has been significant, which has conveyed the museums belonging to the public towards an expense reporting system.

Autonomy has been declined at least in three main aspects: the first concerned the introduction for museums of an own accounting system, moving away from management (no longer in economy) that saw the processing of financial information in the budget of the membership body. The second refers to the introduction of both financial and economic-asset accounting; the third relates to the management of resources deriving from revenues for ticketing and other activities (donations, rents, etc.) through the introduction of a treasury and cash service at a credit institution.

Also, in this context, as it happened in the past for other sectors of the Italian public system and not only, it may be necessary to intervene to analyse and understand the real state of the art and degree of implementation of the reform started with the decree 171/2014.

The main studies are been implemented in a context where did not exist the autonomy, giving evidence about the importance to implement the strategies and how the museums needed for managerial tools to be managed. Actually, the studies are not compared to the economic-financial autonomy and its degree of application within the museums. If the autonomy and the implementation of accounting system is an informative tool to support for the management, consequently it is important firstly to investigate the degree of compliance of the museums with the legislator's requests, answering to the following research question:

- Regarding the accounting provisions defined by the Legislator, what is the degree of regulatory compliance by autonomous state museums?

It has been conducted a documental analysis of 32 autonomous museums, searching the budget and final balances during the period 2016-2019.

The study is structured in six sections: following the introduction, there is the theoretical background on the focus of the study on the museums and the Italian reform of the Ministry of Cultural Heritage. The third section explains the research framework, the fourth develops the analysis and, finally, there are the final considerations.

The work permits us to understand the implications of the reform analyzing the reform according to the implications of the autonomy and applications of accounting practices required. The study should give also a contribution to the literature on the effects of autonomy and accounting in the cultural sector. On the other hand, the study could give a contribution to the practitioners to understand the point of weakness and cope with the problem of the relevance of guidelines.

2. THEORETICAL BACKGROUND.

2.1. Museums and autonomy: which implications for performance and accounting.

As underlined by the researchers, the influence of New Public Management reforms has redefined the management of public sector to reinvent the governance of the public administration and to translate some practices derived by the private sector within the public field (Hood, 1991; Osborne and Gaebler, 1992; Cepiku et al., 2008). Sometimes, it happens a gap between the goal of the reforms and the conditions to apply the normative requirements in practice (Pavan and Reginato, 2004) and, the troubles to introduce managerial practice within the public administration (Ongaro and Valotti, 2008). At the same time, among the sectors that are influenced by this new paradigm, it emerges the scenario of cultural heritage, introducing the concept of management in this field (Thompson, 2001; Zan, 1999, 2003).

This closeness of cultural heritage to economic and managerial principles had generated a debate between the experts of both areas (Bourdieu, 1992). The researchers have focused on the interests of the studies on the performance of museums, strategies and, the accounting systems to favor the introduction of a control and management process.

Most museums were not capable to implement managerial strategies for two main reasons highlighted by the studies; the first because they aim to perceive social mission and do not consider the economic sustainability (Migale, 2001), the second reason subsists because they are based on the public funds (Sibilio Parri, 2004).

The introduction of accounting has been considered as an element to use for the performance measurement that could introduce improvement through management and control (Chirieleison, 1999). The introduction of accounting within the public museums is linked to the reform of the public sector and to the level of autonomy granted to them to do not depend on the central administrative structure. Indeed, the reform of the public sector, in general, has noted the role of autonomy, because the condition of autonomy permits to introduce financial and economic autonomy.

Autonomy, so that it can be considered as such and offer a capacity for action and a certain degree of responsibility, must allow the independence of an organization from the point of view: of decision-making choices (autonomy of will), of the attribution of possession of the collections or properties (property autonomy), monitoring of inflows and outflows of monetary resources (financial autonomy), the ability on the one hand to find resources and on the other to manage them adequately (economic autonomy) (Chirieleison, 2002). As highlighted, for cultural organizations in general, the degree of autonomy is in relation to the form of management adopted (Del Sordo et al., 2012), i.e. the legal framework determines the level of autonomy, the degree of accountability and the documentation accounting that must be provided in compliance with the requirements of the Legislator.

The autonomy granted to the public museums has been seen as a first element that hinders the management, but as noted by Chatelain-Ponroy (2001) there are other kinds of obstacles such as ideological, technical, and organizational.

Paulus (2003), analysing how French and American museums measure the performance, sustains the relevance of factors such as effectiveness and efficiency to manage the museums.

Indeed, the analysis of the characteristics of scenario permits to select the methods to manage the museums according to the objectives and approaches adopted by museums (Dainelli, 2003). Turbide and Laurin (2009) reveal the importance to measure the results but using a multidimensional approach that takes into consideration the features of the cultural organizations such as the resources, cultural assets and, collectivity.

Gstraunthaler and Piber's (2012) research has shown that accounting data has often been considered synonymous with quality and performance. Nevertheless, this is an incomplete view because, as they show, quantitative data must be integrated with qualitative ones. According to this research, the accounting data support the selection of activities, actions and key figures that allow the strategic objectives to be achieved.

In Italy, the studies about the introduction of accounting system within the public museums are still few, and they are the explorative studies (Gori and Fissi, 2012). Until 2014, the year of introduction of the new reform of cultural heritage, with the exception of private museums, the Italian public museums have not an accounting system because depending on the central administration.

2.2. Museum's reform and economic & financial autonomy.

The Franceschini Reform has brought about a structural change, with a top-down approach, substantially intervening on the entire structure of the Ministry, in order to respond to the expenditure revision logic, implementing an organizational decentralization and redefining the relationships between the center and the periphery (Casini, 2016; Cammelli, 2015).

The regulatory intervention has had a wide impact on the museum sector, where the main measures include:

- the creation of a General Directorate for Museums (DGM);
- seventeen Regional Museum Centers;
- regional Secretariat;
- reduction of the number of Superintendencies;
- selection initial of 20 cultural institutes of I and II management level between museums and archaeological parks - extended subsequently to 32 with successive decrees (DM 44 of 23/01/2016) and dependent from the DGM and not more from the Superintendencies of belonging.

With reference to the museums designated as special autonomy, reference is made to a technical / organizational-scientific autonomy, the autonomy that in turn refers to L.352 / 97 „Provisions on cultural heritage” which initiated the first form of experimentation, which made the Superintendency of Pompeii autonomous.

For the museums, designated as such, the following has been envisaged: the redefinition of their organizational structure by expanding the functional areas; the establishment of the Board of Directors chaired by the director of the museum, the Scientific Committee and the Board of Auditors; the elaboration of a „reinforced” Statute (subject to approval), the only instrument of regulatory autonomy in the absence of regulatory capacity and making talk, in this respect, of „autonomy retained” (Forte, 2015: 7).

The form of management of state museums and of local institutions belongs to the budget assumes the exclusive nature of a document of planning and reporting of resources, a condition from which the so-called „super museums” selected are currently excluded thanks to the autonomy. Autonomous museums are required to carry out an accounting report that shows “the planning and results of financial and accounting management of economic resources available to the museum,,, in compliance with the principles of publicity and transparency” (art.3 DM December 23, 2014).

Furthermore, in terms of resource management, one of the new features concerns the possibility of generating and managing one’s own cash flows and reinvesting them in activities; redirecting only 20% of the revenues deriving from the ticketing and rents to a solidarity fund in compliance with the principle of equalization; facilitating the acquisition of donations, defining the ticketing parameters.

The studies about the reform of Ministry of Cultural Heritage in Italy has been analyzed according to many juridical perspectives (Pastori, 2015; Cammelli, 2016a, 2016b; Carmosino, 2016; Casini, 2016a, b, 2017) highlighting the structural changes introduced by the reform, the new features of text law and which kind of innovation and incertitude observed.

The management perspective has been introduced by the researchers to give evidence of the reforms’ effects on the governance of the public cultural system. Marzano and Castellini (2018) use a network governance perspective to give evidence of the process of the decentralization finalized to grant the autonomy and to enforce the process of the exchange between public and private realities.

In 2018, after the conference in Rome at the MAXXI museum, it has been elaborated a report thanks to the contribution of some managers of the autonomous museums. This document represents a first summary and testimony of the management of the autonomous museums that introduce the critical issues that emerged during the beginning years of management (Barrera et al., 2018), such as no guidelines, paucity of human resources and specialized, restricted autonomy, and so on. Giusti (2018) aims to verify if the requirements of normative dispositions are really satisfied, recurring to the case study on the Gallerie Nazionali di Arte Antica of Rome.

In the analysis of reform is delineated the importance of the human resources (Zan et al., 2018) finalized to find a new approach for the management of human resources because around that there is the trouble on the low understanding of the notion of management.

3. RESEARCH FRAMEWORK

The study has as its reference universe the 32 museums involved in the MiBACT reform, which has led to the conferral of autonomy for them. From the sites of the museums, all the information and documentation developed in compliance with the requirements of accounting law have been extrapolated from the section on transparency. The documentation concerns the period 2015-2018 for 20 museums that obtained autonomy in 2014 and 2016-2018 for the remaining 12 structures that were affected by the subsequent decree 44/2016. The documents refer to the accounting period and not to the year of publication.

According to the L.352/97 that regulates the autonomy, museums were asked to draw up economic-financial communication documents divided into budgets and final balances. The budget, with authorization, constitutes a limit to the expenditure commitments and is divided into:

1. Financial estimate;
2. A general overview of financial management;
3. Budget estimate.

These documents are followed by the Planning Report, the multi-year Report; the Demonstration Table of the presumed administrative result; the report of the board of auditors.

The documents of a final nature relating to the economic-financial management results are:

1. Budget account
2. Income statement
3. Balance sheet
4. Explanatory notes

The annexes to the general report are added to the production of these information documents: Administrative situation; the Management Report; the report of the board of auditors. These documents are selected and analyzed to detect the degree of completeness if present on the museums' websites.

4. THE INTRODUCTION OF THE NEW ACCOUNTING SYSTEM IN MUSEUMS: ANALYSIS OF THE PUBLISHED DOCUMENTATION.

Consultation on museum websites has made it possible to become aware of the documentation produced since the start of autonomy. Not all information relating to the pre-reform period can be found, as for state museums, in the absence of autonomy, the publication obligation did not apply. The analysis concerns two groups of museums, respectively those made autonomous in 2014 and 2016. The results refer to the economic-financial year and not to the year of publication.

As shown in Table (1), about the situation of the 20 museums (granted autonomy in 2014) during the first year of activity, not all museums have fully fulfilled the required accounting production. An unstable trend emerges that reveals the low degree of completeness of the documentation. In 2015, only 60% completed a financial forecast plan, of which only 15% in accordance with the accounting harmonization standard. The figure falls further if we consider the elaboration of the management budget (45%), economic (15%), the multi-year budget is drawn up by 25% and only 5% reports the presumed administrative result.

In 2016, the situation improves, especially to the extent that, although not all the museums present the same documentation, there is an increase in the percentage of 15% of museums that begin to prepare the forecast documentation according to the obligation of harmonization. While the subsequent years record a percentage, decrease compared to the forecast budgets. With regard to the final accounting documents, excluding those for the 2018 year, it emerges that in the years 2015-2016 approximately 60% provided the financial and management reporting, given that it is attested around 5% for 2017. In 2018, after four years, the situation is not improving, because the number of documents contained on the website is still low and incomplete. Only half of the museums have produced the cash flow and financial statement, followed by 40% that have elaborated on the balance sheet.

The documentation on the surveys on operating events is the one that has the highest degree of default in the four-year period considered, in fact the Income Statement and the Balance Sheet are only processed by 30% of the museums in 2015, by 35% in 2016 and 2018, and 5% in 2017, demonstrating the high level of variability.

Table 1. Forecasting documents_ AUTONOMOUS MUSEUMS dpcm 171/2014

| Year | 2015 | 2016 | 2017 | 2018 |
|---------------------------------|------|------|------|------|
| Decisional financial estimate | 60% | 75% | 60% | 15% |
| Budget Management | 45% | 75% | 70% | 35% |
| Summary overview | 15% | 45% | 40% | 25% |
| Budget Estimate | 10% | 30% | 50% | 40% |
| Multi-year financial statements | 25% | 40% | 35% | 15% |
| Forecast administrative result | 5% | 10% | 25% | 25% |

Table 1.1. Reporting documents_ AUTONOMOUS MUSEUMS dpcm 171/2014

| Year | 2015 | 2016 | 2017 | 2018 |
|--------------------------|------|------|------|------|
| Cash flow statement | 55% | 60% | 5% | 55% |
| Financial statement | 60% | 60% | 5% | 50% |
| Income statement | 30% | 35% | 15% | 35% |
| Balance sheet | 30% | 35% | 5% | 40% |
| Explanatory note | 15% | 10% | / | 10% |
| Administrative situation | 35% | 35% | 5% | 25% |
| Programmatic Report | 10% | 20% | 15% | 15% |

Regarding the twelve museums that obtained autonomy with the 2016 DM (Tab. 2 and 2.1) a similar situation emerges for the museums involved in the first „experimentation”. In fact, in 2016 only 50% presents the financial budget and 60% the management budget. Particular attention is to be paid to the fact that, despite the obligation, of that 50%, as many as 42% did not adapt the writing of the budget to the accounting harmonization rules. Moreover, also for this second tranche of museums, we highlight how much the percentages with respect to the economic surveys are substantially low, surpassing by a little 40% of the museums involved.

Table 2 Forecasting documents_ AUTONOMOUS MUSEUMS DM 44 del 23/01/2016

| Year | 2016 | 2017 | 2018 |
|---------------------------------|------|------|------|
| Decisional financial estimate | 50% | 67% | 25% |
| Budget Management | 58% | 83% | 50% |
| Summary overview | 17% | 42% | 17% |
| Budget Estimate | 25% | 25% | 17% |
| Multi-year financial statements | 8% | 33% | 25% |
| Forecast administrative result | 17% | 33% | 25% |

Table 2.1. Reporting documents_ AUTONOMOUS MUSEUMS DM 44 del 23/01/2016

| Year | 2016 | 2017 | 2018 |
|--------------------------|------|------|------|
| Cash flow statement | 33% | 25% | 25% |
| Financial statement | 42% | | 25% |
| Income statement | 42% | 8% | 25% |
| Balance sheet | 42% | / | 8% |
| Explanatory note | 17% | 8% | 8% |
| Administrative situation | 25% | / | 8% |
| Programmatic Report | 17% | 25% | / |

As noted for the first part of the museums, the situation is the same. In this case, there are very few museums (only the 25%) that have presented the cash flow, financial and income statement.

Table 3. Comparison forecasting documents_ AUTONOMOUS MUSEUMS 2014 and 2016

| First Year of autonomy | Museums (2014) | Museums (2016) |
|---------------------------------|----------------|----------------|
| Decisional financial estimate | 60% | 50% |
| Budget Management | 45% | 58% |
| Summary overview | 15% | 17% |
| Budget Estimate | 10% | 25% |
| Multi-year financial statements | 25% | 8% |
| Forecast administrative result | 5% | 17% |

Table 4. Comparison reporting documents_ AUTONOMOUS MUSEUMS 2014 and 2016

| First Year of autonomy | Museums (2014) | Museums (2016) |
|---------------------------------|----------------|----------------|
| Decisional financial estimate | 55% | 33% |
| Budget Management | 60% | 42% |
| Summary overview | 30% | 42% |
| Budget Estimate | 30% | 42% |
| Multi-year financial statements | 15% | 17% |
| Forecast administrative result | 35% | 25% |

Comparing the first year of autonomy for both categories of the museums (Tab. 3 and 4), the analysis permits us to observe that the situation is not changed. Rather, it looks worse despite the experience of the previous implementation of the Reform. But, if for the first year is expected a not totally uniformity, it could be considered negative to notice the same practice in 2018, after 5 and 3 years respectively from the status of autonomy.

5. RESULTS

The analysis of the accounting documents gives a panorama on the degree of compliance of the autonomous museums. From the analysis emerges many interesting results for the museums for which autonomy is introduced for the first time.

In general, there is a general state of non-compliance, which is evident from the consultation of forecast and final documents.

Meanwhile, comparing the documents of the museums, there is high variability and fragmentation compared to the documentation presented. Moreover, a positive data is related to a sufficient degree of adequacy to fulfillment for the financial decision-making and management budget (where with the exception of the first year of the start of the 2014 and 2016 autonomy, there is a slightly lower percentage).

Another element that underlines the paucity of a long-term vision is the lack of a multi-year vision that can be found in the low percentage of multi-year financial statements present.

Finally, for these museums, there is a low capacity to draw up a summary document, such as the general picture and the presumed result of administration, in relation to the forecast documents already prepared.

6. FINAL CONSIDERATIONS

The present study represents an analysis proposal with respect to understanding the repercussions of autonomy within state museums, of which only an experiment for Special Superintendence had taken place in the past. At the start of the study, a low percentage of museums were found which following the formalities imposed by the Legislator, show complete accounting documentation. In response to the first research question, therefore, there is a low degree of compliance with the law. Further information that comes from the analysis of the presence of documentation shows how much museums are more fulfilling in preparing a financial budget and less the final balance sheet. In this way, museums can hardly take advantage of the advantages deriving from an accrual accounting that allows seeing the connection between the resources consumed and the results achieved.

The lack of attention to the fulfillment of the results involves multiple observations. The first concerns the evidence that, as noted for the other public administrations (Guthrie, 1998), also for the museums interested in the reform, there are difficulties in implementing changes as per legislation. This aspect, fundamentally, depends on the lack of introduction to the reform and changes taking place, as well as the shortage of preparation for the required changes.

Another consideration, that permits to read these results, consists in the presence of human resource able to manage compliance to the requests and the know-how able to manage the areas of economic autonomy, bringing to the attention its „advantages” (Zan et al., 2018). Untrained human resources ready for the changes introduced, employees not aware of the advantage deriving from the use of accounting data implies a lack of understanding of the effects that autonomy can generate. (Mussari, 2011).

The level of the incompleteness of the obligations could bring out a poor propensity to monitor economic efficiency (Sibilio Parri, 2004), a phenomenon not new for this sector and in general for the public administration. In fact, there is the repetition, for the museum sector, of the same mechanisms, already occurred for the public administration sector with the introduction of reforms.

Finally, the level of compliance gives photography about the adaptation of autonomous museums to the new regulatory provisions, but the incompleteness of data could be linked to the feature of the public sector and to the presence of technical and organizational obstacles (Chatelain-Ponroy, 2001). Indeed, these obstacles are translated into the troubles due to the personnel policies and waiting for the turnover or insertion of new professional figures, lack of preparation and guide to the innovations introduced, the new accounting system not supported by adequate knowledge to recur them.

Future developments in the work could lead to an understanding of the reasons why museums are non-compliant and whether the accounting system is considered and used as an information tool for management purposes. The expected results would allow having a greater knowledge with respect to the link between autonomy and management in the cultural sector, in an attempt to understand if “some areas of autonomy are not fully understood in their innovative and/or exploited scope or, otherwise, are insufficient cultural and financial resources indispensable for this purpose „(Mussari, 2001, p.20).

REFERENCES

- Barrera, P., Gennari Santoni, F., Felicori, M., Casini, L., & Lampis, A. (2018). Musei autonomi e Sistema nazionale dei Musei: un primo bilancio di gestione. *Economia della Cultura*, 28(1-2), 227-248.
- Bonini Baraldi, S., (2007). Management, beni culturali e pubblica amministrazione.
- Bourdieu, P. 1992. *Les règles de l'art: genèse et structure du champ littéraire*. Paris: Minuit
- Cammelli, M. (2016) a. L'avvio della riforma del Mibact: echi dalla periferia. *Aedon*, (1), 0-0.
- Cammelli, M. (2016) b. Problemi, soluzioni, riforme. *Aedon*, (2), 0-0.
- Cammelli, M., (2015). "The Picklock of the Cuts of Spending in the Reorganization of Mibact." *Aedon* (1):1-5.
- Carmosino, C. (2016). Il completamento della riforma organizzativa del Mibact: i nuovi istituti autonomi e il rafforzamento dei poli museali. *Aedon*, (1), 0-0.
- Casini, L. (2016) a. La riforma del Mibact tra mito e realtà. *Aedon*, (3), 0-0.
- Casini, L. (2016) b. Ereditare il Futuro: Dilemmi sul Patrimonio Culturale, Bologna, Il Mulino.
- Casini, L. (2017). Trasformazioni dello Stato e riforme nel settore dei beni culturali. *Economia della Cultura*, 27(3), 395-400.
- Cepiku, D., Meneguzzo, M., & Senese, M. (2008). *Innovations in public management and governance in Italy*. Roma: Aracne.
- Chatelain-Ponroy, S. (2001). Management control and museums. *International Journal of arts management*, 38-47.
- Chirieleison, C. (2002). *La gestione strategica dei musei*. Milano: Giuffrè.
- Chirieleison, C., (1999). La valutazione delle performance nelle gestioni museali: problematiche operative e tecniche. *Studi e note di economia*, 1, 143-168.
- Dainelli F. (2003). The accounting information system of museums http://ernest.hec.ca/video/pedagogie/gestion_des_arts/AIMAC/2003/resources/pdf/C/C20_Dainelli.pdf
- Del Sordo, C., Orelli, R. L., & Pazzi, S. (2012). Modelli di gestione e sistemi informativi-contabili di biblioteche e musei. *Economia Aziendale Online*, 3(2), 191-212.
- Donato, F., (2013). *La crisi sprecata. Per una riforma dei modelli di governance e di management del patrimonio culturale italiano*. Aracne editore.
- Forte, P. (2015). The New State Museums: A First Step in the Right Direction. *Aedon*, (1), 0-0.
- Giusti, M. (2018). I musei autonomi: il caso delle Gallerie Nazionali di Arte Antica. *Aedon*, (1), 0-0.
- Gori, E., & Fissi, S. (2012). Dalla contabilità finanziaria ai risultati economico-patrimoniali nei musei pubblici: una proposta metodologica/From financial accounting to financial results in public museums: a methodological framework. *IL CAPITALE CULTURALE. Studies on the Value of Cultural Heritage*, (6), 127-154.
- Gstraunthaler, T., & Piber, M. (2012). The Performance of Museums and Other Cultural Institutions: Numbers or Genuine Judgments? *International Studies of Management & Organization*, 42(2), 29-42.
- Guthrie, J., & Parker, L. (1990). *Public Sector Management and Challenge of Managerialism*. Guthrie, Parker & Shand.
- Hood, C. (1991). A public management for all seasons? *Public administration*, 69(1), 3-19.
- Marzano, M., & Castellini, M. (2018). The Reform of the Italian Ministry of Cultural Heritage: Implications for Governance of the Museum System. *The Journal of Arts Management, Law, and Society*, 48(3), 206-220.
- Migale L., (2001). Un bilancio per i musei. [file:///D:/user/Downloads/aspetti%20economicoaziendali%20dei%20musei%20\(3\).pdf](file:///D:/user/Downloads/aspetti%20economicoaziendali%20dei%20musei%20(3).pdf)
- Mussari, R. (2011). *Economia delle amministrazioni pubbliche*. Milano: McGraw-Hill.

- Mussari, R. (Ed.). (2001). *Manuale operativo per il controllo di gestione*. Rubbettino Editore.
- Osborne, David, and Ted Gaebler. 1992. *Reinventing Government: How the Entrepreneurial Spirit Is Transforming the Public Sector*. Reading, MA: Addison-Wesley.
- Pangallozzi, M. C. (2019). L'istituzione museale: effetti e prospettive di una conquistata autonomia. *Aedon*, (1), 0-0.
- Pastori, G. (2015). La riforma dell'amministrazione centrale del Mibact tra continuità e discontinuità. *Aedon*, (1), 0-0.
- Paulus, O. (2003). Measuring museum performance: A study of museums in France and the United States. *International journal of arts management*, 50-63.
- Pavan, A., & Reginato, E. (2004). *Programmazione e controllo nello Stato e nelle altre amministrazioni pubbliche: gestione per obiettivi e contabilità economica*. Giuffrè.
- Sibilio Parri, B. (2004). *Quale bilancio per il museo. Misurare e comunicare i risultati*.
- Thompson, G. D. (2001). The impact of New Zealand's public sector accounting reforms on performance control in museums. *Financial Accountability & Management*, 17(1), 5-21.
- Turbide, J., & Laurin, C. (2009). Performance measurement in the arts sector: the case of the performing arts. *International journal of arts management*, 56-70.
- Zan, L. (2003 a). Autonomia, processi decisionali e controllo nelle istituzioni culturali. *Economia della Cultura*, 13(4), 465-476.
- Zan, L. (2003). *Economia dei musei e retorica del management*. Electa.
- Zan, L. (Ed.). (1999). *Conservazione e innovazione nei musei italiani: management e processi di cambiamento*. Etas libri.
- Zan, L., Baraldi, S. B., & Santagati, M. E. (2018). Missing HRM: the original sin of museum reforms in Italy. *Museum management and curatorship*, 33(6), 530-545.

ADEQUACY OF THE AMOUNT OF OWN RESOURCES OF FOOD ACCOUNTING ENTITIES IN 2018 IN SLOVAKIA

Katarína Tasáryová¹

Renáta Pakšiová²

DOI:

Abstract: *It is very important for these companies to choose an adequate asset resource structure in order to eliminate risks in their business. It includes, for example, the risks associated with reduced solvency due to high indebtedness, thus the high value of external assets and low liquidity of assets. On the other hand, the high level of own resources of assets is not an unambiguously positive indicator, as own resources of assets are objectively one of the most expensive. Establishing an adequate level of own resources of assets in company is a key role of management in its optimal business setup towards long-term positive business results. The aim of the paper is to assess the adequacy of the amount of own resources of food business in 2018 in Slovakia on the basis of financial analysis indicators.*

Keywords: *Equity, Capital, Non-Current Assets Long-Term Liabilities, Golden Rule of Financing*

1. INTRODUCTION

Today, companies are becoming increasingly demanding in terms of competition. There is a constant increase in the number of companies aiming to achieve the best possible market position. It is important for these companies not only to make profits and reduce costs, but also to optimally set up the resources to finance their respective types of assets, given the obvious advantages and disadvantages of each. Therefore, business entities have to look for an answer to the question of how they will finance their assets. Optimizing the resources of property finance is a very demanding and time-consuming process for which the company is making a lot of effort. Property resources can be explored from two perspectives. The first aspect deals with the origin of assets, the subject of which is the perspective of the company, which is the basis of the division of resources into own and foreign. Own resources represent the contributions of the owners and foreign liabilities are associated with the obligation to return these resources to the creditor within a specified time. Second, the legal aspect refers to claims of third subjects against the company, which have a dual nature (Šlosárová, 2018):

- legal claims of various creditors of the company, such as employees, suppliers, state, banks, and so on,
- legal claims of owners to the assets of the company.

The assessment of the adequacy of the amount of own resources of company property is important for several reasons. To assess the adequacy of the amount of own resources it is possible to use the golden rule of financing, where the sum of non-current assets should correspond to the amount of own resources and long-term liabilities. The adequacy of own resources means not only that the company can finance its business mainly through its own resources, but also that it is creditworthy in the eyes of its business partners. It will also avoid liquidity problems. In

¹ University of Economics in Bratislava, Dolnozemska cesta 1, 852 35 Bratislava, Slovakia

² University of Economics in Bratislava, Dolnozemska cesta 1, 852 35 Bratislava, Slovakia

cases where short-term foreign (recoverable) resources are at most equal to current (short-term) assets, it is more likely to be able to settle its liabilities on time.

When examining food companies operating in Slovakia in 2018, it is necessary to analyze data from the individual financial statements of these companies. The financial statements are available on the publicly available state-managed website of the register of financial statements (<http://www.registeruz.sk>) or the private company Finstat (<https://www.finstat.sk>). The authors included all companies with the scope of SK NACE from 10110 to 11070 in the research. From the published financial statements of individual companies for the year 2018 the balance sheet containing the items of assets and liabilities of examined companies is relevant for authors research. The following items are selected from the items of assets and liabilities: non-current assets, equity and long-term liabilities. Based on the data sets obtained for the whole group of food industry companies in the Slovak Republic, the authors analyzed the fulfillment of the requirements of the golden rule of financing for 2018. Visualization of the results of the research is presented in the form of tables and graphs.

2. THEORETICAL BASIS FOR THE ASSESSMENT OF THE ADEQUACY OF THE AMOUNT OF THE OWN RESOURCES OF COMPANIES

Financing through own resources is often more expensive than financing through external resources. The way, form and technique of own funds financing depends, firstly, on the choice of the legal form of business and, secondly, on the size and procedure of collecting the owners' deposits according to the size of the company (Šebo, 2014). The company's own resources are cumulated as owners' deposits and the components produced from the company's profits during its existence and represent long-term resources of financing.

In the case of optimum financing of assets, it is necessary to respect, among other things, the golden rule of financing, which expresses the coherence between the availability of financial resources and the tying of assets acquired through them. Pursuant to that rule, the resources by which the various components of assets are financed should be available in the undertaking for at least the period during which the relevant component of assets is committed in the undertaking.

Own resources are a permanent resource, which is always available to the company. In accounting, own resources are defined as equity, which is generally described in the Accounting Act as a difference between assets and liabilities. In § 2 par. article 2 of the Accounting Act (2019) states: "The accounting is to account for facts about the state and movement of assets, the state and movement of liabilities, the difference between assets and liabilities, income, expenses, takings, outgoings and profit or loss". The definition of the difference between assets and liabilities is dealt with in the accounting procedures for entrepreneurs³ in § 59 par. 1, where it is determined that equity is the difference between assets and liabilities. The difference in assets and liabilities is an indirect definition of equity based on a modified extended balance sheet equation having the form:

$$\text{Equity} = \text{Assets} - \text{Liabilities} \quad (1)$$

³ Decree of the Ministry of Finance of the Slovak Republic no. 23054/2002-92 laying down details of accounting procedures and framework chart of accounts for entrepreneurs accounting in the double entry bookkeeping system, as amended (hereinafter referred to as "accounting procedures").

The accounting procedures for double-entry bookkeeping entrepreneurs list the equity components with the appropriate numerical and verbal representation of the framework chart of accounts for entrepreneurs where specific equity components are accounted for (Table 1).

Table 1. Numerical and verbal indication of equity account

| Number of account | Name of account |
|-------------------|--|
| 411 | Capital |
| 412 | Share premium |
| 413 | Other capital funds |
| 414 | Valuation differences from the revaluation of assets and liabilities |
| 416 | Valuation differences from revaluation in mergers, fusions and divisions |
| 417 | Legal reserve fund from capital contributions |
| 418 | Indivisible fund from capital contributions |
| 419 | Changes in capital |
| 421 | Legal reserve fund |
| 427 | Other funds |
| 428 | Retained earnings from previous years |
| 429 | Accumulated losses from previous years |
| 431 | Economic result of approval |

Source: Decree of the Ministry of Finance of the Slovak Republic no. 23054/2002-92 laying down details of accounting procedures and framework chart of accounts for entrepreneurs in the double entry accounting system, as amended

The Commercial Code characterizes net business assets, which are “business assets after deduction of obligations incurred by the entrepreneur in connection with the business” (Commercial Code, § 6 paragraph 3). Equity is formed by own resources of financing business assets of the entrepreneur according to a special regulation (Commercial Code § 6, paragraph 4). In simplified terms, equity can be said to be an accounting expression of net assets or, conversely, net assets expressed in accounting are called equity. Since part of the business assets do not meet the definition of assets under the Accounting Act and part of the liabilities under the Commercial Code do not meet the definition of liabilities under the Accounting Act, part of the business capital cannot be considered part of equity, which means that this part is not recognized in the balance sheet (Farkaš, 2018).

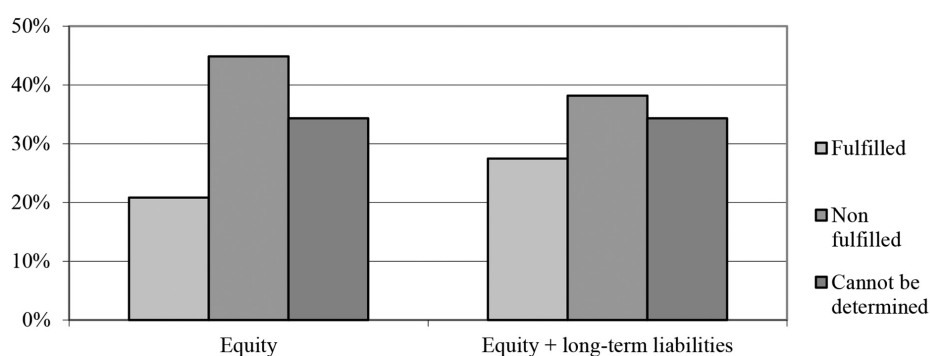
The most important component of equity is the capital, which represents the monetary expression of the sum of monetary and non-monetary contributions of all partners to the company (Commercial Code § 58, paragraph 1). The capital is compulsorily created by limited liability companies of at least € 5,000, joint stock companies of at least € 25,000 and simple companies for shares of at least € 1. In the case of cooperatives, the capital is made up of the sum of the membership deposits on which the individual members of the cooperative undertake to repay and whose minimum amount is equivalent to € 1 250. Limited partnerships are not legally obliged to create registered capital, but the Commercial Code provides for a minimum deposit of limited partners in the amount of 250 € (Srnišová, 2018).

3. ANALYSIS OF FOOD COMPANIES IN SLOVAKIA IN 2018

Pursuant to the legislation of the Slovak Republic, companies accounting in the double entry bookkeeping system report equity in the balance sheet. The balance sheet is one of the components of the financial statements (Šlosárová, 2017). Companies are required by the Accounting Act to deposit the financial statements in the register of financial statements, which is publicly

available on the website <http://www.registeruz.sk>. Financial statements and information on individual companies as well as financial results are also provided by the private company Finstat. In both sources, data is generated in the form of table to a limited extent. To obtain more extensive and detailed data, it is necessary to add data from individual financial statements that are relevant to author's research. These data include, for example, equity, long-term liabilities and so on.

The subject of the research are food companies established in the Slovak Republic. In 2018, there are 2,045. In accordance with the golden rule of financing, the resources used to finance assets should be available at least for the period during which the assets in question are tied to the company. It follows from the foregoing, that when examining golden rule of financing, all long-term resources can be included in the research, that is to say, in addition to equity, long-term liabilities, because these are available in company for more than 1 year. Long-term liabilities include the following items: long-term trade payables, other long-term payables and long-term bank loans. From the food companies examined in 2018, 20.83 % of companies are able to finance their assets through their own resources, 44.84% of companies do not meet the golden rule of financing, so long-term resources are not sufficient to finance assets. For the remaining undertakings, compliance with the golden financing rule cannot be determined because they do not recognize non-current assets or equity. 6.65% of the examined food companies need long-term liabilities in addition to equity to finance non-current assets (Graph 1).



Graph 1. Assessment of Compliance with the Golden Funding Rule

Source: Own calculations based on company's financial statements

The examined companies have a different legal form of business, with the most represented limited liability companies and the least state-owned enterprises. The authors focused on meeting the golden rule of financing and also on the reported equity. From the balance sheet of individual companies, three items are relevant for the author's research, namely equity, non-current assets and long-term liabilities. The golden rule of financing is fulfilled, if the value of equity and long-term liabilities is equal to or higher than the value of non-current assets. From the point of view of the analysis of the group of companies, that meet the golden rule of financing according to their legal forms, the most are limited partnership (90.60%), followed by joint stock companies (7.68%) and the remainder being limited partnerships and cooperatives. From the examined companies state-owned enterprises and simple companies for shares do not meet the golden rule of financing (Table 2). This structure was expected due to the uneven distribution of the number of companies by legal form of business.

Table 2: Structure of companies according to the legal form of business and meeting the golden rule of financing in each legal form of business

| Legal form of business | Total number of companies in legal form of business | Number of companies meeting the golden rule of financing | Share of companies in legal form of business meeting the golden rule of financing (in %) | Share of legal form of business on meeting the golden rule of financing (in %) |
|---------------------------|---|--|--|--|
| General partnership | 8 | 3 | 37.50 | 0.58 |
| State-owned company | 1 | - | - | - |
| Limited liability company | 1912 | 472 | 24.69 | 90.60 |
| Limited partnership | 6 | 1 | 16.67 | 0.18 |
| Simple company for shares | 2 | - | - | - |
| Cooperative | 13 | 5 | 38.46 | 0.96 |
| Joint stock company | 103 | 40 | 38.83 | 7.68 |
| Total | 2 045 | 521 | - | 100 |

Source: Own calculations based on company's financial statement

According that one of the relevant items in the assessment of the golden rule of financing is equity, it is necessary to assess its amount in terms of legal forms of business. Limited liability companies, joint stock companies, simple companies for shares, limited partnerships and co-operatives have a prescribed amount of equity or minimum deposit, so these companies should not report zero or negative equity, because this would mean for a particular company, that it does not have enough own resources to cover the assets, which means the property is covered by foreign resources (liabilities). Also, company would have to convert assets into cash as soon as possible to ensure liquidity. From the examined companies, limited liability companies have the highest representation, of which 73.22% recognize a positive equity (Table 3).

Table 3: Structure of equity in individual legal forms of business

| Legal form of business | Total number of companies in legal form of business | Share of companies in legal form of business with positive equity (in %) | Share of companies in legal form of business with negative equity (in %) | Share of companies in legal form of business with no equity (in %) | Total (in %) |
|---------------------------|---|--|--|--|--------------|
| General partnership | 8 | 100 | - | - | 100 |
| State-owned company | 1 | 100 | - | - | 100 |
| Limited liability company | 1912 | 73.22 | 25.16 | 1.62 | 100 |
| Limited partnership | 6 | 66.67 | 33.33 | - | 100 |
| Simple company for shares | 2 | 50.00 | 50.00 | - | 100 |
| Cooperative | 13 | 84.62 | 15.38 | - | 100 |
| Joint stock company | 103 | 90.29 | 8.7 | 0.97 | 100 |

Source: Own calculations based on company's financial statement

The examined food companies are represented in all regional territorial units of Slovakia, with the Banská Bystrica region ranking first and the Bratislava region ranking last (Figure 1).

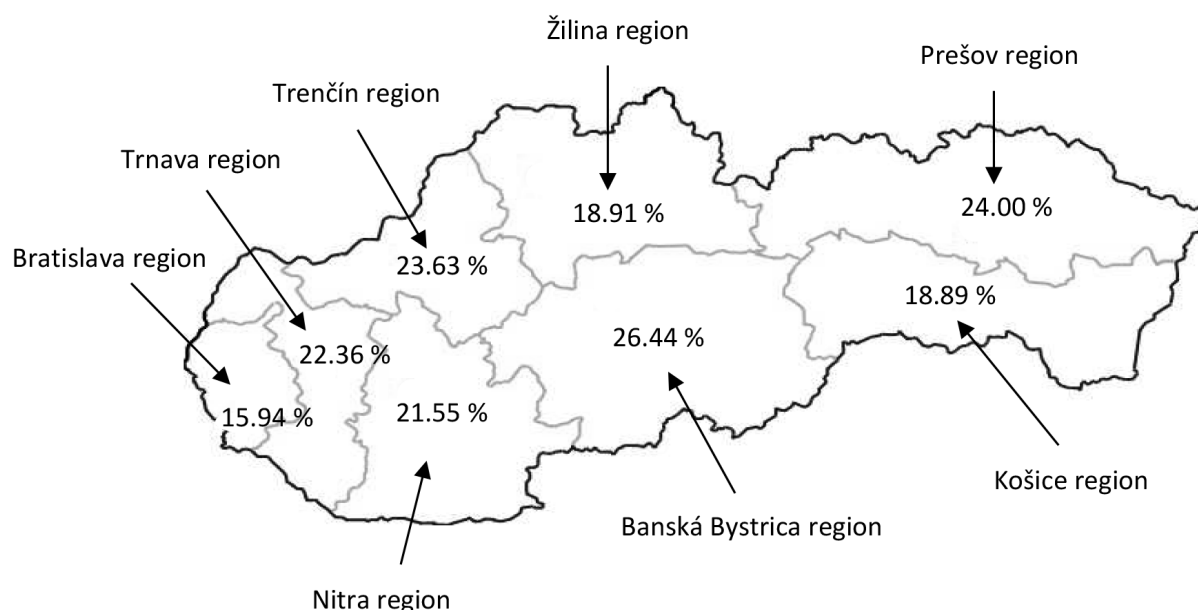


Figure 1: Assessment of the golden rule of financing in individual regions in Slovakia

Source: Own calculations based on company's financial statement

4. FUTURE RESEARCH DIRECTIONS

The future research will focus on the assessment of the structure of equity and the dependence of the amount of equity and specific types of assets, as well as efforts to identify direct sources of financing of the acquired fixed assets. It will also analyze the distribution of profit and the settlement of losses in companies in relation to their consequences in business performance and profitability in subsequent accounting periods. The causes of the established reporting of zero or negative equity of some companies in 2018 will also be analyzed. The observed differences in the fulfillment of the golden rule of financing in relation to the national economic parameters of the territorial units of Slovakia will be further analyzed.

5. CONCLUSION

Own resources represent a permanent resource for a company that exists in the company throughout the business. These are long-term resources that are constantly available in the company, so they should be tied especially to non-current assets, that are used by a particular company in the long term. In accounting, equity is understood as equity, which is the difference between the entity's assets and liabilities. At the inception of the company, equity consists of deposits that individual partners invested in the company (Máziková, 2016). During the conduct of business activity is created from internal or external resources. Internal resources are resources created by the company's own operations, from the profit. External resources are obtained from external environment, respectively they arise from changes in the company's external environment, such as donations received from partners or positive valuation differences from the revaluation of assets. The most important component of the equity of companies is the capital representing the monetary expression of the sum of monetary and non-monetary contributions of all partners in the company.

Research has shown that only 20.83% of food companies meet the golden rule of financing in the Slovak Republic in 2018, which means that they have enough own resources to cover

non-current assets. Taking into account the long-term liabilities available to businesses for more than one year, the results increased by only 6.65%. At 34.33% of food companies, compliance with the golden rule of financing cannot be determined, because they do not show one of the necessary items for research, equity, non-current assets or long-term liabilities. The remaining companies do not have enough own resources and long-term liabilities to finance non-current assets, which means that non-current assets are also covered by short-term liabilities, which may cause the company's solvency and liquidity problems.

When analyzing the amount of equity, the most attention is given to limited liability companies, as they have the highest representation in the examined food companies. In these companies, the value of the capital should be at least € 5 000, which means that the value of the equity in these companies should not be zero or negative. Research shows that 92.41% of limited liability companies report positive equity. Zero, respectively the negative equity of companies indicates that their liabilities are equal, respectively higher than their assets. This situation is negative not only for company's owners, but also for creditors. If this situation arises, companies should try to increase the value of equity as soon as possible so that its total amount reaches positive value.

According to the individual regions of the Slovak Republic, the Banská Bystrica Region is the first in terms of compliance with the golden rule of financing, where 26.44 % of food companies have enough own resources to cover non-current assets. The last place is the Bratislava Region, where only 15.94 % of companies meet the golden rule of financing.

The total research shows that in 2018, approximately one quarter of food companies in Slovakia meet the golden rule of financing, which is a very low percentage. The majority of companies should seek to increase equity so that they are able to finance their business mainly from their own resources while increasing credibility with creditors.

ACKNOWLEDGMENT

This article is an output of the project APVV no. APVV-16-0602 "Enhancement of the relevance of the accounting data in the SR - from expenses to value".

REFERENCES

- Farkaš, R. (2018). *Vlastné imanie obchodných spoločností. Účtovné aspekty*. Bratislava: Wolters Kluwer.
- Máziková, K., Ondrušová, L. & Seneši, N. (2016). *Účtovníctvo vlastníckych transakcií*. Bratislava: Wolters Kluwer.
- Opatrenie MF SR č. MF/23054/2002-92, ktorým sa ustanovujú podrobnosti o postupoch účtovania a rámcovej účtovej osnove pre podnikateľov účtujúcich v sústave podvojného účtovníctva v znení neskorších predpisov.
- Srnišová, P. (2018). Záporné vlastné imanie ako indikátor existencie transakcií medzi spriaznenými osobami: Negative Equity as an Indicator of the Existence of Transactions Between Related Parties. *MMK 2018: recenzovaný zborník príspevků z mezinárodní Masarykovy konference pro doktorandy a mladé vědecké pracovníky, ročník IX., 17. – 21. prosince 2018, Hradec Králové, Česká republika*. (pp. 381-386). Hradec Králové: MAG-NANIMITAS.
- Šebo, A. (2014). *Podnikov financie*. Nitra: Vydavateľstvo SPU.

- Šlosárová, A. (2018). Zmeny vo vykazovaní položiek vlastného imania v súvahe podnikateľa a ich vplyv na finančnú situáciu účtovnej jednotky: Changes in presenting of equity items in balance sheet of entrepreneur and their impact on financial position of accounting entity. *AIESA – budovanie spoločnosti založenej na vedomostiach: zborník: 16. medzinárodná vedecká konferencia: Bratislava, 5. - 6. november 2015.* (pp. 376-386). Bratislava: Vydavateľstvo EKONÓM.
- Šlosárová, A., Blahušiaková, M. (2017). *Analýza účtovnej závierky*. Bratislava: Wolters Kluwer.
- Zákon č. 431/2002 Z. z. o účtovníctve v znení neskorších predpisov.
- Zákon č. 513/1991 Zb. Obchodný zákonník v znení neskorších predpisov.

THE INFLUENCE OF THE GEOGRAPHICAL AREA ON WINE PRODUCTS. A CASE STUDY

Camelia Slave¹

DOI:

Abstract: *Geographic Information Systems allows visualization of spatial data (data with an associated GPS location) in the form of a map and analyzes the relationships and patterns between data layers. Geographic Information Systems (GIS) create friendly maps that are visually understood by both growers and researchers.*

By reporting different data collections in a geographic area, Geographic Information System, can help manufacturers better understand spatial models and relationships to make management decisions. Variability in a geographical area has economic consequences; Understanding this variability is the first step towards efficient vineyard management.

From a digital altitude model - DEM (a grid that covers the known territory) we can deduce:- hypsometric map, to define the area for producing certain varieties of wine vertically; soil map, to define areas with soil type; CLC map showing the coverage of the land; relief units map, types of geomorphological units in the study area.

The purpose of the article is to present the current situation of vineyards located in the Vrancea County.

Keywords: *Geographical Information Systems (GIS), Production, Maps, Viticulture.*

1. INTRODUCTION

The origins of the vineyards are losing in time. The archaeological excavations discovered fossils and plants in warehouses dating from the Paleocene and Eocene period. Today there are rough 24.000 of vine varieties, of these only 150 are used in a generalized way and of these 9 varieties produced the classical wines. [8] The vine corresponds to the genus *Vitis*, it classified distinctly way in the family Vitaceae, Vitidaceae, Ampelidaceae, it is belonging botanical order of Rhamnales, but included the Rhamnaceae and Leeaceae family. The genus *Vitis* is subdivided into two subgeneruses: *Euvinis* (authentic grapes) and *Muscadinia* (her fruit is called muscadin).

The first regions where the wine appeared, that think was certified by archaeological discoveries are in Armenia and Azerbaijan. From these areas it reaches in Greece (*oinos*) and Rome (*vinum*). From Rome it spreads to the Roman provinces. Once time the vine is introduced into the Roman Empire, the way of organizing the territory begins to improve, land improvement (irrigation, drainage), different planting distances (for common and tree-bearing crops), fertilization (organic, green, liquid).

The vineyard plantation is mentioned among the first agricultural crops on the territory of ancient Dacia. There are evidences that the first traces of viticulture activity in the present territo-

¹ University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Mărăști Blvd, Bucharest, Romania

ry of Romania date back to the Neolithic period, when the gathering and hunting tribes became stable, they are practicing agriculture and animals' husbandry. [3] [5]

In Mesopotamia (today Iraq), the vineyards dates from the 4th millennium BC, more exactly, from the Sumerian period. The first consignment was doing by Strabo (63 BC-19 BC), he describes the fact that the vineyards horns were very large, so two people could reach them with their extended arms.

In ancient Hebrew is mentioned the existence of the famous „Chanaan grape” today being the variety of Raisin vine of Palestine. In the old Babylon the vineyard was used for food and landscape. [8]

The situation of vineyards plantations. Today, more than half of the total area planted, worldwide, with vineyards is in Europe. In Asia the largest plantations there are in Iran, Turkey and China. The highest density of plantations from Africa is founding in Egypt and South Africa. In South America, the largest plantations are founding in Argentina, Brazil and Chile.

Since 2010 in Europe, the area planted with vineyards has been reduced because to adapt the provisions of the Wine Market Common Organization, as follows:

- France reduced the area planted by 1% to 825,000 ha,
- Italy reduces the area cultivated by 2% and has 798,000 ha of vine,
- Of worldwide Argentina, Chile and the United States have maintained same area cultivated during Brazil, China and New Zealand increased by 1%, Australia has reduced cultivated area by 3% and South Africa by 1%.

The geographic information systems can be seen as a useful tool in agriculture because some goals can be reached more easily by monitoring input and output data. So, it can also reduce the negative effects on the environment. [11]

2. VINEYARD OF ROMANIA

Among the wine producing countries of the European Union, Romania occupies the 5th place on the vineyard surface, 6th place on the production of grapes and wine and owns one third of European Union vineyards. At national level, the area cultivated with vines occupies about 1.4% of the entire agricultural area of the country, and the South-East region owns 41.5% of this area.

The explication of this performance resides in the unique or difficult to imitate local resources: in the South-East region there is an extensive area cultivated with vineyards and a long wine-growing tradition, supported by the favorable climate and the sub-regions soils specific. The South-East region produces 43% of the Romanian wines, being the first place in the country in terms of the area of the vineyards, with 40.2% of the wine area of the country - mostly located in Vrancea County. In Vrancea county are cultivated about 25,000 ha with vineyard - of which “only about 3,000 hectares with harvest declaration. Vrancea is strongly divided, with about 10.000 owners in the area.

Table no 1. shows the production site per hectare for the period 2013 - 2017. It is noted that during this period there is an increase in production in the private sector and in individual agriculture holding. 2014 is an exception because we have a production decrease.

Table 1. Average production of grapes per hectare, by ownership

| Vineyards categories | Property forms | Macroregions, development regions and counties | Years | | | | |
|----------------------------------|--|--|--------|------|------|------|------|
| | | | 2013 | 2014 | 2015 | 2016 | 2017 |
| | | | Kg/ ha | | | | |
| | | | Kg | Kg | Kg | Kg | Kg |
| Totally – fruit vineyards | Total | Vrancea | 6609 | 5615 | 5926 | 5809 | 7044 |
| | Private sector | Vrancea | 6558 | 5621 | 5907 | 5794 | 7032 |
| | of which: Individual agricultural holdings | Vrancea | 6420 | 5547 | 5692 | 5498 | 7001 |
| Grafted vineyard | Total | Vrancea | 6763 | 5894 | 6231 | 6134 | 7075 |
| | Private sector | Vrancea | 6707 | 5904 | 6213 | 6120 | 7061 |
| | of which: Individual agricultural holdings | Vrancea | 6573 | 5854 | 6004 | 5823 | 7028 |

Source: Romania's Statistical Yearbook, 2013, 2014 [13]

Table 2 shows the occupied areas (Ha), the largest cultivated areas are with grafted vineyard, and the smallest ones are with table grapes where we have a decrease since 2013 to 2017. In wine grapes the largest cultivated area was in the year 2013.

Table 2. Vineyards on fruit – surface, on property forms

| Vineyards categories | Property forms | Macroregions development regions and counties | Years | | | | |
|---------------------------------------|--|---|-------|-------|-------|-------|-------|
| | | | 2013 | 2014 | 2015 | 2016 | 2017 |
| | | | Ha | | | | |
| | | | Ha | Ha | Ha | Ha | Ha |
| Totally – fruit vineyards | Total | Vrancea | 25351 | 23791 | 24267 | 24176 | 24355 |
| | Private sector | Vrancea | 25020 | 23459 | 24024 | 24072 | 24251 |
| | of which: Individual agricultural holdings | Vrancea | 21968 | 21188 | 21678 | 21713 | 22121 |
| Grafted vineyard | Total | Vrancea | 22515 | 20954 | 21429 | 21282 | 21512 |
| | Private sector | Vrancea | 22184 | 20622 | 21186 | 21205 | 21408 |
| | of which: Individual agricultural holdings | Vrancea | 19136 | 18356 | 18848 | 18883 | 19286 |
| Hybrids vineyards on the fruit | Total | Vrancea | 2836 | 2837 | 2838 | 2894 | 2843 |
| | Private sector | Vrancea | 2836 | 2837 | 2838 | 2867 | 2843 |
| | of which: Individual agricultural holdings | Vrancea | 2832 | 2832 | 2830 | 2830 | 2835 |
| Table grapes | Total | Vrancea | 4619 | 3889 | 3886 | 3872 | 3889 |
| | Private sector | Vrancea | 4617 | 3886 | 3884 | 3870 | 3887 |
| | of which: Individual agricultural holdings | Vrancea | 4543 | 3845 | 3836 | 3836 | 3838 |
| Wine grapes | | Vrancea | 20732 | 19902 | 20381 | 20304 | 20466 |
| | | Vrancea | 20403 | 19573 | 20140 | 20202 | 20364 |

Source: Romania's Statistical Yearbook, 2013 -2017 [13]

Table 3 shows the grape production obtained at ha on property forms, the largest wine grape productions were obtained in 2013 and in 2017. The weakest harvests were obtained in 2014 respectively.

Table 3. Total grape production, by ownership

| Vineyards categories | Property forms | Macroregions development regions and counties | Years | | | | |
|---------------------------------------|--|---|--------|--------|--------|--------|--------|
| | | | 2013 | 2014 | 2015 | 2016 | 2017 |
| | | | Tons | | | | |
| | | | Tons | Tons | Tons | Tons | Tons |
| Totally – fruit vineyards | Total | Vrancea | 167556 | 133592 | 143798 | 140436 | 171567 |
| | Private sector | Vrancea | 164084 | 131857 | 141899 | 139468 | 170529 |
| | of which: Individual agricultural holdings | Vrancea | 141028 | 117524 | 123384 | 119388 | 154868 |
| Grafted vineyard | Total | Vrancea | 152269 | 123496 | 133518 | 130542 | 152196 |
| | Private sector | Vrancea | 148797 | 121761 | 131619 | 129777 | 151158 |
| | of which: Individual agricultural holdings | Vrancea | 125774 | 107457 | 113156 | 109955 | 135542 |
| Hybrids vineyards on the fruit | Total | Vrancea | 15287 | 10096 | 10280 | 9894 | 19371 |
| | Private sector | Vrancea | 15287 | 10096 | 10280 | 9691 | 19371 |
| | of which: Individual agricultural holdings | Vrancea | 15254 | 10067 | 10228 | 9433 | 19326 |
| Table grapes | Total | Vrancea | 33067 | 23377 | 27524 | 25686 | 27347 |
| | Private sector | Vrancea | 33047 | 23354 | 27506 | 25666 | 27327 |
| | of which: Individual agricultural holdings | Vrancea | 32400 | 23130 | 27150 | 25350 | 26962 |
| Wine grapes | Total | Vrancea | 134489 | 110215 | 116274 | 114750 | 144220 |
| | Private sector | Vrancea | 131037 | 108503 | 114393 | 113802 | 143202 |
| | of which: Individual agricultural holdings | Vrancea | 108628 | 94394 | 96234 | 94038 | 127906 |

Source: Romania's Statistical Yearbook, 2013 -2017 [13]

2.1. Study area

The geographical location of the Vrancea County is defined by the intersection of the parallel-45° North latitude and the meridian - 26° East longitude, which gives it an external position to the Carpathian Curve, in the South-East of Romania. In relation to the neighbouring administrative units of the same rank, Vrancea is bordered by Bacau County to the North, Vaslui to the North-East, Galați to the East, Brăila to the South-East, Buzău to the South and Covasna to the West. The major relief units that define the position of Vrancea County are the Vrancea Mountains, which occupy the western third, the sub-Carpathian sector between and Zăbrauți and Râmnicu Sărat in the central area and the central part with the Siret Plain, which covers the eastern third. Within these limits the county totals 4857.03 km².

The climatic characteristics of Vrancea County are those specific to the situation at northern latitude of 46° and in the continental area. These two elements determine the temperate transition continental climate, with specific characters determined by the altitudinal floor (from the level of the plain, up to over 1700 m). And with local influences that impose topo climate of depression type. The layout of the relief in steps, which descend to the east, opens wide space, first of all, to the east-continental influences but at the same time to the influences of northern and southern climate. At the same time, the Carpathians Curvature has the function of a natural discharge for the western air masses.

To create hypsometric map, soil map, relief unit's map and CLC map using the software ArcGIS 10.5 was used digital elevation model (DEM) with a resolution of 30 m, Corine Land Cover 2000, Soil Map of Romania at 1: 200000 scale.

The DEM was downloaded free from ([www://geo-spatial.org](http://www.geo-spatial.org)) and all the used vectors were downloaded free from (<http://www.opengis.org>). The use of land map was obtained from CORINE Land Cover. [10] [12]

The CORINE Land Cover is a vector map with a scale of 1:100 000, a minimum cartographic unit (MCU) of 25 ha and a geometric accuracy better than 100m. It maps homogeneous landscape patterns, i.e. more than 75% of the pattern has the characteristics of a given class from the nomenclature. This nomenclature is a 3-level hierarchical classification system and has 44 classes. In order to deal with areas smaller than 25ha a set of generalisation rules were defined. [4]

The Hypsometric map was the first created map (Figure 1). The role of hypsometric map is to show how altitude varies within the studied area. Vrancea County is divided into 6 altitudinal classes. The altitude varies between 4 – 1.774 m. [7]

The largest area is occupied by the plain area between 4 – 364 m (green color) in the East. In the western part are the sub-Carpathian hills area (365 – 843 m) followed by the mountains (brown and white colour).

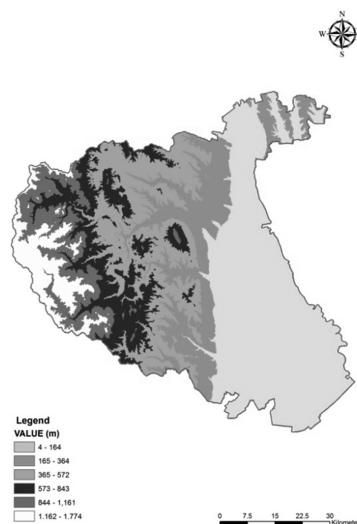


Figure 1. The hypsometric map of study area

Vrancea County has a high natural potential. Regarding, the soil, the renewable resource, from the East to the West, we notice the following zone characteristics:

- the plain area;
- the sub-Carpathian hills area;
- the mountain area.

The lower Siret Plain and the Ramnic Plain are characterized by alluvial soils in the meadows and lowlands. Chernozems are characteristic on the interfluves and the gray soils are in the contact area of the plain with the sub-Carpathian hills.

In the area of the sub-Carpathian hills there are brown podzolate, podzolic, clay-alluvial and brown soils that offer favourable conditions for the pastures, meadows and forest vegetation development. In this area, agricultural crops find less favorable conditions. It is the relief step of the surfaces occupied by orchards and vineyard plantation.

The mountain area is characterized by acid brown soils and podzolic brown soils which have led to the forest steps vegetation development consisting of mixing forests (deciduous forests) at altitudes below 900 m and at altitudes between 900 and 1600 m, also. At higher altitudes are developed spruce forests, alpine meadows, blueberries, alder and juniper.

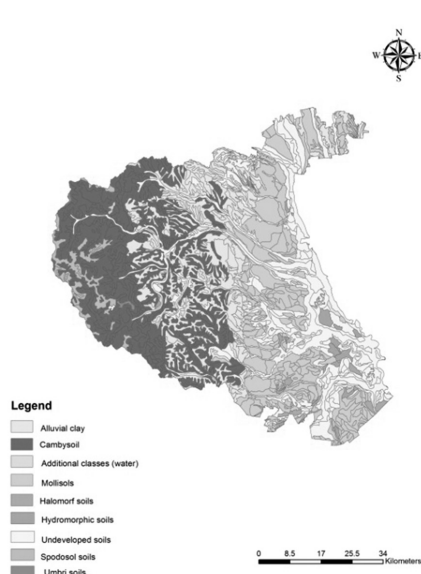


Figure 2. The soil map of study area

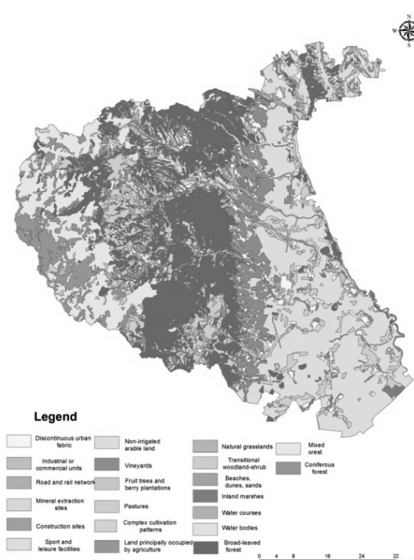


Figure 3. The land use map of study area

The Corine Land Cover map provides information on how the lands in the study area are used. The analysis of the map shows that the area with the greatest viticulture potential is in the sub-Carpathian hills. This area is delimited in the northern part of the forests and in the south of the fruit trees and berry plantation. (Figure 3) [1]

The relief map shows how the relief units are distributed in Vrancea County. The plain units are located in the eastern areas; the western part is the area of the sub-Carpathian hills. Here are located most vineyards plantation in the Vrancea County. (Figure 4)

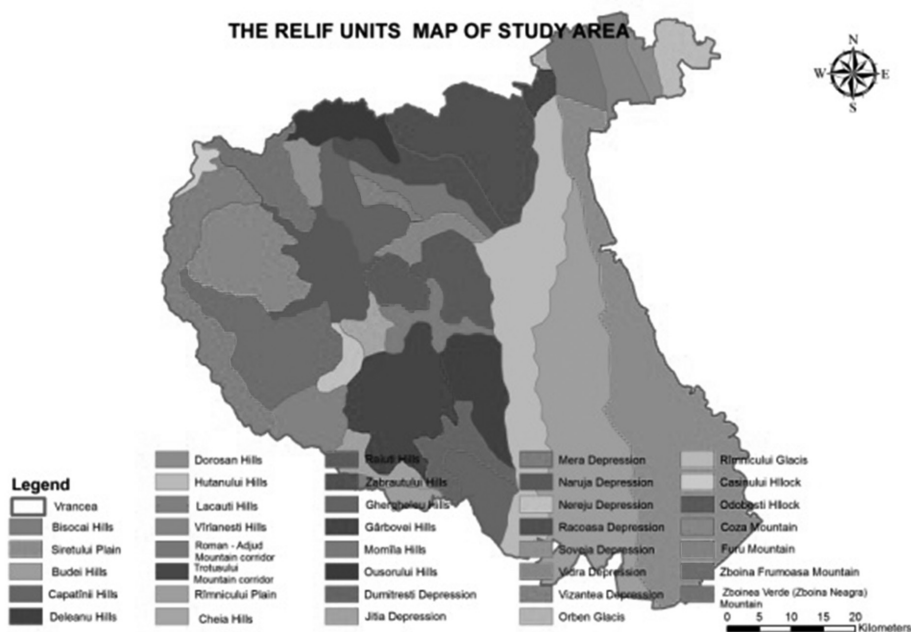


Figure 4. The relief units map of study area

3. CONCLUSION

Productivity is a fundamental characteristic of any agricultural plant; it is appreciated after the economic weight of the main product made at the surface unit. In the case of vineyards, the main economic product consists of grapes. [2]

Grape production is actually the result of a heterogeneous complex of interactions between varieties, biotope conditions and the technology used. It is ultimately conditioned by all the factors that influence in some way the potential and actual fertility as well as the growth processes. The better the biotope conditions are in harmony with the biological requirements of the variety, the higher-level production.

Each variety is characterized in terms of production by a certain biological potential. Some more vigorous varieties, in general, ensure large grape production (15 - 22t/ha and even more) (Galbena de Odobesti, Zghihara de Husi, Berbecel, Black Babeasca among the varieties of wine, Afuz Ali, Italy, Cardinal among those for the table). Other varieties such as: Grasă de Cotnari, Pinot, Tamaioasa romanesca, Cabernet Sauvignon, show other biological and productive properties and give smaller grape productions (5 - 10t/ha), but with higher quality performances.

REFERENCES

- [1] Bajocco S., De Angelis A., Perini L., Ferrara A., (2012) The impact of Land use/Land Cover Changes on Land Degradation Dynamics. A Mediterranean case Study, Environmental Management, May 2012, Issue 5, pp 980 -989
- [2] Creasy, G. L., Creasy L. L., (2009). Crop Production Science in Horticulture, Volume 16: Grapes. Wallingford, Oxon, GBR: CABI Publishing, p 117.
- [3] Dumitriu I. C., (2008) Viticultura, Editura Ceres, București
- [4] Kasereka K., Yansheng G., Mbue I.N., Samake M., (2010) Remote sensing and geographic information system for interfering land cover and land use change in Wuhan (China), 1987-2006 Journal of Sustainable Development, Vol 3, No. 2, pp 221 -229
- [5] Leonowicz A.M., Jenny B., Humi L., - (2009) Automatic generation of hypsometric layers for small scale maps, Computers and Geosciences 35 (10), October 2009, pp 2074 -2083
- [6] Neamțu, I., (1994), Viticultura practică, Ed. Ceres, București
- [7] Patton J.C., Crawford P.V., (2013) The perception of hypsometric colours – The cartographic Journal, volume 14, pp 115 -127
- [8] Robinson, J. (1986). *Vines, grapes & wines*, Oxford University Press
- [9] Smart, R.E., Robinson M.D., (1991), *Sunlight into Wine: A Handbook for Wine-Grape Canopy Management*, Wine Titles, Hyde Park Press, Adelaide, Australia
- [10] [www://geo-spatial.org](http://www.geo-spatial.org)
- [11] <https://land.copernicus.eu/pan-european/corine-land-cover/clc-2000>.
- [12] <http://www.opengis.org>
- [13] <http://www.insse.ro/cms/>

NATURAL PROTECTED AREAS FROM ROMANIA. A CASE STUDY OF DANUBE DELTA

Camelia Slave¹

DOI:

Abstract: *The Danube Delta is recognition as natural international capital in Romania. In 1991 it was designated as Ramsar site and World Natural Heritage Site for a surface of 50% of its area. Also, in 1992 it is recognized as a Biosphere Reserve. The Danube Delta is a large protected area at international level, but at national level certain areas of the Danube Delta are only natural reserves. The Danube Delta is recognized as a Natural Biosphere Reserve by Government Decision 248/1994. In 1994, a GEF (Global Environment Facility) project was set and Park Administration implements the management plan. The Danube Delta has so far been the only protected area with its own administration. At national level, will be provided support for the establishment and strengthening of the necessary institutional framework, for the adoption of the laws on protected areas and strengthening legislative framework. Also, for preparation human resource which is a public participation component of popularization the idea of nature conservation and protected areas. The purpose of this article consisted of choosing Danube Delta area where the possible floods occur due to different weather phenomenon. To do this using ArcMap 10.5 programs were conducted a simulation map of flooding in the area under study.*

Keywords: *Convention, Danube Delta, Habitat, Protected Area, Maps.*

1. INTRODUCTION

The first modern, world-wide intergovernmental treaty on the conservation and sustainable use of natural resources is the „International Convention of Importance Wetlands Particularly as a Water bird’s Habitat” signed on February 2, 1971 in the Iranian city of Ramsar, on the coast sea Caspian.

The Convention on Wetlands of International Importance, in particular as a habitat for aquatic birds, signed at Ramsar, Iran, in 1971, established February 2 as World Wetlands Day. Romania is a contracting party to the „RAMSAR” Convention as of September 21, 1991 (through the adoption of Law no. 5 of January 25, 1991). The declared objective of the Convention was to conserve the wetlands, fauna and flora that serve as aquatic bird habitat and which constitute the most important resources of economic, natural, scientific and recreational value. The choice of these areas, according to the Convention, is based on the international role from ecological, botanical, zoological, limnological, hydrological, taking into account their importance for aquatic birds in all seasons. First of all, The Convention establishes for the States Parties, the requirement to develop and implement the management plans, so as to favour the conservation of these areas by creating reservations and rational use of their reserves.

The wetland as a Ramsar site represents a recognition of the importance and proper management of areas worldwide. [11]

¹ University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Mărăști Blvd, Bucharest, Romania

The concept of Wetlands includes a wide variety of ecosystems that have the following common aspect: the presence of both land and water for most of the year. According to the definition given by RAMSAR, the wetlands are extremely diverse. The Convention defines wetlands as stretches of ponds, marshes, natural or artificial waters, permanent or temporary, where the water is standing or flowing, sweet or salty, including stretches of seawater whose depth at ebb does not exceed six meters. Regardless of the types of wetlands, they are characterized by the fact that they share a fundamental feature, namely: the complex interaction of their basic components - soil, water, animals and plants, elements that, in conjunction, perform numerous functions and provide multiple products that have supported people over time.

In the broad sense, nature protection has as its main objective the unaltered preservation of the natural ecosystems (eco - background) and the genetic background at global and regional level, in order to ensure the balance between the natural components of the environment, and between them and the human society.

In the present conditions, when in the extended territories the pressures exerted by the different ways of using the lands on the natural patrimony of the planet have reached critical values, the protection and the conservation of the nature occupy a priority place in the field of the concerns of the specialists in the field. [7].

Anthropic pressure had the greatest impact on the flora and fauna biodiversity, the plants and animals being the most vulnerable natural elements of the environment, in relation to human activities; their existence is inextricably linked to the quality of the other components of the landscape. Between 2013-2015, Romania held the Presidency of the Standing Committee of the RAMSAR Convention. For the period 2015 - 2018 Romania was a member of the Ramsar Standing Committee. This year (2019) World Wetlands Day was celebrated on February 2.

From a historical point of view, the Danube is mentioned in documents from the Greek and Romanian eras. If the Greeks called the Danube – Danubius - the Romans used the name Danubius for the upper course and Istros for the lower. Herodot, who between 454-447 BC. has visited the shores of the Black Sea reaching the river Nistru, describes Istros as being the largest of the rivers seen so far, and mentions that the river flows into the sea through five arms. Ptolemeu, in the Antonin Itinerary, gives the coordinates of all the points described by him at the mouths of the Danube River. Polybius (201–120 BC), Strabo (58 BC - 25 AD), Ovidius (43 BC - 17 AD), Plinius the Elder (23–79 AD; *Naturalis Historia*), and Flavius Arrianus (~ 95–175 AD; *Periplus Ponti Euxini*) in their writings bring information about the Danube Delta, from which the following can be synthesized: formation of the delta already started, the Danube flowed into the sea through a greater number of arms than today, the delta front was located much to the west of the current position, in front of the mouths of the river were six islands, the largest being known as Peuce (Pomponius Mela, 1st century AD).

The Danube Delta is the most representative delta in Europe and one of the most complexes in the world and is the best-preserved delta in Europe. It is also considered to be the third area of ecological importance in the world. This represents a major attraction by the presence within it of a variety of vegetation and fauna - fish and ornithological. Here there is the richest and most varied ornithological fauna in Europe, namely over 300 species of birds, some of them declared nature monuments and are protected by law.

In 1991 it was included in the UNESCO World Heritage List as a biosphere reserve.

2. GENERAL PRESENTATION

The „Danube Delta” Biosphere Reserve has a total area of 580,000 hectares and includes morphologically and genetically units distinct physical and geographical, by point of view: the Danube Delta itself, the Razim-Sinoie lake complex, the maritime Danube up to the Cotul Pisicii, the Isaccea-Tulcea sector with the flood zone, the Sărături Murighiol lake and the Black Sea coast from the Chilia arm to Cape Midia, including the territorial sea up to the 20 m isobath.

The position of the reservation is defined by the following geographical coordinates: 28°10'50" (Cotul Pisicii) and 29°42'45" (Sulina) East longitude; 45°27' (Chilia arm, at km 43) and 44°20'40' (Cape Midia) North latitude. Of the total area of the reserve, more than half (312,440 ha) is represented by the aquatic and terrestrial natural ecosystems included in the list of areas with universal heritage value (the Convention of Universal Natural Heritage) as well as those destined for ecological reconstruction, areas that constitute the public domain of national interest. The rest of the areas include embanked for fish farming, agriculture area and forestry (about 80,000 hectares). These areas are provided in Law 18/1991, including private land or public property of local interest within the localities or territories of the communes (about 29,000 hectares) as well as a marine buffer zone of about 103,000 hectares.

The Danube Delta climate is temperate continental with Pontic influences, some areas have semi-arid climate. Precipitations are low, around 360 mm/year, and cloudiness is the lowest in Romania. The multiannual temperature average is 11 degrees Celsius. Summers are warm with minimal rainfall; winters are relatively mild with minimal snow cover which is kept only in harsh winters for short periods.

In Patlageanca, the Danube has a flow of 6400m³/s (on average), and is divided into two arms, in North Chilia and in South Tulcea. The Tulcea arm near the Cetatea Ismail is divided into two arms: Sulina and Sf. Gheorghe.

- The Chilia arm transports 60% of the Danube's waters and alluvium. Along the arm are located settlements, Periprava and Chilia Veche.
- Sulina branch is located in the middle of the Delta, has 71 km length and transports 18% of the Danube water volume.
- Sf. Gheorghe arm carries 22% of the flow. At discharge point, the Sacalin Islands are considered to be a beginning of the secondary delta

The territory of the Delta is par excellence a land of waters. The dozens of lakes, canals, streams and marshes that are part of it are the main elements of the Danube Delta biosphere's hydro-graphic system, of course along with the main arms of the Danube.

The most important lakes are: Roșu, Puiu, Puiuleț, Lumina, Tătaru, Merhei, Matîța, Fortuna, Gorgova, Trei Ozere, Erenciuc. Channels are the main circulation system in the Danube Delta. The canals provide from the lakes fresh water and water transport support. The largest channels are: Dunavăț, Cordon Litoral, Litcov, Dranov, Caraorman, Crasnico. And the most important streams are: Păpădia, Litcov, Lopatna, Șontea.

3. FORMATION OF THE DANUBE DELTA

The Danube Delta was formed in an old Black Sea bay, Tulcea Bay. It has been filled with alluvium since the Quaternary period. The filling was done in several phases, being favoured by the low tide of the Black Sea.

The first phase consisted of the formation of a coastal cordon that partially is blocked by the Tulcea Bay.

In the second phase, the bay is completely closed and becomes a lagoon. In the next phase, the third, lagoon is filled with alluvium and in the newly formed marsh area the Sfântu Gheorghe arm - the oldest arm of the Danube - is formed. Also, in this phase the Babadag bay is closed, forming the lagoon complex Razim Sinoe.

In the fourth phase, the initial coastal cordon is pierced on the alignment of the present Crişan locality by a new arm of the Danube - Sulina, which is rapidly advancing towards the sea due to the large amount of alluvium.

In the fifth phase, the coastline is crossed again this time by the Chilia arm, near the future locality Periprava. Currently this arm carries the largest amount of water and alluvium, contributing to the formation of new territories of the Danube Delta.

The Danube Delta is a relief unit of Romania located in the East, being the newest of the country, a plain in the training stage. The flooding process is carried out by the Danube, which spills significant amounts of alluvium every year, in the Black Sea, thus contributing to the growth of the Delta. [3]

From a geomorphologic point of view, the Danube Delta is an alluvial plain in formation, where the marshy areas are covered by reef and abundant vegetation and a large number of lakes and canals. The Danube Delta looks like a large equilateral triangle with sides of about 75-80 km. The average altitude is 0.52 m, most of the territory is below one meter and 20% of the Danube Delta is below sea level.

The dunes and the shales are the largest formations in the delta, and they are also the highest areas of this water's paradise (Letea Grind - 12.4 m, Caraorman Grind - 7 m). The most important dunes in the Danube Delta are: river dunes (Chilia, Caraorman, Pardina, Stipoc), river-maritime dunes (Letea, Sărăturile, Crasnicol) and smaller dunes Zăton Buhaz, Crucea, Creţu, C.A. Rosetti.

The most important types of soils encountered in the territory of the Danube Delta are: alluvial soils, limnosoils, psamosoil and white soils. [8]

The territory of the Danube Delta can be divided into two geographical sub-regions: the Danube Delta itself (located between the arms of the river) and the Razim Sinoe lagoon complex, located south of the Sfântu Gheorghe arm. Delimitation is practiced, also between the river delta and the maritime delta. [3]

4. MATERIAL AND METHODES

The digital elevation model (DEM) was used for hypsometric map that can be found free of charge on CGIAR-CSI geo-portal in WGS84 geographical projection [CIAT, site accessed in Sept, 2019]. [10].

A Digital Elevation Model (DEM) is a grid or a raster of square cells whose cell value is the land surface elevation in the centre of cell. The DEM has a spatial resolution of 30 m. Digital Elevation Model (DEM) is the digital representation of the land surface elevation with respect to any reference datum. DEM is frequently used to refer to any digital representation of a topographic surface. DEM is the simplest form of digital representation of topography. DEMs are used to determine terrain attributes such as elevation at any point, slope and aspect. Today, GIS applications depend mainly on DEMs. [9]

The program used to create maps for this study case is ArcGIS 10.5. It has WGS84 projection and was transformed in Stereographic 1970 projection. (Figure 1).

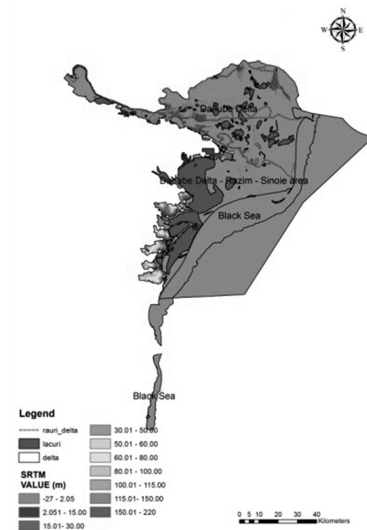


Figure 1. The map of the study area – Danube Delta

The map of the study is a hypsometric map and has 10 altitudinal classes. The altitudinal values are between: - 27.00 – 200.00 m

The studied area includes positive and negative relief forms:

- The deltaic area is represented by the positive relief representing 13% of the delta surface and is formed by dunes;
- The negative relief (0 m level) is represented by the depressions in which the waters of the Danube were installed, through the main and secondary arms, streams, marshes;

In the southern part, the Danube Delta continues with a large lagoon - Razim - Sinoie, formed by blocking an old bay with a sand ridge;

On the edge of the Razim - Sinoie lagoon is a narrow coastal plain called the Razim - Sinoie lagoon coastal plain. [2] [3]

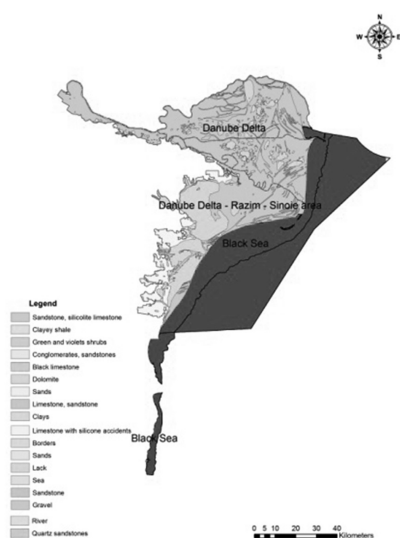


Figure 2. The geological map of the study area

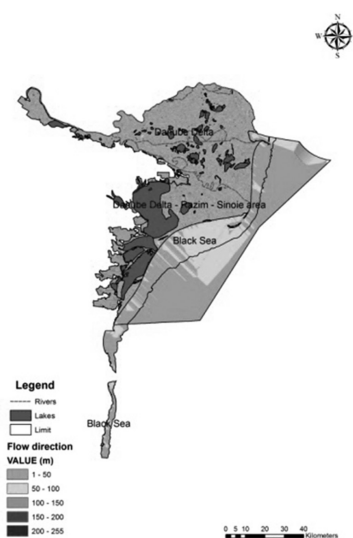


Figure 3 The flow direction of the study area

The geological structure of the Danube Delta is made up of a crystalline foundation over which a sedimentary cover is represented transgressive by a succession of Paleozoic, Triassic, Jurassic, Cretaceous, Neogene and Quaternary deposits, determined by deep and small drilling in the area. (Figure 2) [2] [4] [5] [6]

Flow accumulation was performed using Flow Accumulation tool in ArcMap. (Figure 3) GIS functions as spatial analysis is capable to produce new information based on analysis of data stored in the system. [1]

GIS is a tool for planners to analyze the planning region. Results of the determination of flood-prone areas are expected to be a consideration for decision makers so as not to focus settlement construction in areas prone to flooding. In addition, the need for flood mitigation efforts in this area such as the construction of dikes, dredging to increase the capacity of the river as well as perform other businesses from upstream to downstream to prevent flooding.

5. CONCLUSION

The vision for the Danube Delta region (2030) is: „An attractive area - with valuable biodiversity and dynamic business environment, with low/medium economic level in both traditional and modern fields - where people live in harmony with nature, integrating economic activities in the tourism, agriculture and fisheries sectors, with adequate support provided by urban service centres.”

The economic, social and ecological price paid for disturbing the functions of the wetlands is enormous. This resulted in numerous expenditures to restore the lost and degraded hydrological and biological functions of the wetlands.

Plants and soils in wetlands play an important role in water purification, removing high levels of nitrogen and phosphorus, and in some cases even toxic chemicals. This role is important in preventing eutrophication, a process that leads to rapid growth of algal mass, which means that the surface of the water is completely covered by plants. Thus, in the water mass, light and

therefore photosynthesis are greatly reduced, which is why there is not enough oxygen, although the demand is increasing through the multiplication of organisms.

Wetlands often play a crucial role in flood prevention. By storing water in the soil or by retaining it on the surface of lakes or marshes, wetlands reduce the need for expensive construction. Wetlands contribute to the recharge of underground aquifers.

Wetlands acts as purifying drinking water systems; it protects the lands from floods and are considered the most productive ecosystems in the world. Their structure and functions are determined by the hydrology of the area. This category of ecosystems is about ten times more productive than ordinary ecosystems. Because, in addition to the solar energy contribution, they receive an additional energy represented by the entrances of the areas with which they are in permanent contact, water and land. Thus, the circulation of water is crucial for ensuring their productivity. Organic matter excess (biomass) can be stored or exported to neighbouring ecosystems.

Wet areas tend to slow down the force of water, encouraging the storage of sediments that will reach the water. Nutrients are often associated with sediments and can be stored at the same time. These nutrients, especially nitrogen and phosphorus from agricultural sources, but also from industrial discharges, can accumulate in the basement and can be transformed by chemical and biological processes or taken by the wetland vegetation, and can then be effectively removed from system.

REFERENCES

- [1] Bukari S.M., Ahmad M. A., Wai T.L., Kaamin M., Alimin N., (2015) Spatial Analysis in determination of flood prone areas using geographic information system and analytical hierarchy process at process at Sungai Sembrongs catchment, - Soft Soil Engineering International Conference,
- [2] Coteș P., (1973) Geomorfologia României, Editura Tehnică, București,
- [3] Gâțescu P., Știucă R., (2008) Delta Dunării – Rezervație a biosferei, Editura Dobrogea Constanța,
- [4] Giosan L., Donnelly J.P., Constantinescu S., Filip F., Ovejanu I., Vespremeanu-Stroe A., Vespremeanu E., Duller G.A.T. (2006). Young Danube delta documents stable Black Sea level since the middle Holocene: morphodynamic, paleogeographic, and archaeological implications. *Geology*, 34(9): 757-760,
- [5] Ionesi L., (1994) Geologia unităților de platformă și a orogenului Nord-Dobrogean, Editura Tehnică, București,
- [6] Mutihac V., (1990) Structura geologică a teritoriului României, Editura Tehnică, București,
- [7] Romanescu G., (1995) Delta Dunării – privire geografică, Editura Glasul Bucovinei, Iași,
- [8] Rusu I., Niță L., (2004), Pedologie – Solurile României, Editura Eurobit, Timișoara,
- [9] https://www.researchgate.net/publication/319454004_DIGITAL_ELEVATION_MODEL_DEM_IN_GIS,
- [10] CIAT, site accessed in Sept, 2019
- [11] https://www.researchgate.net/publication/228148278_The_Ramsar_Convention_on_Wetlands_Assessment_of_International_Designations_within_the_United_States

INNOVATION AND AGGREGATION: A GOVERNANCE MODEL TO SUSTAIN COMPETITIVENESS OF WINE COMPANY IN SOUTH ITALY*

Nicolaia Iaffaldano¹ 

Andrea Sestino² 

DOI:

Abstract: *The paper aims to analyze the relationship between property and business in wine cooperatives, defining its contribution to the firm's development and competitiveness based on a customer-centered perspective.*

On-desk analysis of theoretical and literature contributions on the studies about relations between businesses, with particular attention to the Viable System Approach. On-field analysis with the methodology of case studies, in order to verify the analysis proposed model depth.

The study has enabled to carry out: 1) identify operational measures which could sustain wine companies' competitiveness also taking advantages from the territory; 2) define an analysis model concerning supply relationships useful in order to observe the automated development potential, production and commercial relationship.

Keywords: *Aggregation and Innovation, Customer Relationships, Competitiveness.*

1. INTRODUCTION

Nowadays, complexity in competitive systems requires companies operating in wine sector to face changes in management practices in order to be oriented towards a dominant principle, specifically about customers' relationships. Thus, companies must increasingly act according to a *customer-centered* logic or operate in order to activate relational mechanisms with their customer aimed to interact following contributing to develop companies' ability to adapt and stimulate trust in consumers (Costabile, 2001; Kotler et al., 2012; Siano et al., 2004; Gummesson, 2005).

The implementation of these mechanisms requires to define an operating structure and several business processes able to activate a path aimed to adopt relational mechanisms with customers useful for monitoring their behavior and activating product adaptation paths in order to make it constantly in line with market expectations as well; additionally, companies should be able to activate paths aimed to defining supply chain control and coordination mechanisms in order to guarantee and sustain aforementioned activities.

Furthermore, it might be interesting highlight that in the case of the wine industry, the implementation of the proposed strategy requires to consider also the competitiveness of the wine companies always related not more just only referring to the product made, but is also consider-

* Although the paper is a shared work, paragraphs 1, 2, 4 are to be attributed to Nicolaia Iaffaldano, to Andrea Sestino and Nicolaia Iaffaldano the paragraph 3.

¹ University of Bari, Ionian Department of Law, Economics and Environment, Via Lago Maggiore ang. Via Ancona, 74121, Taranto, Italy

² University of Bari, Ionian Department of Law, Economics and Environment, Via Lago Maggiore ang. Via Ancona, 74121, Taranto, Italy

ing a complex set of elements binding products to the wide range of components in the considered territory in which it is made.

Thus, the paper is aimed to propose considerations about the role of relationship between the property, that in the cooperative model analyzed is represented by the farmers primary suppliers of raw material, and the wine company with the final scope to understand its potential contribution to development and competitiveness in considered company. Particularly, these relationships will be observed using a model in which the level of coordination and control of operational activities is considered, defining the characteristics of each relational typology analyzed founded according to pursuit of competitiveness.

The proposed framework assumes that competitiveness and therefore the relationship with the consumers are strongly influenced by the ability of the entrepreneurial reality to adapt its product and so the processes realized, at the changing needs of the final consumer.

Considering these scopes, the paper aims to define a typical behavioral pattern in terms of activities and processes to be activated by the adoption of a Viable System Approach (VSA) perspective (Golinelli, 2000; 2002; 2008) fundamental in order to pursuit competitiveness of wine companies. Furthermore, the research aims to identify characteristics usually support relationships - in the considered case generated due to the relationships between the property, i.e. farmers, and the grape manipulating company - who must be possessed in order to allow companies developing of competitiveness wineries in the current competitive context; experience of a successful reality in the panorama of Apulian wine production cooperatives will be considered and in which technologies able to automatize production processes and relations with the final customer have been implemented.

Therefore, current competitive context requires adaptability who can't be separate from the activation of relational mechanisms based on sharing common growth paths or from adoption of innovative technologies able to simplify the supply chain (Grando et al., 2010; Signori, 2004; Borghesi, 2001; Santovito, 2005; Maizza, 2001; Massaroni, 2002) because aimed to maximize performance and competitiveness.

2. TERRITORIAL AND WINE COMPANIES' RELATIONSHIP IN A VIABLE SYSTEM APPROACH

Wine companies who choose to operate according optimization value to be transferred on the final consumers requires a development of organizational structures that cannot be separated without considering its systemic nature and the synergistic relationships activated with the sub-systems make up the wine production supply chain and supersystems represented by distribution and consumption.

Considering a relational perspective, the systemic nature of viticulturally industries is based on the research of consonance (Golinelli, 2000, 122-124) activated with its sub-systems referred to macro-areas of their own supply chain and identifiable in the system of agricultural production, in the wine-production system, in the bottling and packaging system.

Literature and particularly specific studies (Mastroberardino, 2002, 37 and follow.) investigating the systemic characteristic of the wine business, fundamental for this work revealing the

produced effect considering the relationships between the aforementioned systems. The relevance of these relationships is more evident when these sub-systems provide the wine system with resources for its functioning is considered; break them down during the analysis might mean follow a reductionist approach with a related partial analysis in which a holistic approach can be framed in its optimal context.

For nature, wine companies also interact with a high-level of systemic entities that reveal expectations and survival influence considering they possess resources essential for its functioning. These entities are several different according literatures (Golinelli, 2000, 191; Barile et al., 2003; Calabrese & Vesci, 2003) considering their relevance might be distinguished direct systems from the indirect.

In the first group might be considered the system of distribution, communication, consumers and institutions responsible for controlling compliance with the rules, which have important resources for the functioning of the system (Mastroberardino, 2002, 284 and follow.; Santovito, 2005). In the second group (definable as over-indirect systems) the tourism system, the system of culture and traditions, the landscape-environmental system might be considered. These entities affect the system on a mediated basis because when properly coordinated might able to facilitate the process of recognition/purchase of the product (wine) according virtue about pre-existing knowledge of the related origin territory or due to appropriate communication strategies also able to represent the considered territory (Orth et al., 2005; Busacca et al., 2006).

Thus should not forget that in the current competitive context the wine, as all typical products, possesses for nature, or might be influenced through marketing strategies, territorial connotations related to specific attributes: the intrinsic value related to origin territory in which is made (Van Leeuwen & Seguin, 2006), propensity to quality as the sharing of cultivation and production techniques, integration of the supply chain and physical, anthropic and cultural dimension considering territory (Fait, 2008; Baccarani & Golinelli, 2001; Rullani, 1999).

Preliminarily is useful identify the possible training paths of a systemic model that might move from the bottom (following a bottom-up approach) or from the actions of institutional over-systems (following a top-down approach). Depending on the systemic approach adopted the optimal genesis will be conditioned by the ability to correctly interpret the vocation, to design and communicate a unique identity compatible with this vocation considered (Fait, 2010).

Most competitive and advantaged system according a perspective of knowledge economy are those that beginning from a low level might able to spread the know-how in order to generate high value products oriented to the consumers' needs. Therefore, the wine business system must realize synergies derived from the availability of use in resources and from coordination of univocal actions coherently to a customer-centered logic.

As sub-systems we refer to wine companies or their aggregations: in some geographical areas they do not possess compulsory requisites able to provide a suitable stimulus to the system in the process of completing due to lack of knowledge, financial and, often frequently, reduced size. In this perspective and by observing the reality emerges how in a specific geographical area characterized by wine production, subjects considered for our purpose might be Consortiums of Quality protection such as Doc/Docg and obviously local institutions aimed to the enhancement of the territory such as Provinces, Boards of Trade.

Assuming as fundamental the relevance of the synergistic relationships that wine companies activates with the related sub-systems and the supra-systems on the territory in which operates, a possible operation model is traced considering mechanisms deputed to make it possible:

- the creation of production prerequisites that might evolve and innovate considering consumer's needs; this involves the adoption of product management processes that might control its evolution considering consumers' behavior and needs;
- the control and the coordination of the supply chain functional to the adaptation of the final product to the consumers' needs;
- the correct perception of the wine-territory relationship which when appropriately communicated might become a driving force that consumers can recognize and an identification brand based on the sustained synergy.

Construction of an activity plan for companies might not ignore considerations towards the governance model adopted especially in sectors such as the wine industry in which there are widespread approaches inspired to act diffusely according specific trajectories reflecting property's willingness. Considering assumptions, the presented model is developed as a cooperative model in which suppliers are the owners of the rights of ownership in the same company, it's compulsory establish common rules aimed to carry out activities specifically referred to those functional to the realization of the final product.

The adoption of common paths allows the pursuit univocal goals otherwise unreachable. In extremely fragmented production structures (such as those present in Italy) the activation of functional production mechanisms aimed to satisfy demand market cannot be separated from the adoption of shared protocols on the cultivation, collection and supply of raw materials.

3. CASE STUDY: EXPERIENCE IN CANTINE DI SAN MARZANO

In order to pursue the aim of research it is necessary identify characteristics that the supply relationships generate and particularly in this case study due to the relationship occurred between the property and the company we provide not only a theoretical framework but analysis about a successful case study in the Apulian landscape as well.

Particularly from the proposed operating approach perspective a primarily attempt will be made to understand if the operating mechanisms connected both to product management and to the control and coordination of the supply chain allow automatic adaptation to customer needs. The behavioral model has been observed with particular consideration of a specific entrepreneurial experience that today have to create mechanisms in order to activate relationships with its consumers through identifying their needs and finally contributing to increase trust relationships with them.

Cantine di San Marzano di San Giuseppe is located in the province of Taranto, representing a combination of productive and commercial skills: born in 1962 is clearly achieving several advantages in terms of competitiveness. Its combination is based on a shared Production Philosophy on the enhancement of native vineyards and on the control of wine quality whole the process from the vineyard to the bottle.

The experience of Cantina di San Marzano comes from the contribution of the 1200 members who in 2019 contributed by conferring about 190 thousand quintals of grapes reaching a

production of about 130-150 thousand hectoliters of wine. The success of the winery is to be attributed to its expertise in managing a fragmented portfolio of producers: on a total area of approximately 1,800 hectares the management of land is directly carried out by the winery regard an extension of approximately 120 hectares and about 55 hectares of vineyards of Primitivo, Negroamaro and aromatic white Malvasia.

Therefore, we tried to observe and appreciate the matter of relationships made with grape producers in order to incorporate them in a context following a coordination model useful for observation and analysis. The proposed model considers two determined variables in the identification and definition of the relationships: the *grade of management uniformity* and the *grade of information interaction* (figure 1), as items useful in order to observe the levels of coordination and control in the supply network.

The first variable defines the level of management uniformity of the activities carried out for each participant, focusing the attention on the type of raw material to be made, the techniques of cultivation of the vine, the definition of the treatments and the periods of intervention, the definition of the quality standards, the standards to be complied with for collection and conferment. The second variable related to the grade of participation in the process which influences the shared decisions concerning aforementioned activities and the process of sharing information concerning the state of the sector/industry and the related markets.

The proposed matrix summarizes our suggestions. Particularly the adoption of a long-term approach requires an activation of systemic relational mechanisms in which there are decisions taken according the participants decisions sharing following a bottom-up approach guided by the transforming company also able to manage a two-way information flow with contents ranging from productive variables to consumers requests and consumption choices.

Other types of relationships define cases that might be defined as rigid, when management uniformity is to be attributed to a power assumed by the non-shared guide company and that does not allow to optimize the potentialities of the participants; furthermore, unfinished relationships might be expressed when the production purposes are not shared and pursued while being compatible in sharing information.

Figure 1. Coordination and control in supply chain relationships

| | | | |
|-----------------------------------|------|-------------------------------------|----------------------|
| Uniformity Activities Grade | High | Systemic relationships | Rigid relationships |
| | Low | Incomplete relationships | Market relationships |
| | | High | Low |
| | | Information Interaction Grade | |

Source: our elaboration from Fait & Iazzi, 2012, 13

Market relations (fig.1.) are those in which the company who need for raw materials turns to the market indiscriminately versus anyone who does not have the possibility of long-term planning.

The experience of Cantine San Marzano highlights an unfinished path according the definition of systemic relations in the matrix, but in achievement phase following an empirical analysis. Relations with producers are characterized by a certain managerial autonomy which is mitigated by checks carried out by the winery on the territory and by scheduling of the conferment periods during which raw material is checked. The controls during the ripening phase are frequent. The management of the treatments and crops is defined by producer together with the agronomist of the company using “spy plants” equipped with technological sensors that continuously detect and send data to a central station that stores and processes return information and additional data allowing to pursue achieved results. Additionally, intense information exchange about the management of the crops and the choice of the type of vineyard might be considered.

The direct commitment of the company in the cultivation is carried out on a reduced area that allows the application of principles and practices not adoptable in hypothesis of cultivations carried out by third parties even when members of the cooperative. Particularly, the extension cultivated directly - around 350 hectares monitored, redeveloped and selected - aims to discover autochthonous productions and enhance them.

The total production reaches about 10 million bottles and the expected turnover for 2019 is 60 million euros, 70% of which is achieved thanks to exports to 76 countries (Germany, Switzerland, Japan, United Kingdom, Holland and Brazil in first place). Cantine San Marzano is one of the reference players in the Doc of the Primitivo di Manduria and in Puglia.

With particular regard to supply relations, currently management mechanisms might be ascribed to farmers’ capacities combined with those of the company, also considering the price recognized for the contribution, highlighting the need for a path yet to be completed, more complicated when in presence of the generational shift which between winegrowers is usually not easy. For this reason, the San Marzano management hopes adoption of increasingly and coordinated relational systems in order to ensure quality raw materials functional to the productions to achieve.

The company is currently engaged in a supply chain project in which the automation of production processes and relations with the end customer are provided and supported by useful tools such as Customer Relationship Management (CRM) platforms. The shared information platform (such as an ecosystemic platform) is able to ensure controlled management and continuous monitoring of processes. Additionally, the platform is also able to bring the productive reality closer to the consumer integrating technological, methodological and data tools in various segments of the supply chain. Consistent with this objective CRM is increasingly able to automate relationships with consumers, stimulating a greater involvement in construction of the final product (co-production).

4. CONCLUSION

The research carried out identified foundations on the role that aggregation and innovation might have when integrated in a customer-centered perspective as a driver of the competitiveness for wine companies.

According this approach we observed both the activities useful for wine companies in order to enhance production and the characteristics that supply relationships must manifest, particularly in case of cooperative business models, to ensure adaptation at consumers' needs and therefore competitive capabilities for business.

Aggregation assume this role when in a systemic perspective it synergistically combines critical company resources (such as organizational capital, productive potential, image and credibility and so on) with those of the actors with whom it is in direct relation without neglecting the primary role of the territory at which belong (i.e. agronomic and productive heritage, vocation, entrepreneurial culture, human factors).

Clearly, the proposed this path must be completed with a second dimension, the innovation, which might consider as a cultural, technological and marketing value.

Considering the competitiveness drivers analyzed, the adoption of the relationship study model might be a useful tool aimed to qualify prerequisites for growth in wine companies and interesting insights in order to define a path to follow for a correct setting. Additionally, the need to undertake an overall growth path undoubtedly cannot ignore innovation in both production and supply chains and therefore in consumers relationships as well. This last aspect must not be neglected in a perspective of market analysis and monitoring in constant adaptation.

The application of the proposed model at the case study about Cantine San Marzano contribute to highlight how this company today is as a completing system considering supply relationships activated with those who represent the property. This is because some prerequisites such as production control, using technological sensors exist, while other ones, particularly related to aggregation might be opportunely coordinated, combined and controlled even more deeply and aimed to be oriented towards a customer-centered vision. However, the company is currently implementing new technologies that deal with aspects concerning control and transformation of raw materials, even considered production process including bottling and traceability contributing to identification, involvement and maximum consumers care and satisfaction.

REFERENCES

- Baccarani, C., & Golinelli, G.M. (2011). Per una rivisitazione delle relazioni tra impresa e territorio. *Sinergie*, 29 (84), 7-13.
- Barile, S., Nigro, C., & Trunfio, M. (2003). Un modello per la valutazione della rilevanza dei sovra sistemi, *Esperienze d'Impresa*, 9 (S/1), 87-106.
- Borghesi, A. (2001). I processi di supply chain management, product development management e customer relationship management: la nuova alleanza e la loro centralità nella funzione di marketing, *Sinergie*, 19 (56), 3-36.
- Busacca, B., Bertoli, G., & Molteni, L. (2006). Consumatore, marca ed effetto 'made in': evidenze dall'Italia e dagli Stati Uniti, *Finanza Marketing e Produzione*, 24 (2), 5-32.
- Calabrese, G., & Vesci, M. (2003). Un possibile percorso per l'analisi della rilevanza dei sovra sistemi per l'impresa sistema vitale, *Esperienze d'Impresa*, 9 (S/1), 145-159.
- Costabile, M. (2001). *Il capitale relazionale*, Milano: McGraw-Hill.
- Fait, M. (2008). *Competitività e sviluppo dei territori del vino*, Bari: Cacucci.
- Fait, M. (2010). Brand-land equity nei territori del vino, *Mercati e Competitività*, 3, 119-140.

- Fait, M., & Iazzi, A. (2012). Aggregazione e innovazione: un modello di governance per la competitività delle imprese vitivinicole, *Economia, Azienda e Sviluppo*, 1, 51-68.
- Golinelli, G.M. (2000). *L'approccio sistemico al governo dell'impresa. L'impresa sistema vitale*, Vol.I, Padova: Cedam.
- Golinelli, C.M. (2002). *Il territorio sistema vitale. Verso un modello di analisi*, Torino: Giappichelli.
- Golinelli, C.M. (2008). *La valorizzazione del patrimonio culturale: verso la definizione di un modello di governance*, Milano: Giuffrè.
- Grando, A., Verona, G., & Vicari, S. (2010). *Tecnologia, innovazione e operations*, Milano: Egea.
- Gummesson, E. (2005). After relationship marketing, CRM and one to one: many to many networks, *Finanza Marketing e Produzione*, 23 (3) 138-144.
- Kotler, P., Keller, K.L., Ancarani, F., & Costabile, M. (2012). *Marketing Management*, Milano: Pearson Italia.
- Maizza, A. (2001). Logistica e supply chain management. Un esame con l'analisi sistemica nel comparto agro-alimentare, *Sinergie*, 19 (56), 111-132.
- Massaroni, E. (2002). Forme, caratteri e divenire sistemico dei rapporti d fornitura. In G.M. Golinelli, *L'approccio sistemico al governo dell'impresa. Valorizzazione delle capacità, rapporti intersistemici e rischio nell'azione di governo*, Vol.III, Padova: Cedam.
- Mastroberardino, P. (2005). *L'approccio sistemico al governo dell'impresa. L'impresa della vite e del vino*, Padova: Cedam.
- Orth, U., McGarry Wolf, M., & Dodd, T. (2005). Dimensions of wine region equity and their impact on consumer preferences, *Journal of Product & Brand Management*, 14 (2), 88-97.
- Rullani, E. (1999). L'impresa e il suo territorio: strategie di globalizzazione e radicamento territoriale, *Sinergie*, 17 (49), 25-31.
- Santovito, S. (2005). *Governo e gestione dell'impresa agro-alimentare*, Bari: Cacucci.
- Siano, A., Confetto, M.G., & Vollero, A. (2004). CRM e scelte di comunicazione d'impresa, *Esperienze d'impresa*, 11 (S/3°), 53-88.
- Signori, P. (2004). *La misurazione dell'integrazione logistica nel Supply Chain Integrated Management*, Padova: Cedam.
- Valdani, E., & Ancarani, F. (a cura di). (2000). *Strategie di marketing del territorio. Generare valore per le imprese e i territori nell'economia della conoscenza*, Milano: Egea.
- Van Leeuwen, C. & Seguin, G. (2006). The concept of terroir in viticulture, *Journal of Wine Research*, 17 (1), 1-10.

THE LEADER OF THE NEW GENERATION: HUMBLE, CONNECTOR AND CONSCIOUS

Marius Calin Benea¹ 

DOI:

Abstract: *Romania has few authentic leaders. And a lot of imagined leaders. Although the managers and entrepreneurs of today have access to profile information and an elite of specialists to advise them on leadership, few are willing to make the transformation from the native concept of „boss” to the one as an authentic leader. And fewer are those who then internalize in depth the concepts learned in the dedicated coaching programs. We have chosen to oppose this pessimistic reality at the other extreme, that of the humble leader. In counterpart of the paradigm formed by bosses, managers, leaders or directors with a function that gives them power. This paper debates the concept of humble leader, often confused with the humble or modest leader.*

Keywords: *Leadership, Humility, Learning.*

1. INTRODUCTION

Digital transformation is complex and dynamic. Technological changes happen exponentially, combinatorial and recursively, which entails profound and rapid changes. Therefore, we cannot predict the future starting from the past, because the future will not be any longer an extension of the present. Thus, the digital transformation and its implications for leadership and organizations must be addressed holistically.

There is great need for leadership and new leadership is needed.

The causes that increase the need for skills of leadership are:

- **The world is very complex and the information is active and a lot.** Understanding reality and filtering the information requires critical thinking. All these are a source of stress; therefore, we need people to help those who need to reinvent themselves and regain performers.
- **Competition is fierce,** because there is no geography anymore.
- **The work environment is multigenerational** as a result of performance in medicine, of mentality change and of economic pressures. At work four generations will meet - with mentality, needs and different characteristics. Thus, leaders must create a culture of diversity.

Therefore, there is a great need for competent and performant leaders. And today, performance in leadership is reached by humbleness, consciousness and connection.

¹ „Politehnica” University Timișoara, Faculty of Engineering Hunedoara, Revoluției 5, cod 331128, Hunedoara, Romania

2. MANY MAY CONTEST HUMBLENESS AS BEING A QUALITY OF A LEADER

The universe of small and large companies has all kinds of leaders: appointed, self-styled, or simply LEADERS. We'll stop at the characteristics of the last category because it is the most valuable. For them everyone "fights":

- Natural positive attitude, balanced, cooperative, opened, valorized;
- Empathy, the capacity to mobilize people (project connector), to take quick decisions, to designate and delegate clear tasks to their teammates;
- Firmness, coherence, vision, inspiration;
- Resistance, tolerance and moderation in crisis situations;
- The power to listen and understand the needs and expectations of those their lead;
- The generosity to teach the others what you know that might help them make progress.

Many may contest humbleness as a leader's quality. He must be strong, invincible, and just to lead. And yet ... the way in which a leader relates to the power he has will always create the difference. The one that holds so many tools to lead people and remain aware of his primary role, which is to act in the service and in the interest of others, will be hard to beat!

From a realistic perspective, the management board of a large company will hesitate to hire a leader with such a human face.

In the absence of professional assessments within the leaders of multinational companies, medium or small, it is hard to identify this rare quality. In the wider area of leaders that I admire in this direction, I think of Jacques Attali, a prominent theorist in economics and social sciences, writer, first director of the European Bank for Reconstruction. A contemporary thinker of great strength, that with humbleness and the strength of his mind, he devotes for years the activity to some causes global concerns, such as environmental protection.

This type of leader is successful simply because it is excellent at what he does and has a very good relationship with his ego. No need to write his title on all doors, does not put big picture hallways, does not feel the need to say "I'm your boss, I'm right!" His success is only an attribute, **the value of his work lies in the fulfillment which feels directly contributing to progress of the company and its people.**

The present education system of factory type cannot cope with the knowledge-based economy. And here, in Romania, the younger generation has enormous potential. The anachronistic system in which the young learn, their family life poor in transmitting moral values, models, general knowledge, responsibility and engagement, misses from the start this potential. With exceptions, of course. Therefore, it is becoming increasingly difficult to identify talents, to train them for professional performance and leadership. All seek leaders, few manage to find them.

3. THE MAIN ROLE OF A LEADER IS TO BE THE KEEPER OF THE COMMON GOOD

Humbleness is, indeed, often equated with modesty or, at least, with submissive behavior. From this perspective it is incompatible with management. Human groups need leaders, it is a deep need, atavistic, transmitted by genes from one generation to another. Need is not absurd. There

have existed in past times a number of natural experiments of some micro-companies built in extreme situations: the shipwrecked. For someone who reads the history of hundreds of shipwrecks whose histories are known, begin to emerge quite clear some models.

The evolution of these micro-communities, always in limit situations, is very different, radically different. Some of them manage very well in the survival game. Others don't, most of their members perish. Very few are found themselves in the middle. The difference between the two extremes is always the same: reporting on general human social rules and a respected leader, but not authoritarian. The lack of presence of a domineering, oppressive leader or of leadership, always led to the disappearance or drastic reduction of communities.

A good leader, however, cannot be neither humble nor submissive, because then he no longer acts as a leader. He must, however, understand, first, what is that role. Many leaders see themselves as a unique source (or main) of power and authority of the group, owners of all decisions, the source of vision of the future and of ways of action. He is the model of the heroic leader. If they retire from this position, these leaders do it based on delegation, they give to others from their power, with discretion and implicit understanding that they can take it back at any time. This leading behavior causes addiction from others, passivity or sometimes rebellion and conflict. It can give good results, but is totally dependent on the quality of the leader and his ability to keep order in the group.

But this isn't, in fact, the role of a leader, not this of leader people really need. **The main role of a leader is to be guardian of the common good.** Is the person who keeps the community alive, gathers people around each other, keeps and maintains human social values, distinguishes between good and evil, defends common morality? The leader is the one who gives power and cohesion to the community and greatly increases its transmitting capacities to perform and survive in difficult situations. In such a united community, difficulties are obstacles to overcome, they unite and gather. In a community led in an authoritarian way the difficulties are excuses to diminish efforts, they disperse people. From here the completely different results they obtain.

A leader who assumes this role, of catalyst for community, is a leader that leads from the inside, is a leader in the literal sense of the word. Latin, as Romanian, defined well this role: **leads, takes with him, gathers people around him and leads from the middle of them.** From this position, such a leader does not perceive himself as a hero on a pedestal. Moreover, he doesn't seek and does not want this position because he knows that there can no longer exercise this purpose as well. He understands that he is not superior to others, but their catalyst. In this key must be understood, in fact, humbleness.

In the Christian culture, humbleness often has religious and monastic connotations. The reason for this is that its Teacher is the first and best example of the subject: **"Jesus was neither humble nor submissive nor naive. When it was necessary, He knew to be fierce and sharp. But He was never the head of his followers, but their source of well and wisdom. And these qualities changed the world."**

4. THE AUTHENTIC LEADER HAS THE COURAGE TO CLIMB DOWN FROM THE PIEDESTAL AND TO ADMITT THE FACT THAT HE HAS DOUBTS

Leadership has always been closely linked to success and success to the results you get. Which obviously must be positive. The projects I have undertaken in recent years, remembered me Voltaire's saying "*the success which does not have followings does not mean anything*". Because, in fact, if you don't have someone to share the joy of a great result, what good to strive to get it? I think the essence of the new generation leader actually means not only to get the people to follow your plan, but also to share with them the satisfaction of success. And because success is, somehow, the end of the road you go through with the team, you must first learn to listen, that is to be humble. To know how to unite the energies of all and put them to work as a whole, means to connect the individual energy to the target of the group. That means to be a connector.

And finally, to be aware means to understand that without your team you would have failed in achieving the goal, so basically to understand that success is for each member. There was much talk in recent years, in public, about the differences between a leader and a boss and the results obtained in the two situations. Leader is not only the one who assumes responsibility for both success and failure, leader is the one that takes time to listen to his people. And to achieve this, the leader must step down from the pedestal. He must meddle with his team to sit at the same table with them, observe them and to listen to them. And to admit, when it is appropriate, that he is a man and that he makes mistakes just like them.

There are such leaders in Romania in general entrepreneurs who have started to work side by side with their teams and who never forgot from where they left. In the world, some examples, have drawn my attention - Dalai Lama is one of them, Nelson Mandela is another example and I think we could include here Elon Musk. This kind of leader relates to success through the benefits brought to the people that they have represented and through the positive changes they have generated in the societies to which they belonged. The courage that they had, that to descend from the pedestal and recognize that they have doubts, that although they don't know all the answers they still do not give up, are attributes that have made them the most admired, most respected most followed people. These leaders are the ones who had imprinted new attributes to the Napoleon type of leadership which we all knew. As society and economy have their own dynamics, the same is with leadership.

The digital age means another type of connection, is to use machines to see better the people, to know better, to optimize the processes. Basically, with the help of the technology, you can form a team whose members can be anywhere in the world, but can work as if they are in the same office.

With technology, you can discover the man in your team faster than ever before. The leader becomes more a connector of interests, of objectives and needs of his team members.

To understand the new generation, including future leaders, the first who should be involved are parents and teachers, by active listening, giving up templates such as "do as I did" or "I know better". Give them the freedom to express, to reveal the creativity. To empower them and give them options or to explain the options and risks and let them choose. Responsibility of every act or activity at school is to prepare them for responsible job or business they will have at adulthood.

5. A HUMBLER WORLD, ESPECIALLY IN THE BUSINESS AREA, WOULD BE A BETTER WORLD

One research reference in the study of organizational leadership is the one by Jim Collins, described in the book *“Good to Great: Why Some Companies Make the Leap ... And Others Do not”*. Collins studied 11 companies in top 1000 richest ones that had performance below average for 15 years and then another 15 years above average.

What made possible this jump performance was due to the leadership changes. Collins talks about competitiveness without fear accompanied at the same time, by another ingredient, which may seem paradoxical, namely humbleness. Further research shows that employees who work for humble leaders, without desire for self-promotion and pointed to see themselves as resources to facilitate team performance are more involved and remain longer in the company.

In my work experience with leaders from different organizations in Romania, multinational and big entrepreneurial, I found that better retention and the desire of people in the company to submit additional effort to achieve the results are possible because these leaders share the merits with all others and thus creates a sense of trust in others. Often there is no link between confidence and actual competence, and not because there are not enough realistic people, but because most see themselves better than they really are.

Being humble in business means being able to share the success with the team, to relate to success in the plural, to take responsibility for what goes less well, to be open to feedback, to be able to pull ahead and to recognize those who you work with, to behave properly, fairly, to perceive yourself as a resource for the team you drive, to not assume special privileges, believing you can do anything and that you are entitled to everything.

Low self-esteem, the feeling of insecurity, emotional immaturity is correlated with the desire to be the center of attention, to be seen, supported by others, validated. Therefore, often, in business, histrionic behavior, seductive, manipulative may mask a need to verify that “you’re good enough”.

The leadership based on humility model seemed taken, until recently, from the biblical stories. In terms of collective mindset, in the capitalist business environment, it was cooler to be charismatic, knowing-all, seductive, bold, aggressive etc. If we read through the articles from 10-15 years ago, we will find out that at that time, the discourse about what leadership means was associated with the glorification of some features such as “sociability”, “confidence”, “charisma” etc. The first useful exercise for any leader, especially for a charismatic one, is to look in the mirror and if he sees perfection, he should ask and listen to feedback from colleagues and team. There are also advantages of the trust in oneself:

1. You feel good to think you are better than others, whether it is perhaps only an illusion;
2. This illusion helps (up to a point) to convince the others that you are more valuable than you really are.

The organizations must begin to understand and recognize what really matters to make performance to see clearly what is the pattern of behavior of leaders validated by employees and that leads to success. Leadership is the ability to form and maintain teams to achieve performance, not the ability to stand out and get as many privileges for oneself. A humble world, especially in the sphere of business, and also in society would be a much better world.

6. THE SUCCESSFUL LEADER IS THE MOST DETERMINED AND ADAPTABLE PERSON ON EARTH

Internationally, I see humble leaders in Queen Elizabeth II of Great Britain (*„I know that I have a female body, but I have the heart and courage of a King“*), Nelson Mandela (*„Brave people are not afraid to forgive for the sake of peace“*), Mother Teresa, the universal symbol of leading peace and love (*„beware that all who come to you leave better and happier“*).

In Romania, the masterly example of a humble leader, connector, conscious, wise is Queen Maria of Romania (*„In the years of pain I learned to pray“*).

I believe that the Romanian leader is one of the most valuable in the world - I refer only to those who made the revolution and changed in good everything they touched and not for a moment the kind of leader abusive, domineering, dictator. In Romania, the leaders emerged with the fall of communism and were stated in a country that did not even exist in the vocabulary words manager, entrepreneur, market economy, leadership, capital, business.

So, the digital age, as any transformation is for successful leaders a new challenge, a new path for development, innovation and differentiation. They embrace change, whatever it may be, and live fully this state. A true leader sees beyond the symptoms and seeks the causes of problems, taking into account the idea of „Change yourself and you will change the world“.

When we no longer blame everything that happens when we will overcome the victim condition of an educational model or system, when we will see the greatness and wonder of life in everything around us, when we will look and act consciously - in present moment - making new choices of high vibration, as is our divine being, with kindness, compassion, respect for everything around us and when we will embrace change as the most beautiful answer to life, then we will become leaders of our own lives and we will be able, through our model, to inspire, to challenge and to form real leaders.

7. FUTURE RESEARCH DIRECTIONS

The new challenges of leadership in the digital economy - Based on the words of Pearl Zhu: *“In a world of well-defined problems, directors are required to exercise influence over volatility, manage uncertainty, simplify complexity, and resolve ambiguity in the 21st-century digital environment”* we indicate **the factors ensuring future leadership performance: performance, growth mindset, data mining, business talent, digitization.**

To have talent for business (business acumen) means not only understanding and knowing the business environment, but also having **the ability to make choices depending on the context, not based on habits and automatism. The context is changing, and if we consider it, we will make performance.**

In emergency situations, when we are under pressure, we act on instinct. So, learning must be accompanied by transformation.

Thus, a future leader must increase the speed and agility of transformation, to support leadership for change, to support collaboration and create growth through learning and organizational culture.

In this way one can **pass from independence to interdependence, from control to connection, from individual to group and from alliances to network.**

Agility is based on respect, courage, openness, concentration and dedication.

8. CONCLUSION

You cannot do business without character. First you need to create values, which then have to support skills. Among the inadequate skills there are: individual competition through the destruction of ideas, procrastination and the habit of freezing (fight or flight became fight or freeze) – which generates depression and anxiety.

Being adaptable does not mean to develop safety mechanisms, but to create value.

Leadership skills are more awoken than developed. The role of the leader is to awaken existing leadership skills in people. He can do that by being himself the model of leadership that they seek and ensure them their proper context so that the necessary transformation can be produced in them.

8.1. Leadership key elements.

The leader must not lose touch with the people he leads. His role is to create characters and develop people. And for that he has to understand the times and adapt the learning to the future.

REFERENCES

- Collins, J.C., (2001). *Good to Great: Why Some Companies Make the Leap... and Others Don't*, New York, U.S.A, Publisher: William Collins
- Pearl, Z., (2018). *Digitizing Boardroom: The Multifaceted Aspects of Digital Ready Boards*, Morrisville, North Carolina, U.S.A. Publisher: Lulu.com

IMPACT OF CONSOLIDATION PROCEDURES ON THE IMPLEMENTATION OF THE INFORMATION ACCOUNTING FUNCTION

Artur Jastrzebowski¹ 

Zofia Wierzbinska² 

Marek Wierzbinski³ 

DOI:

Abstract: *Financial reporting is often referred to as the result of all activities undertaken within the accounting system. As an element of financial accounting, it is associated with the implementation of various functions attributed to accounting. However, the area of financial reporting itself is divided into two elements - single reporting and consolidated reporting. Consolidated reporting is a characteristic process with its own procedures and assumptions. Therefore, the question should be asked whether the differences do not affect the implementation of the basic accounting function - information function.*

The purpose of the article is to present the impact of implementing the characteristic procedures of the financial statements consolidation process on the implementation of the accounting information function.

The study was divided into three parts, preceded by an introduction and completed with conclusions. The first part describes the essence of the accounting function with particular emphasis on the information function. The second part presents a model process of consolidating financial statements according to IFRS regulations. The last section of the study presents an analysis of the characteristic points of the consolidation process and assesses their impact on the implementation of the accounting information function.

The work was based on the method of analyzing literature sources, the comparative method and the method of synthesis.

Keywords: *Information Accounting Function, Consolidation, Financial Statement.*

1. INTRODUCTION

Financial reporting is often referred to as the result of all activities undertaken within the accounting system. As an element of financial accounting, it is associated with the implementation of various functions attributed to accounting. However, the area of financial reporting itself is divided into two elements - single reporting and consolidated reporting. Consolidated reporting is a characteristic process with its own procedures and assumptions. Therefore, the question should be asked whether the differences do not affect the implementation of the basic accounting function - information function.

¹ Poznań University of Economics and Business, Department of Accounting and Financial Audit, al. Niepodległości 10, 61-875, Poznań, Poland

² Poznań University of Economics and Business, Department of Management Accounting, al. Niepodległości 10, 61-875, Poznań, Poland

³ Poznań University of Economics and Business, Department of Management Accounting, al. Niepodległości 10, 61-875, Poznań, Poland

2. THE ESSENCE OF THE ACCOUNTING INFORMATION FUNCTION

According to many theorists (Butterworth 1972; Feltham, 1968; Gos 2008), the essence of accounting is closely related to the generation and processing of information. Moreover, the involvement of accounting in the process of supporting managerial decision making through the provision of appropriately tailored information is so large that some scientists define it as an information system (Kunz & Tymińska, 2014, p. 44).

The importance that is assigned to the process of handling information by the accounting system causes that the information function is often recognized as the primary accounting foundation (Brzezina 1998).

The subject of interest in this area is information understood as a product of the accounting system, presented to recipients in an aggregated form with the use of financial statements of entities (International Financial Reporting Standards 2014, p. 36). All processes in the company's accounting focus on processing data as a resource obtained by the accounting system into information that is a product of its operations.

The features of information depend on the accounting subsystem under which they were prepared. According to the International Financial Reporting Standards (2014, p. 42), information in the financial statements should be characterized by two fundamental features:

- Usefulness,
- faithful presentation.

The usefulness of information should be considered as the impact of information on changing the user's decision (International Financial Reporting Standards 2014, p. 42-43).

On the other hand, a faithful presentation means that the information should present transactions and other events that took place in a business unit. Information having the feature of faithful presentation is complete, impartial and it does not contain errors (Różyńska 2013, p. 377).

The unambiguous description in the literature that the described accounting function provides information for the needs of the entity's management and for external recipients is an expression of the fact that in the accounting theory it can be distinguished (Poetschke 2011, p. 16):

- external information function,
- internal information function.

It is generally believed that financial accounting, i.e. one of the accounting subsystems, is responsible for the provision of information to external users. Its goal is to show the company's assets and capital, as well as to register factors that shape the entity's financial result. Information created as a part of the financial accounting is retrospective and constitutes the main source of shaping the image of the entity. Provision of information for external stakeholders is realized (mainly) via financial statements (Kurek & Zielińska 2000, p. 145-146).

It should be noted that the growing economic risk increases the scope of information about the entity desired by external users. This process forces the continuous evolution of financial statements and the entire accounting system in such a way that accounting can provide information for the largest possible group of stakeholders.

The internal information function is realized by both the financial accounting and management accounting subsystems. Information generated by financial accounting is not sufficient for the needs of making optimal economic decisions by the entity's management.

According to Kurek and Zielińska (2000, p. 147), one of the reasons for this situation is a high degree of formalization in obtaining information within the framework of the financial accounting. According to the above-mentioned authors, the emerging gap is filled with management accounting, which is focused on supporting the decision-making process. The information generated in the management accounting subsystem is informal and it is largely shaped by individual needs of the entity's management. They are based on data expressed both in monetary measure and in natural units.

An important aspect of information generated as a part of management accounting is its orientation, not only on the past, but also the future of the entity. The generated information enables the development of plans that show different variants of the formation of assets, sources of financing and the entity's financial result.

In conclusion, it should be stated that the essence of the information function is to provide information for decision-making purposes in a complex manner - both to external users (mainly information from the financial accounting subsystem) and internal users (in particular, information from the management accounting subsystem).

The subject of interest of this article is the area of the external accounting function that presents information with the use of financial statements. There is a question - how do the procedures implemented in the process of preparing the consolidated financial statements affect the performance of the information function?

3. SHAPE OF THE CONSOLIDATION PROCESS IN FINANCIAL STATEMENTS

The process of consolidating financial statements is (in essence) an implication of the accounting principle of the superiority of economic content over form. The basis for the need to implement the consolidation process is the occurrence of a special relation between two entities. Among the entities operating on the market, there may be three groups of impacts, presented in the figure below.

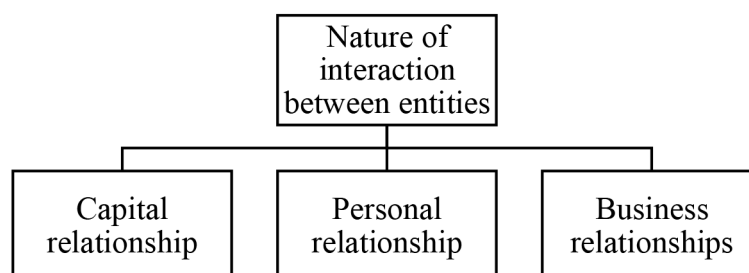


Figure 1. Types of relations between enterprises

Source: Own study

The first of the presented forms of impact has the most formal character. The connection between entities results from the capital involvement of one entity in another entity. It is also the most transparent and easily traceable type of connection. Impact bases can be highlighted on the basis of specific assets and liabilities of units.

The second type of relationship has a less formal nature in relation to the capital relationship. In this case, the entities do not engage their capital, but their relationship results from personal relationships. A condition for the occurrence of a personal relationship is connected with making decisions in operational and financial policy by allied people.

The last of the identified types of business combinations and the least formal interaction is a purely business relationship. It occurs when entities are not related by capital or personnel. However, due to specific market conditions, one entity can actively influence the activities of another business entity.

Despite the fact that from the point of view of conducting business activity, each of these forms of impact can significantly affect the functioning of the entity, according to many regulations (including regulations contained in the International Financial Reporting Standards (IFRS no.10)), the consolidation process covers only interactions with a capital nature.

However, it would be incorrect to believe that each form of capital involvement will result in the need to prepare the consolidated financial statements. In this regard, the power of influence should be decisive. The figure below shows models of capital involvement.

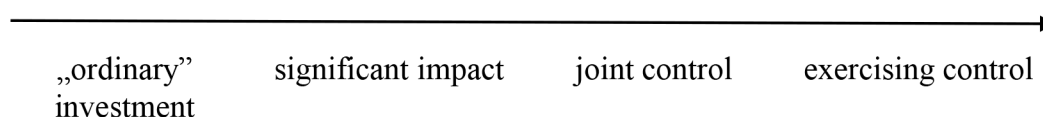


Figure 2. The impact of companies

Source: Own study

The „ordinary investment” is the least engaging form of capital relationship. In this case, the entity acquired shares in another entity, but it is not interested in being an active owner. In most cases, such an acquisition has a purely speculative nature.

Another form of interaction is the significant impact. In this case, the entity wants to remain an active investor and it wants to have an impact on the functioning of the subordinate entity. However, the number of shares or other conditions prevent this entity from making autonomous decisions.

The entity exerts greater impact on a subordinate entity in the case of joint control – when in consultation with another co-owner (on the principles of consensus) binding operational and financial decisions regarding the subordinate entity are made.

The strongest form of influence is control, i.e. the situation when the parent entity can autonomously manage the operations of the subordinate entity. According to the definition presented in paragraph 6 of the standards (IFRS 10), the investor exercises control over an entity, in which an investment has been made, when (due to his involvement in this entity) he is exposed to variable financial results or when he has the right to variable financial results and the ability of influence the amount of these financial results by exercising power over the entity.

In conclusion, according to paragraph 7 of the regulation (IFRS 10), the investor exercises control over the investee, when the investor (simultaneously):

- exercises authority over the entity, in which the investment was made,

- due to his involvement in this entity, in which the investment was made, he is exposed to variable financial results or has right to variable financial results,
- has the possibility of using the power to exert influence on the amount of his financial results.

While evaluating whether he exercises control over the investee, the investor takes into account all facts and circumstances. The investor reassesses whether he exercises control over this entity - if the facts and circumstances indicate that there has been a change in one or more of the three control elements listed above (IFRS 10, par. 8).

When specifying the issue of exercising power, the regulations specify (IFRS 10, par. 10-14) that the investor has power over the investee, if the current rights give him the ability to manage relevant areas in the area of shaping operational and financial policy on a current basis. The power results from the possessed rights. Sometimes the evaluation of power is obvious. For example, when it is obtained directly and exclusively from voting rights granted on the basis of capital instruments such as shares and then it can be assessed taking into account the voting rights from these shares. In other cases, the assessment is more complex and it will require consideration of more than one factor – for example, when the power results from one or more contractual arrangements. An investor (with the ability to control the relevant activities on an ongoing basis) has the power even when these rights have not been exercised yet. An evidence that the investor has exercised his right to control the relevant activities can help in determining whether the investor has power (while this type of evidence is not sufficient to determine whether the investor has power over the investee). However, the investor, who only has protective rights, has no power over the investee and (consequently) he has no control over this entity.

Ultimately, the power can be understood as active influence in the following areas (IFRS 10, par. B11-B12):

- sale and purchase of goods and services,
- management of financial assets during their lifetime (including defaults),
- selection, acquisition and disposal of assets,
- conducting research and development works regarding new products and processes,
- establishing the financing structure or obtaining financing,
- making operational and capital decisions regarding the investee, including setting budgets,
- appointing and paying for key management personnel of the unit, in which investments were made, or service providers, as well as terminating service contracts or employment contracts with them.

Compliance with the guidelines contained in the above regulations enables to identify the occurrence of impacts in the form of control. This, in turn, involves the use of the full consolidation method in the process of preparing the consolidated report.

The consolidation procedure of full method (itself) will not always be carried out in the same way and it depends on the time of its implementation. There are two characteristic moments for the preparation of the consolidated financial statements:

- moment of the purchase of shares,
- any other balance sheet day.

In accordance with paragraph B86 of the standard (IFRS 10), consolidation includes:

- grouping of similar items in assets, liabilities, equity, revenues, costs and cash flows of the parent entity and its subsidiaries;
- compensation (excluding) of the carrying amount of the parent entity's investment in each of subsidiaries and the portion of the equity of each subsidiary that corresponds to the parent entity's share (IFRS 3 explains how to recognize the goodwill arising in this situation),
- total exclusion of assets and liabilities, equity, revenues, costs and cash flow of the capital group relating to transactions between entities of this capital group (profits and losses, related to transactions within this group that are recognized as assets such as inventories and fixed assets, are completely excluded). Losses on transactions within the group can mean impairment that requires indication in the consolidated financial statements.

As a consequence, the shape of the exemplary full consolidation procedure (at the time of acquisition) is presented in the figure below.

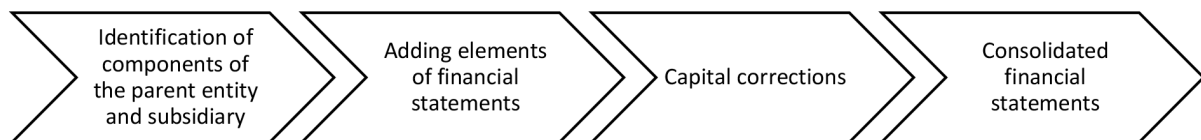


Figure 3. Consolidation procedure at the time of the purchase of shares

Source: Own study

The consolidation process (at each balance sheet date following the date of acquisition of shares guaranteeing control) constitutes both the repetition and continuation of the sequence at the time of purchase. The reference system is shown below.



Figure 4. Consolidation procedure as at the balance sheet date

Source: Own study

It should be noted that the elements marked with the symbol „*” are not mandatory. Their occurrence depends on actual conditions, and in particular on the transactions concluded between the entities belonging to the capital group and on the relation between the purchase price of shares and the fair value of the acquired assets (net).

The next section discusses individual stages of the consolidation process in the context of their impact on the implementation of the information accounting function.

4. IMPACT OF CONSOLIDATION PROCEDURES ON THE IMPLEMENTATION OF THE INFORMATION FUNCTION

As it was indicated, the information accounting function focuses on the provision of information to various user groups in order to support their decision-making processes. However, in order to understand its correlation with the consolidation process, it is necessary to consider who is the user of the consolidated financial statements.

Various groups of users of financial statements are identified in the literature, in particular (Cole, Branson & Breesch 2011, p. 110):

- auditors,
- shareholders,
- investors,
- employees,
- creditors,
- consultants,
- competitors,
- tax authorities.

However, not all of these users are equally interested in the information from the consolidated financial statements. For example, investors or lenders will use the consolidated report mostly to assess the immediate environment of the entity, as well as to assess the opportunities and threats related to the functioning of the entity within the capital group.

Undoubtedly, the main users of information from the consolidated financial statements are the owners. Their goal is to obtain (through this report) the answer to the question: how much is their property worth (which is formally separated into individual companies included in the capital group). As a consequence, the positive impact of consolidation procedures will be exerted when the application of the procedure makes the presented value real (from the point of view of the parent entity's owner).

Apart from the process of identifying the entities belonging to the capital group, the combination of individual reports concerning entities included in the capital group should be considered as the first stage of the consolidation procedure. Of course, taking into account the main owner's information need, summing up the data of individual entities enables to obtain the aggregated information about the value of property. However, further analysis shows that simply addition of individual items can contribute to double recognition of individual categories of assets, sources of financing, revenues and costs. Therefore, abandoning the consolidated financial statement at this stage would contribute to the reduction of its usefulness, and thus to diminishing the importance of the information function.

Therefore, after summing up the reports, there should be a stage related to the correction of the data obtained in accordance with paragraph B86 of the standard (IFRS 10). Initially, capital adjustments are conducted in order to:

- correct the double recognition of capitals and assets, by removing the acquisition value of shares held by the parent company in subsidiaries and by eliminating the equity of individual subsidiaries,
- consider the goodwill / profit on a bargain purchase,
- consider the non-controlling share.

Removal of the purchase price of shares and equity of the subsidiary enables to avoid double disclosure of subordinate entity's assets and capitals contributed by owners to the group within the framework of business financing. The correct implementation of the procedure enables to obtain the value of „clean” assets and sources of financing. This, in turn, can be the basis for the evaluation of the entire capital group's value, and thus the property belonging to its superior owners.

However, it should be remembered that capital adjustments cannot always be limited to the removal of the purchase price for shares and equity. If there are differences between the purchase price and the fair value of the net assets and the acquisition of a majority of shares rather than an overall block of shares, it will also be necessary to include other elements that will enable to balance the consolidated financial statements.

The difference in the valuation of the subsidiary's shares and assets may result in the creation of a category of goodwill or profit on a bargain purchase. In addition to enabling the balancing of assets and liabilities in the consolidated statements, both elements will also provide information about the actual relationships between entities at the time of acquisition of shares and about the opportunities or threats facing the subsidiary. Therefore, the owner obtains not only data about the market value of subsidiaries, but also data about its expected future shape.

The value of non-controlling interests determined on the basis of the regulations of IFRS (IFRS 10), and in particular paragraphs B89 and B90, enables not only to fill the accounting gap created after the initial reduction of assets and liabilities, but also to obtain information that goes beyond the standard information resource determined in a separate statement of financial position. While in the case of separate statements, capital is presented from the point of view of all owners, the separation of non-controlling interests, i.e. the value of capital attributable to minority shareholders of the subsidiary, in the consolidated statements allows for a clear separation of the values attributable to owners of the parent entity and donors of the capital (from outside the group).

The next phase includes corrections related to the effects of transactions within the capital group. In particular, the following corrections are recognized at this stage:

- revenues and expenses,
- receivables and liabilities,
- unrealized profits retained in inventory,
- unrealized profits retained in other assets.

Pursuant to paragraph B86 of the standard (IFRS10), the aim of the above categories and their equivalent is to clean the consolidated financial statements from the effects of transactions that took place within the group in a given period. Again, the implemented procedure not only corrects information errors arising in the first step (involving the collection of financial statements), but it also provides new data covering aggregated information about transactions conducted within the group. The owner can easily control both the volume and structure of sales and purchases, as well as the margins realized in these processes.

The last of the listed characteristic elements of the consolidation process covers other corrections, including:

- goodwill impairment test,
- determination of the value of non-controlling shares.

In the event of the acquisition of assets with the book value lower than the value of the acquired shares, the resulting difference is referred to as goodwill. It is presented as an asset. As already mentioned, this process (carried out at the time of capital corrections) can be considered positively in the context of the implementation of the information accounting function. However, this category also involves the procedure for updating the value of newly created assets.

Goodwill is reduced in accordance with the IFRS regulations when the value of the cash-generating unit (on which goodwill is based) is lower than its carrying amount. From the point of view of the information function's implementation, accounting departments are forced to verify the value of cash-generating units, and thus the owner can easily verify whether impairment of these areas of activity is realized in accordance with the adopted assumptions (whether it does not require in-depth analysis).

The last of these areas are non-controlling interests. As in the case of goodwill / profit on a bargain purchase, the identification and disclosure of items in the statement of financial position enables to maintain the correct performance of the information function. Further actions related to the revaluation (based on paragraph B94 IFRS 10) enable to obtain aggregated data that divides the generated net assets into the part attributable to owners of the parent entity and to the remaining part for third parties involved in subsidiaries.

5. CONCLUSION

The essence of the information function is to provide internal and external users with information about the entity in a complex manner and enabling them to make rational decisions on the basis of the obtained information. The article focuses on the external aspect of the information function - where information (mainly from the financial accounting system) serves users, who do not have direct access to the functioning of the entity.

The economic situation leads to the formation of various relationships and connections between enterprises. This causes that the financial results of various entities mix with each other. Economic and personal connections between entities do not affect their financial reporting – unlike capital connections. This makes it possible to present the result of related entities as a whole - which is justified, because thanks to the possession of a capital share in another entity, the company becomes (in a sense) an owner of its assets along with the liabilities. Moreover, the company has the right to participate in profits of this entity. Therefore, these rights are indirectly attributed to the owners of the parent company. The owners may be interested in comprehensive information about the property and financial situation, as well as the financial result of the group (as a whole).

In order to ensure the presentation of this information and the implementation of the information function (especially in the external aspect), consolidated financial statements are prepared. This article presents the procedure for preparing such reports and the impact of specific consolidation procedures on the implementation of the information function, taking into account the areas interested in this information.

REFERENCES

- Bedford, N. M. & Onsi, M. (1966). Measuring the value of information-an information theory approach. *Management Services*, 1, 16.
- Brzezina, W. (1998). *Ogólna teoria rachunkowości*, Częstochowa, Publisher: Wydawnictwo Politechniki Częstochowskiej.
- Butterworth, J. E. (1972). The Accounting System as an Information Function. *Journal of Accounting Research*, 10(1), 1-27. <https://doi.org/10.2307/2490216>

- Cole, V., Branson, J. & Breesch, D. (2011). The illusion of comparable European IFRS financial statements. Beliefs of auditors, analysts and other users. *Accounting and Management Information Systems*, 10(2), 106-134. <http://dx.doi.org/10.2139/ssrn.1521445>
- Feltham, G. A. (1968). The Value of Information. *The Accounting Review* 43(4). 684-696. <https://www.jstor.org/stable/243630>
- Gos, W. (2008). Wybrane uwagi na temat istoty rachunkowości, *Zeszyty Teoretyczne Rachunkowości*, (44), 69-78.
- International Accounting Standards Board (2014). *Międzynarodowe Standardy Sprawozdawczości Finansowej. Według stanu na dzień 1 stycznia 2013r.*, Warszawa, Publisher: SKwP.
- International Accounting Standards Board (2017). *IFRS 10 Consolidated Financial Statements*.
- Kunz, B. & Tymińska, A (2014). System informatyczny rachunkowości i jego rola w świetle ustawy o rachunkowości. *Financial Science*, 3(20), 44-58. <https://doi.org/10.15611/nof.2014.3.03>
- Kurek, H. & Zielińska, H. (2000), Informacyjna funkcja rachunkowości. *Zeszyty naukowe Akademii Ekonomicznej w Krakowie*, 553, 139-149.
- Poetschke, H. (2011). *Istota systemu rachunkowości. Podstawy Rachunkowości*, Poznań, Publisher: Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu.
- Rówińska, M. (2013). Cechy jakościowe sprawozdania finansowego jednostek gospodarczych. *Zeszyty Naukowe Uniwersytetu Szczecińskiego*, 757, 375-382. http://www.wneiz.pl/nauka_wneiz/frfu/58-2013/FRFU-58-375.pdf

MANAGEMENT OF INFORMATION IN ECONOMIC DIPLOMACY

Marek Csabay¹ 

DOI:

Abstract: *With regard to diplomacy information of various kind are in the very center of its operation and at the same time the purpose of existence. The paper discusses from the theoretical perspective the process of information management in economic diplomacy. The author shortly identifies the mandate of economic diplomacy in processing information based on the Vienna Convention on Diplomatic Relations from 1961 and focuses on the basic description of main information processes that take place within economic diplomacy. Part of the paper also discusses the role of information in diplomacy through areas of diplomatic action that may benefit from the information processes as well as their main receiving bodies.*

Keywords: *Economic Diplomacy, Management, Information Processes.*

1. INTRODUCTION

Diplomacy does not have a generally accepted theoretical definition, although its nature as a traditional means of conducting international relations through diplomatic agents is universally recognized not only by both academic and non-academic resources but also by norms of international public law. International relations include economic affairs among states; thus, we may speak of economic diplomacy as a means of their facilitation.

It is important to admit that the practice of economic diplomacy has many variations with some of them based more on customary praxis and acceptance by the receiving state than by strict interpretation of the Vienna Convention on Diplomatic Relations. Moreover, economic diplomacy is frequently used as a synonym or portrayal of actions by states that would seem to be better described as parts of international economic relations (e.g. exports, imports, investments), trade policy (e.g. application of some trade-political instrument) or other external economic policy while safeguarding economic interests abroad.

All of the above-mentioned areas of external economic activity have one aspect in common and that is their significant reliance on accurate, timely and exact information. Diplomacy is by its nature a mediator and processor of information. It collects and distributes information while exercising its tasks as an observing, negotiating and reporting arm of the government abroad.

2. DEFINITION OF ECONOMIC DIPLOMACY

Before we proceed to a further elaboration on information management processes in economic diplomacy, we have made a brief stop at its definition in order to establish a clear framework for the purposes of this paper. As mentioned already above, the term *economic diplomacy* is often generally used in a broader meaning that covers not only international exchange of goods and

¹ Institute of International Business, Faculty of Economics and Business, Pan-European University, Tematínska 10, 85235 Bratislava, Slovak Republic

services but also other components of international economic relations including international movement capital and labor as well as activities leading to coordination or adoption of economic policies. In a narrower and in our opinion more appropriate sense it is a part of public service, a government body established abroad based originally on customary practice and later on written sources of international law in a form of a foreign service governed by a domestic body, usually a ministry of foreign affairs or, eventually, a ministry responsible for external economic relations.

Various definitions can be demonstrated by following selected approaches, which of course do not represent a complete and comprehensive overview of authors dealing with this issue. Bayne and Woolcock (2004) and Okano-Heijmans (2011) hold that economic diplomacy deals with international economic relations. As Woolcock states (2013), economic diplomacy may be defined by the decision-making process and negotiations in international economic relations *“in core issues such as trade, investment and finance...also included are topics, such as the environment and development, that have considerable economic implications for policies in that areas”*. These authors refer to trade, commercial, financial, investment and environmental diplomacy as specific forms of economic diplomacy.

The use of various other economic adjectives forms another element for understanding contemporary economic diplomacy. Historically, the first on the scene was the trade diplomacy aiming to promote the development of bilateral commercial relations and protect the commercial interests abroad. As Carron de la Carrière (1998) states just at the beginning of his renowned work: *‘la diplomatie économique était autrefois tout simplement une diplomatie commerciale’*. We may find several similar statements commenting on importance of cross-border entrepreneurial relations in diplomacy and vice versa elsewhere: commerce was *‘a traditional interest of diplomacy’* (Barston, 2006) and *‘the importance of diplomacy for business has always been emphasised’* (Hamilton and Langhorne, 1995).

Slovak school of economic diplomacy based on works by Tóth (1994), Tóth and Horváthová (2006) or Csabay (2019) tends towards a narrower definition of economic diplomacy as a specific type of civil service, activity of state bodies responsible for international economic relations and their representatives in representing the country vis-à-vis other countries focusing on the achievement of goals and tasks of the country’s external economic policy through negotiations and by other legitimate means. With a general approach of this paper established by the before-mentioned definition we abstract from authors dealing with specific sectoral types of economic diplomacy, e.g. commercial diplomacy, trade diplomacy, investment diplomacy or innovations diplomacy (i. a. van Bergeijk, 2009, Ruël, 2012, Naray, 2008 and others) in further discussion due to the limitations of this paper.

3. ROLE OF INFORMATION IN ECONOMIC DIPLOMACY

As already indicated in the text above, the core of diplomatic activities resides in areas related to information and their processing. The mandate in this regard can be found in the wording of the Article 3 of the Vienna Convention on Diplomatic Relations from 1961, which states that the functions of a diplomatic mission consist, inter alia, in:

- a) Representing the sending State in the receiving State;
- b) Protecting in the receiving State the interests of the sending State and of its nationals, within the limits permitted by international law;

- c) Negotiating with the Government of the receiving State;
- d) Ascertaining by all lawful means conditions and developments in the receiving State, and reporting thereon to the Government of the sending State;
- e) Promoting friendly relations between the sending State and the receiving State, and developing their economic, cultural and scientific relations.

Especially the third, fourth and eventually the fifth point shall be regarded as the ground for gathering, processing and presenting of information of various kind related to inter-state relations. Information exchange is the essence of cooperative behavior in international relations materialized in existence of diplomacy. With regard to economic diplomacy this stands in no lesser extent than it is valid for political diplomacy.

Cooperative behavior exercised by economic diplomacy may acquire various forms: it can be observed in networking and liaising activities of diplomats, consultations, negotiations, reporting, creation of informal and binding regulations, etc. Networking of diplomats is a major vehicle of economic diplomacy, providing room for getting and keeping in contact with partners as well as exchanging information. Moreover, networking is a way of informally influencing the decisions made by partners and building positions for negotiations that might follow. Progress in promoting economic interests and addressing the issues resulting from economic relations between countries is made rather by applying cooperation methods than by applying a confrontational approach (Csabay, 2014).

The use of information in economic diplomacy on both macro (i.e. affecting the business environment like setting rules and regimes, negotiating treaties) and micro (i.e. affecting the individual companies or business cases) levels of action is similarly variable as the mentioned forms of diplomatic activity. It spreads from a simple transfer of raw information eventually even to a sophisticated consultancy, in particular it may receive a form of:

- Providing information;
- Promoting the country, industry or a particular company;
- Promoting the cooperation between businesses and matchmaking;
- Negotiation, lobbying, problem solving and conflict resolution including dispute settlement;
- Advisory and consulting services to government, industries or individual companies;
- Education and training.

In particular, the use of information related to different areas of action exercised by economic diplomacy is more closely explained in *Table 1*.

Table 1. Use of information in various areas of diplomatic action

| Area of Action | Role of Economic Diplomacy |
|--------------------|--|
| Reporting | Providing up-to-date, detailed, timely and accurate information for relevant recipients on macro and micro levels that is necessary for the success of external economic operations. |
| Promotion | Nation branding and creating goodwill and positive image of the country or industry. Organising national or industrial presentations and providing support and assistance for companies at international fairs and exhibitions abroad. |
| Cooperation | Matchmaking and promoting of other means of contact development, organizing business missions, economic workshops, negotiating and assisting in negotiations, organizing and participating in social events, diplomatic entertaining. |

| Area of Action | Role of Economic Diplomacy |
|--------------------|--|
| Negotiation | Negotiation in the narrow sense, exercising influence on the decision-making process of relevant foreign institutions in order to achieve or enhance benefits in accordance with the country's economic interests, solving of problems in economic relations, dispute settlement and conflict resolution in general on both macro- and micro-economic level. |
| Consulting | Providing advice on specific questions of external economic relations on both macro- and micro-economic level, incl. advisory and consultancy to government bodies, industries, providing basic advice to companies in the process of establishing and developing business abroad, etc. |
| Education | Participation in territorially focused business seminars and training of diplomatic staff. |

Source: author

4, INFORMATION PROCESSES IN ECONOMIC DIPLOMACY

The prevailing part of diplomatic activities in the field of economic diplomacy - whether protection of state economic interests, representation and representation of the state, preparation of negotiations and negotiations with foreign partners, creation of international regime and rules, lobbying, conflict and problem solving, promotion, training activities, counseling and messaging - they take place within two basic and traditional categories of diplomatic activities that are closely interrelated: networking activities (or liaising) and reporting activities (or intelligence).

Diplomatic networking can be described as a contact with foreign and domestic partners, which are relevant for the fulfillment of the objectives of economic diplomacy. Exercising economic diplomacy in a foreign territory usually requires meeting with three categories of partners:

- officials and public servants of the receiving state,
- members of the diplomatic corps in the country of accreditation,
- representatives of the private (business) sphere.

Within the diplomatic mission, there is a natural division of labor between its members, depending on their status. Part of the networking activity of economic diplomacy is covered by the head of the mission (ambassador), e.g. in relation to the heads of state or government and members of the government. Lower levels shall be covered by delegated staff, either in their particular capacity giving them responsibility for a certain area of economic affairs or based on an instruction from the head of the mission. In addition to obligatory contacts with representatives of ministry of foreign affairs of the receiving state, the former case includes mostly representatives of economic ministries, specialized government agencies (trade promotion organizations, export credit agencies, etc.), customs authorities, standardization bodies and other relevant institutions. Representatives of international economic organizations may also be included in this category.

The partners in the accredited diplomatic corps are, according to the appropriate level, the other heads of diplomatic missions or economic diplomats. Partners from the private sector form a relatively heterogeneous group, ranging from business associations and economic, industrial or trade chambers through financial institutions, economic think-tanks, exhibition centers, convention centers and media companies to individual entrepreneurs active in business with the diplomat's home country.

Networking activities take place in formal environments such as meetings, workshops, conferences, seminars, exhibitions, etc., but also in informal social events, which are inherently part of diplomacy.

An important point is that a similar extent of contacts must be developed by economic diplomacy not only in the country of operation, but also at home in the sending state since both represent a source of impulses for its activities and – more importantly – a list of potential recipients of its outputs.

Establishing contacts in the three above-mentioned categories is one of the primary tasks that an economic diplomat must master. Contacts represent a primary, although not the only, source of information for an economic diplomat. The second main source is data and information contained in political and analytical documents, registers and databases. Since diplomacy as such, including its economic branch, is a system of handling information, together these two source groups represent inputs into the information processing (see *Figure 1*).

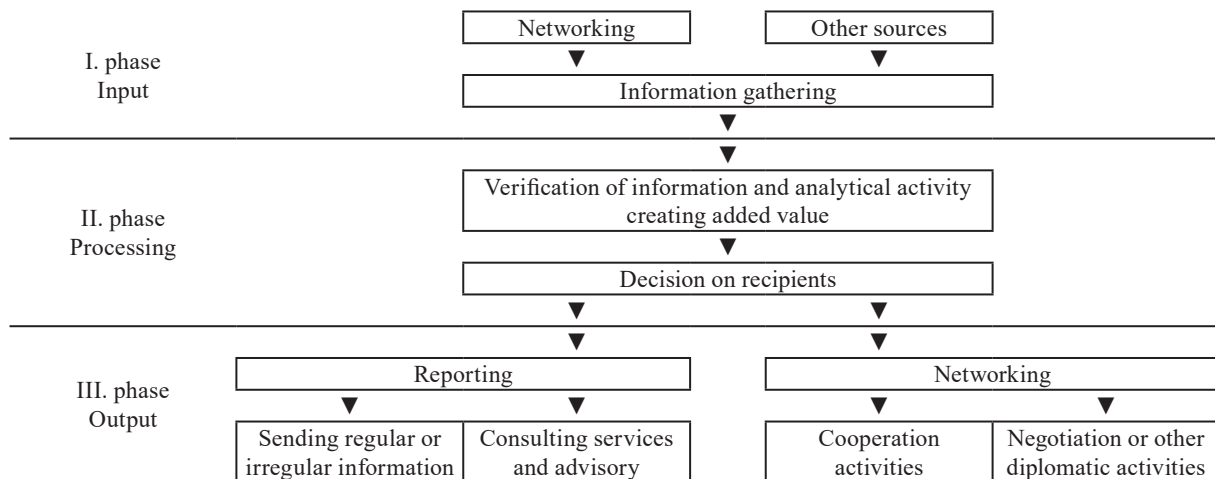


Figure 1. Economic Diplomacy as an Information Process

Source: author

The information process takes place according to the instructions that economic diplomacy fulfills in the territory of accreditation. Instructions set out the priorities that individual actors in foreign territories pursue - in some cases it may be a search for business or investment opportunities, in others, an establishment of a trade regime or other economic cooperation.

The first phase of the information process includes the collection of information from networking and other sources, i.e. it takes place as part of a routine activity, which is normally carried out by economic diplomacy in accordance with the instructions sent. The information process can also be initiated by a specific impulse from the domestic environment, either from the management department or from the business environment, from which economic diplomacy receives an inquiry. The range of information obtained by economic diplomacy is very diverse - from information on economic developments in the territory, on market developments, on prepared or implemented economic policies, changes in business legislation, through customs information, technical standards, sanitary and phytosanitary norms, import rules, demands and supplies, all the way to requests to verify information about potential and existing business partners.

The second phase is the process of verification and analytical evaluation of obtained information. While the first phase places requirements on the economic diplomat with regard to his / her communication and social skills, the second phase requires the ability of analytical and critical evaluation of the obtained information in relation to its content and source, and thus verification of its relevance, completeness, truthfulness and credibility. The aim of the analytical activity is to create added value resulting from the local expertise of the diplomat. On this basis, it is

possible to make a decision on possible recipients of the information, unless they are determined on the basis of the instruction.

The list of recipients may include the head of the mission, headquarters (the respective ministry, its responsible managing unit or territorial desk), other state institutions or private sector entities. In the case of a decision on recipients of information containing business opportunities obtained by economic diplomacy through its own initiative (it means when not responding to a particular request from a particular company), transparency and equal opportunities between potential business beneficiaries must be strictly maintained. The usual procedure in such a case should be, if circumstances allow it, to give the information to a representative business association or a chamber rather than directly forward it to a particular entrepreneur.

The outcome of the information process is intelligence activity – reporting by means of sending regular and irregular information to the headquarters or to a designated recipient. The intelligence activity of economic diplomacy results either from the requirements defined in general instructions, or from the *ad hoc* requirements from the managing department or the business sphere, or – eventually – from the findings gathered on its own initiative. Regular reports include annual surveys of economic developments in the country or countries of operation, updates of the territory's basic information or an overview of major economic events (such as trade fairs, contracting B2B and B2G events, innovation and investment conferences, etc.). Irregular reporting includes i.e. information relevant for visits and negotiations by state officials and other information based on the requirements of state institutions as well as any business-related information intended for the private sector. In most cases, the output is either in form of sending information for further processing by the recipient or in form of formulating recommendations to the state authorities or consultancy services to the business sphere.

An alternative outcome of the information process is the follow-up networking in the form of cooperative events of different nature for state or private participants, eventually continuation of negotiations or other diplomatic activities in the never-ending cycle of gathering, processing and sending information through economic diplomacy as a negotiating arm of the state while fulfilling the tasks and objectives of the external economic policy.

5. FUTURE RESEARCH DIRECTIONS

The aim of the paper represented at the same time its most significant limitation – by describing the theoretical framework of the processing of information within and by the economic diplomacy it omitted a deeper analysis of its practical application. At the same time, this defines the area for possible future research of this topic e.g. by means of comparative analysis of practical application of various information processes and management of information flows in different national systems of economic diplomacy.

6. CONCLUSION

Economic diplomacy, as well as diplomacy in general, relies significantly on accurate, timely and exact information. Diplomacy is by its nature a mediator and processor of information. It collects and distributes information while exercising its tasks as an observing, negotiating and reporting arm of the government abroad. The article 5 of the Vienna Convention on Diplomatic Relations, which defines the functions of the diplomatic mission, forms the ground for gathering, processing

and presenting of information of various kind related to inter-state relations. At the same time, we can state that information exchange is the essence of cooperative behavior in international relations.

The use of information in economic diplomacy on both macro (i.e. affecting the business environment like setting rules and regimes, negotiating treaties) and micro (i.e. affecting the individual companies or business cases) levels of action spreads from a simple transfer of raw information to a sophisticated consultancy, which may receive a form of providing information; promoting the country, industry or a particular company; promoting the cooperation between businesses and matchmaking; negotiation, lobbying, problem solving and conflict resolution including dispute settlement; advisory and consulting services to government, industries or individual companies; or even education and training.

As described in the last part of the paper, information management within the economic diplomacy takes place in three phases – information gathering from networking and other sources as an input into the system, information processing including the verification, evaluation and analysis of gathered information and reporting to various recipients from both public and private sector or other diplomatic activity as an output.

ACKNOWLEDGMENT

This research was supported by the Grant Agency Academia Aurea [GA/7/2019].

REFERENCES

- Barston, R. P. (2006). *Modern Diplomacy*. Harlow: Pearson Education
- Bayne, N. & Woolcock, S., (2004). *The New Economic Diplomacy: Decision Making and Negotiation in International Economic Relations*. Hampshire: Ashgate
- Van Bergeijk, P. A. G. (2009). *Economic Diplomacy and the Geography of International Trade*. Cheltenham: Edward Elgar Publishing Limited
- Carron de la Carrière, G. (1998). *La diplomatie économique: le diplomate et le marché*. Paris: Economica
- Csabay, M. (2014). Export-Promoting Policy and Economic Diplomacy: Contemporary Concepts and Instruments. In: Sipko, J., Dudáš, T. & Csabay, M. (2014). *International Economics and Finance*. (pp. 82-149) Praha a Bratislava: Wolters Kluwer
- Csabay, M. (2019). *Ekonomická diplomacia. Teoretické východiská, riadenie a prax v medzinárodnom podnikaní*. Bratislava: Wolters Kluwer
- Hamilton, K. & Langhorne, R. (1995) *The Practice of Diplomacy*. London: Routledge
- Naray, O. (2008). *Commercial Diplomacy: A Conceptual Overview*, 7th World Conference of TPOs, The Hague
- Okano-Heijmans, M. (2011). Conceptualizing economic diplomacy: the crossroads of international relations, economics, IPE and diplomatic studies. In: *The Hague Journal of Diplomacy*, Vol. 6, No. 1, pp.7–36
- Ruël, H. (Ed.). (2012). *Commercial Diplomacy and International Business. A Conceptual and Empirical Exploration*. Bingley: Emerald Group Publishing Ltd.
- Tóth, Ľ. (1994). *Protokol a etiketa v diplomacii a obchode*. Bratislava: THB
- Tóth, Ľ. & Horváthová, K. (2006). *Hospodárska diplomacia*. Bratislava: Sprint
- Woolcock, S. (2013). Economic Diplomacy. In: Kerr, P. & Wiseman, G. (Eds.): *Diplomacy in a Globalizing World. Theories and Practices*. (pp. 209-225) Oxford: Oxford University Press

WORLD BANK IN THE WORLD'S ECONOMY

Irena Andreeska¹

DOI:

Abstract: *The World Bank is one of the largest world's resources for financing the countries in development, whose main target is helping poor countries with the use of their financial resources and large experience. In today's world there are at the same time very rich and very poor and the challenge for reducing poverty is very big. The World Bank works on going through these differences by helping the governments of the member countries in their intentions to invest into education and health centers, to provide water and electrical energy, as well as on the fight against illnesses such as AIDS and malaria, protection of living environment and providing a decent life standard. Financial help from World Bank for the Republic of North Macedonia provided realization of line of activities as well as continuing of international liquidity of the country.*

Keywords: *World Bank, Developed Countries, International Monetary Fund, Financial Transactions, Economic Growth.*

1. INTRODUCTION

The World Bank is a world-class organization focused on social and economic growth and has invested hundreds of billions of dollars in developing countries. The World Bank promotes development through access to information resources, advisory services, concessional lending to poor countries, private sector loans, targeted investment funds, microcredit, development initiatives, investment insurance and international arbitration regulations. The core mission of the World Bank is to: support the economic and social progress of developing countries, so that their people can live a better and more fulfilling life. On average, annually, the Bank lends approximately \$18 billion to the governments of about 80 developing countries to support more than 225 projects. In addition to loans, the Bank offers technical assistance and government policy advice.

«Our dream is a world without poverty» is the primary motto of the institution that speaks of a better tomorrow, promising better education and a better life in general.

The subject of explicit elaboration here will be the World Bank, relations with its sister institution - IMF, analysis of activities in developing countries and the most important segment - credit arrangements that the Republic of Macedonia has established with the World Bank.

2. INTERNATIONAL MONETARY FUND VERSUS WORLD BANK

The Bretton Woods institutions, collectively referred to as the International Monetary Fund and the International Bank for Reconstruction and Development. The World Bank, was created in 1944 to maintain international liquidity and restore the system of convertible currencies. The international financial community has imposed primary responsibility to the World Bank for

¹ Komercijalna banka AD Skopje, Orce Nikolov 3, 1000 Skopje, PVPU Euro College Kumanovo, North Macedonia

financing economic development. The Bank's first loans were intended to finance the rebuilding of Western Europe's war-torn economies. When the goal was met, attention was directed to helping poor countries around the world.

The International Monetary Fund and the World Bank are not affiliated in any formal way, but often coordinate economic activities in the targeted regions.

The key differences between the International Monetary Fund and the World Bank are shown in the following comparative analysis:

Table 1. Features and Objectives of the World Bank and International Monetary Fund

| World Bank | International Monetary Fund |
|--|---|
| Promote economic development of poor countries in the world. | Promote a global agenda for maintaining international monetary stability. |
| Special financial assistance through the International Development Association (IDA) for poor countries with a GDP per capita of less than \$865 per year. | Assistance to all Member States - developed and developing countries - who are temporarily facing balance-of-payments problems. |
| Encouraging private enterprises in developing countries through the activities of the International Finance Corporation (IFC). | Replenish Member States' currency reserves by allocating special drawing rights in proportion to their quotas. |
| Financial resources acquired through lending on the international bond market. | Financial resources provided on the basis of paid quota of Member States. |
| It owns authorized capital of \$ 184 billion, of which member states pay about 10%. | Owns fully available quota of 145 billion SDR (about \$ 215 billion). |
| 7000 employees from 181 Member States. | 2300 employees from 184 Member States. |
| The President of the Bank is always a US citizen. | The IMF President is a citizen of one of the Western European countries |
| Priority goals: | Priority goals: |
| Investing in human capital by increasing the amount of investment in education. | Consultations and cooperation between Member States to resolve international monetary problems. |
| Supporting social development and institution building as key elements of poverty reduction. | Encourage balanced growth in international trade with a goal to achieving high employment rates, real income growth, and productive resource development. |
| Increasing the ability of government bodies to provide quality, efficient and transparent services. | Exchange rate stability and avoiding competitive currency depreciation. |
| Supporting private business development. | Multilateral system of international payments, in order to avoid foreign exchange restrictions. |
| | Short-term financial resources to correct short-term disturbances in the balance of payments. |

Source: William A Delphos: Inside the World Bank, Washington, 1997, page 28

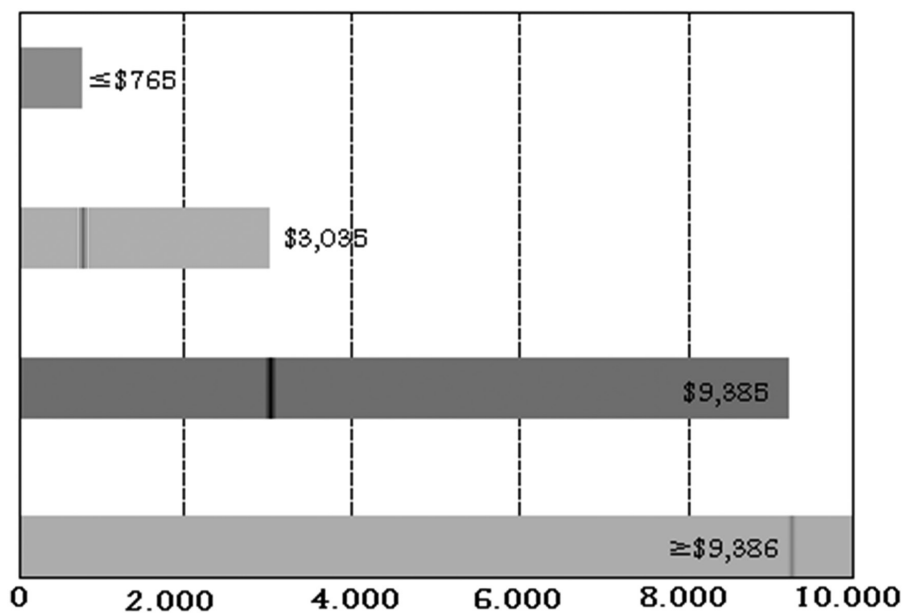
These two institutions, often equated by the public, are obvious contrasts that highlight differences in their cultures, styles and missions: one is dedicated to eradicating poverty and the other to maintaining global stability. Unlike the IMF, which sends its resident representative to developing countries, a significant portion of the World Bank staff lives permanently in the country they are trying to help.

2. WORLD BANK ACTIVITIES IN DEVELOPING COUNTRIES

According to the set criteria of the World Bank, national economies are classified into three groups: low developed, middle developed and highly developed economies. Underdeveloped and mid-developed economies are often referred to as developing economies (developing countries). The terms industrialized or developed refer to states whose economies are highly developed. This classification, statistically expressed in accordance with the projections for the average annual GDP per capita by country, implies:

- \$ 765 for low-income countries,
- From \$ 766 to \$ 3,035 for middle- to low-income countries,
- From \$ 3,036 to \$ 9,385 for intermediate - advanced countries,
- \$ 9,386 for highly developed countries.

The graphic story of the World Bank's average GDP per capita by individual countries is as follows:



Graph 1: Classification of countries according to level of development

Source: The World Bank: Getting to know the World Bank, Washington D.C. page 42

The main question in which group from the presented graphical classification according to the degree of development would appear the states as Indonesia, Bangladesh, Slovenia and Croatia?

The answer would be: Indonesia and Bangladesh as representatives of certain poor regions of East and South Asia are classified in the group of underdeveloped countries, Croatia and Slovenia of the region of Europe are ranked as follows: Croatia in the group of middle-to-low developed with intension to middle to high developed countries and Slovenia in the group of medium-high-developed countries.

The Bank's loans are usually approved with a repayment period of 20 years and a grace period of 5 years from the date the loan is used.

In order to increase the volume of funding for less developed countries, the Bank began co-financing various projects in the mid-1970s. It co-finances with public national and international development agencies, commercial banks and other development financing institutions.

3. THE RELATIONS OF THE REPUBLIC OF NORTH MACEDONIA WITH THE WORLD BANK

The Republic of North Macedonia belongs to the group of middle-low-developed countries according to the average per capita income of \$ 2,380 per year. It is located at the junction crossing important transport routes linking Central and Eastern Europe with South and South-east Europe. The small territory, the relatively high degree of economic openness (foreign trade accounts for 90% of GDP), surrounded by neighboring countries make the country susceptible and vulnerable to external influences that are particularly relevant.

The state has had a long transition from a centrally planned to a market economy, with efforts for economic reform in many sectors often interrupted. The primary objective of the Republic Macedonia is to become a member of the European Union (EU). It was the first country to sign a Stabilization and Association Agreement with the EU in April 2001, and was granted candidate status in November 2005.

With the Republic of Macedonia's membership in the World Bank in 1993, and meeting all the necessary requirements, the World Bank Board of Directors provided realization of many projects intended for private sector development, infrastructure improvement and providing social welfare in the country.

By analyzing the Republic of North Macedonia's established arrangements with the World Bank and the country's economic growth projections with financial assistance from the Bank, we will recognize its particularly important role in stimulating the functioning of crucial sectors.

4. CONCLUSION

The World Bank Group today represents one of the most significant sources of international financial support for development. Its primary task is to provide a combination of funds and ideas to improve living standards and eliminate poverty in the many developing countries in which it operates. The conditions under which Bank loans are approved are extremely favorable, and no developing country could obtain a loan under these terms from any other financial institution, especially those held by private equity. The Bank is not tasked to finance the development of developed countries, but to provide loans to countries in those regions that do not have the economic capacity to withstand borrowing under the usual conditions of the international capital market, nor have the bargaining power to obtain favorable loans from well-known financial institutions.

Despite significant World Bank engagement, the world is still far from overcoming the problem of poverty, given that about 3 billion people on the planet survive on less than \$ 2 a day and about 1.2 billion on less than \$ 1 a day.

The Republic of North Macedonia is in a phase of economic development which requires cooperation with the World Bank.

The arrangements the Republic of North Macedonia has with the World Bank are financing structural reforms that have had long-term results.

More significant reforms have been made towards achieving macroeconomic stability, maintaining a stable exchange rate, reducing the budget deficit, building a modern legislative framework, promoting the private sector, establishing a social protection system, creating effective banking regulation, of the privatization process.

The economic policies and reforms implemented in cooperation with the World Bank should be consistent with the reforms and policies of convergence and integration into the European Union, as a long-term strategy of the Republic of Macedonia.

REFERENCES

- Irena Andreeska, Doctoral dissertation, The global financial architecture and the phenomenon of poverty, St. Cyril and Methodius, 2010, Skopje
- Biljana Sekulovska-Gaber: International Organizations and Integrations, Faculty of Economics, Skopje, 2003
- Irena Kikerkova: International Economics, Faculty of Economics, Skopje, 2003
- Todor Todorov, Armen Kadriovski: International Economics, Skopje, 2006
- Todor Todorov, Dimo Dimkov: International Management, Faculty of Economics, Prilep, 2001
- Branislav Pelevic: International Economic Relations, Faculty of Economics, Belgrade, 1999
- Alan M. Rugman and Alain Verbeke: Global Corporate Strategy and Trade Policy, London and New York 2003

SILICON SAVANNAH – INNOVATION ECOSYSTEMS OF AFRICA WITH A SPECIAL REGARD TO KENYA

Szabolcs Szolnoki¹
Árpád Papp-Váry²

DOI:

Abstract: *In Africa, where 60% of the population is under 25 years, the enormous and diverse business environment suffers from a number of problems, ranging from access to funding to gaps in government support and weaknesses in the education system. Undoubtedly, there is the need for better governance among the continent's nations in order to catch up and to develop creative economies with high added value products. Considering Kenya, the information and communication industry can be a breakthrough point thanks to positive, "enabler regulation" and governmental support. The authors believe that the IT sector could serve as an "escape card" from the captivity of history and geography. Astonishingly, 85% of the population is employed in agriculture while the country is called "Silicon Savannah". 43 financial institutions, around 1000 startups and an emerging FinTech ecosystem can be identified with several dominant Chinese and Indian corporates. Furthermore, Google, IBM and other tech multinationals are also present. IBM opened its 12th development center in Nairobi, Kenya's capital found in 1899 with a current population of 5.6 million. Large technology companies are promoting business and idea competitions across the continent in the field of internet and communication technologies. Since half of the 580.367 km² country is arid or semi-arid, the Kenyan market is also interesting for foreign AgriTech companies besides the IT industry. It is indisputable that large companies cannot replace the government in creating the basis of a prosperous business environment, nonetheless they do have a beneficial effect on the building of networks and providing opportunities for ideas to emerge. Universities can achieve similarly positive results. The Stanford alumni network has already been successful in Africa. By the coordinated activities of former students outside California the organization creates jobs, generates revenue, and has a positive social impact. Kenya has undergone significant political, structural and economic reforms over the past decade, largely contributing to sustainable economic growth and social development. The August 2010 Constitution introduced a new system of political and economic governance that promoted a greater level of investments, strengthened accountability and the development of local public services. Forecasts for the near future show that GDP growth is expected to rise to 5.8 percentage points in 2019, supported by a boom in agriculture, a more favourable business climate and a reduction of political uncertainty. In the medium term, GDP growth is projected to 6% in 2020, depending on private sector credit growth, ongoing remittances, debt and expenditure management and global oil prices. However, the main challenges are still poverty, inequality, climate change, economic exposure and vulnerability to internal and external shocks. Kenya has every chance of becoming a success story for Africa through its growing young population, dynamic private sector, highly skilled workforce, better infrastructure, new constitution and central role in East Africa. Key economic and social goals include reducing the poverty rate and inequality, improving governance, creating cohesion between market needs and educational curricula, adapting to climate change, achieving rapid and sustained growth in investment and corporate productivity.*

Keywords: Kenya, African Startups, Innovation, Startup Savannah.

¹ University of Pécs, Pécs, Ifjúság útja 6, 7624 Magyarország, Hungary

² Budapest Metropolitan University, Budapest, Nagy Lajos király útja 1-9, 1148 Magyarország, Hungary

1. KENYA IN THE 21ST CENTURY – DEVELOPMENT GOALS

The eighty-five percent of the population works in agriculture; smallholder farming is widespread. Half of the country lies in an arid or semi-arid area, therefore advanced irrigation technologies, agricultural training programmes, organic products and materials, machines and equipment facilitating water retention offer a good opportunity to enter the Kenyan market – nevertheless, European and non-European competitors are also present.

Forty-three financial institutions are registered in Kenya; therefore, it is also called Silicon Savannah. There are more than 1000 operating start-up enterprises and the FinTech (financial technology) industry plays a prominent role. The field is dominated by Chinese and Indian companies, but Google, IBM and other multinational IT companies are also present. IBM opened its 12th development centre in Nairobi, the capital of Kenya, founded in 1899, with a current population of approximately 5.6 million people. Google is active in Kenya and Northern Africa as well. Large technology enterprises in the field of internet and communication technologies announce business and idea competitions all around the continent. Large enterprises cannot perform governmental tasks required for the development of the business environment, but they do have a beneficial effect on the creation of a network of connections, giving room to the unfolding of ideas. Universities may achieve similarly positive results. For example, the cooperation of former students in the framework of the Stanford alumni network creates jobs, generates incomes and has a positive social impact outside California, and they have implemented successful projects in Africa as well.

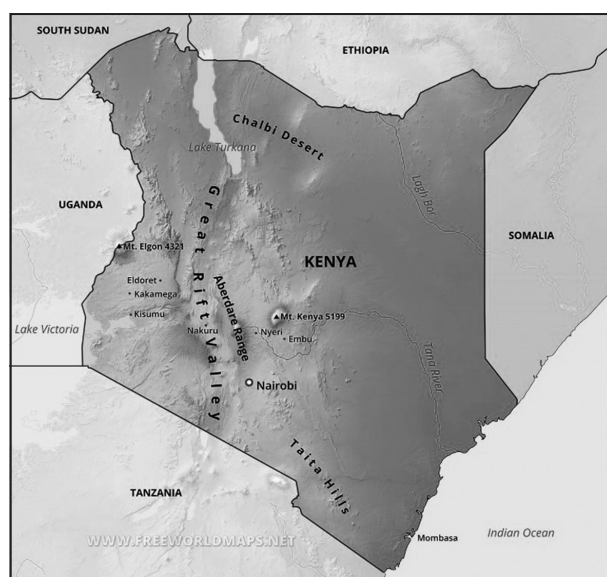
Kenya has also implemented significant political, structural and economic reforms in the past decade, which mostly facilitated sustainable economic growth and social development. However, the most important challenges are still poverty, inequality, climate change and the exposure of the economy, its vulnerability by internal and external shocks.

Kenya's recent political reform originates from the adoption of the new constitution in 2010, which introduced bicameral legislature, decentralised county government, and judicial and electoral bodies authorized by constitution. As a result of the latest presidential election on 17 October 2017, President Uhuru Kenyatta started his second and final five-year term on 28 November 2017.

The constitution of August 2010 introduced a new system of political and economic governance with the aim of facilitating bigger investments, strengthening accountability and the building of public services at the local level.

While economic activity deteriorated after the 2008 global recession in economy, growth has gained new momentum in the past five years, reaching 5.7 percentage points in 2018. Economic growth has been facilitated by a stable macroeconomic environment, low oil prices, the boom of tourism, remittances and the government-led infrastructural development initiative.

According to forecasts for the near future, the increase of the gross domestic product (GDP) is expected to increase to 5.8 percentage points in 2019, which is fuelled by the boom of agriculture, a more favourable business climate and easing political uncertainty. In the medium term, the growth of the GDP must increase to 5.8 percentage points in 2019 and 6 percentage points in 2020, which depends on private sector credit growth, increasingly strengthening remittances, the management of public debt and spending, and global oil prices.



General information

Capital city: Nairobi

Area: 580.367 km²

Population: 44,4 million people

Currency: Kenyan shilling (KES)

Languages: Swahili, English

Figure 1: A map of Kenya. Source: Free World Maps

In the long term, the adoption of prudent macroeconomic policies helps to preserve Kenya's robust economic performance. This includes fiscal and monetary prudence and the reduction of the deficit to 4.3 percentage points for 2019/2020 according to the Medium-Term Expenditure Framework. The consolidation of the budget must avoid jeopardising state investments into critical infrastructure and economic production capacities.

Table 1. The most important economic indicators

| Name of indicator | Unit of measurement | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---------------------|--------|---------|---------|---------|---------|---------|
| Value of GDP (current price) | Billion EUR | 100.22 | 107.83 | 115.64 | 123.58 | 132.50 | 141.48 |
| Change of GDP (real) | % | 4.56 | 5.88 | 5.36 | 5.72 | 5.87 | 4.89 |
| Per capita GDP at current prices | EUR/capita | 999.07 | 1064.80 | 1156.65 | 1173.91 | 1267.01 | 1306.26 |
| Inflation (HICP) | % | 9.38 | 5.72 | 6.88 | 6.58 | 6.30 | - |
| Unemployment rate | % | - | - | - | - | - | - |
| Export value | Billion EUR | 9.71 | 9.51 | 9.74 | 9.20 | 8.58 | 9.04 |
| Import value | Billion EUR | 15.52 | 15.85 | 17.57 | 15.31 | 13.99 | 16.53 |
| FDI outflow | Billion EUR | 0.21 | 0.17 | 0.07 | 0.21 | 0.14 | 0.22 |
| FDI inflow | Billion EUR | 1.20 | 0.97 | 0.71 | 0.54 | 0.34 | 0.58 |

Source: Export Hungary

The long-term development plan appears in the so-called "Vision 2030" document announced by the president in December. The four major development priorities are: manufacturing, universal health care, affordable housing and food security.

Kenya has already met certain objectives outlined in the Millennium Development Goals (MDG). The country has achieved results in the reduction of child mortality, increasing the enrolment ratio in primary education, and closing the gender pay gap in education. The state intervention and the increase in expenditure promise positive results in the fields of health care and education. The development of a fairer health care system is facilitated by decentralised health care and free birth mother care in all public health facilities.

Kenya has every chance of becoming one of Africa's success stories as a result of its ever-growing young population, dynamic private sector, highly skilled workforce, better infrastructure, new constitution and the country's central role within East Africa. The most important economic and social goals are: decreasing the poverty rate and inequalities, developing governance, creating cohesion between market demand and the curriculum of education, adaptation to climate change and achieving a rapid and sustainable increase in investment and the productivity of companies.

2. THE WORLD BANK AND KENYA

The strategy of the World Bank Group (WBG) in terms of Kenya is to support the government's "Vision 2030" strategy to eradicate extreme poverty and increase welfare among the whole society. The Country Partnership Strategy (CPS) FY14-18 was revised in June 2017 and focuses on the development of economic competitiveness and sustainability and the protection and assistance of vulnerable people. The CPS extended to 2020 expects 1 billion USD investment by the International Development Association (IDA), the International Bank for Reconstruction and Development (IBRD), the International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA).

IDA's current portfolio includes 35 projects with support totalling approximately 6.5 billion USD – this includes 28 national projects (5.3 billion USD) and seven regional projects (1.2 billion USD). The greatest investments are allocated for infrastructural developments, while the social sector takes the second place. Further fields supported through projects include agriculture; decentralisation; government; justice, law and order; disaster risk management; forced migration; private sector development; development of statistical capacity.

A few examples of projects accepted recently:

- Kenya Social and Economic Inclusion Project (250 million USD), providing support for poor and vulnerable households by facilitating their access to services and expanding their social safety net;
- Kenya Industry and Entrepreneurship Project (50 million USD), increasing the innovative capacities and productivity of Kenyan enterprises.

IFC's investment portfolio in Kenya amounted to 951.3 million USD on 30 June 2018. Seventy percent of this portfolio focuses on the financial sector, health care, manufacturing, services to farmers and infrastructural projects. IFC plans to improve the investment climate and provides expert advice especially in four priority areas announced by President Kenyatta: manufacturing, affordable housing, general medical care for everyone, food security. They would support access to financing, sustainable business activities, public-private partnerships (PPP) and the improvement of the investment climate by approximately 25.6 million USD.

In the framework of MIGA's portfolio, 148 million USD has been invested, providing financial resources for three projects launched in order to the private investments in the energy sector. In the near future, a major transport project worth approximately 1 billion USD and two energy sector developments are expected. MIGA works in close cooperation with a unit of the Ministry of Finance specialised in PPP matters in order to promote high priority projects, especially in the field of infrastructure development and housing.

3. KENYA NATIONAL INNOVATION AGENCY

Kenya National Innovation Agency (KENIA) is a state company that belongs to the Ministry of Education, and was established under the provisions of the Science, Technology and Innovation Act. The basic role of the Agency is to develop and manage Kenya's National Innovation System. The Agency is therefore responsible for the coordination, promotion and regulation of the national innovation ecosystem.

In accordance with government policies regarding the encouragement of innovation, entrepreneurship and self-sustaining economy, the Agency works on the embedding of scientific, technological and innovation management developments in the national production system. The Agency develops and manages the Kenya National Innovation System, thus institutionalising the relationship between universities, research institutes, the private sector, government and other sectors. It draws up national standards for innovation based on international best practices, and fosters innovative ideas created by individuals, educational institutions and the private sector.

Moreover, the Agency cooperates with other relevant institutions in the creation and regular updating of an innovational database. The Agency is also going to increase the investors' knowledge and consciousness regarding intellectual property rights, create and maintain an award system to reward the development of novel innovations in a presidential or other form, and become an executive of national innovation and trade policies. The Agency incubates innovation and development projects, creating synergies.

4. KENYA INDUSTRIAL RESEARCH AND DEVELOPMENT INSTITUTE (KIRDI)

The Kenya Industrial Research and Development Institute (KIRDI) is a state-owned company supervised by the Ministry of Industry, Trade and Cooperatives. Its task is to research and develop industrial and related technologies in a multidisciplinary way, including mechanics, electronics, chemicals, ceramics and building materials, food, leather, textile, ICT, environment and energy. The developed technologies are handed over to micro, small and medium enterprises and large enterprises to increase their competitiveness and productivity.

The aim of Vision 2030 is to make Kenya a newly industrialising middle-income country which will be able to provide all its citizens with a high standard of living in a clean and safe environment by 2030. In order to facilitate the implementation of the strategy, KIRDI's transformation into a world-class research organization was identified as one of the priority projects of the manufacturing sector. KIRDI's transformation into a world-class research organization involves the development of the research, technology and innovation ecosystem and the skills development of human capital (scientists and engineers).

Research, technology and innovation play a key role in the achievement of the four big objectives. The increasing of the added value can only be achieved through research, product development and the application of modern production technology. Increasing the share of manufacturing industry in the GDP largely depends on the productivity and competitiveness of manufacturing industry. Productivity and competitiveness mostly depend on the type and nature of applied technology. Food security and nutrition depends on agricultural productivity and post-harvest farming, which are also largely based on technology. It is necessary to decrease

the costs of agricultural and post-harvest machinery by producing them locally. The provision of affordable universal health care and national coverage largely depends on the availability and costs of diagnostic equipment and medicines. Producing diagnostic equipment and medicines locally increases costs, thus contributing to their availability and affordability. The provision of affordable housing mostly requires the use of innovative technologies that may decrease the costs of building materials. KIRDI develops value-added manufacturing technologies and forwards these to the SME sector. The transferred technologies increase the productivity and competitiveness of enterprises, thereby enabling them to grow, create jobs and increase their contribution to the GDP.

5. CHANDARIA BUSINESS INNOVATION AND INCUBATION CENTRE


The Centre aims to be an internationally recognised business innovation and incubation institution providing mentoring and encouragement for the students and employees of Kenyatta University and other Kenyan citizens, in order to make them the engine of economy and future employers.

The Chandaria Business Innovation and Incubation Centre (Chandaria-BIC) was launched in July 2011 with the mission of supporting Kenya's pioneering and innovative ideas. Its focus is to support 120 start-up enterprises each year (70% by Kenyatta University students and 30% by external applicants). Innovators receive important services such as business development consulting, initial capital, offices, phones, high-speed internet, stationery, administrative support, professional guidance and mentoring for 12 months with an extension option. They define various milestones for each enterprise selected for participation in the programme that they have to reach in order to receive further support.

REFERENCES

- Marshall, Tim (2018): A földrajz fogságában, Tíz térkép, amely mindent elmond arról, amit tudni érdemes a globális politikai folyamatokról ("Prisoners of Geography. Ten Maps That Tell You Everything You Need to Know About Global Politics"), Park, Budapest, ISBN: 9789633554111
- Pasquier, Martin (2013): Africa is the Future, but their Innovation Ecosystems Need Help, retrieved: 11.04.2019., <https://www.innovationiseverywhere.com/africa-future-innovation-ecosystems-need-help>;
- Külgazdasági és Külügyminisztérium, Külkereskedelmi Főosztály ("Ministry of Foreign Affairs and Trade, Department of Foreign Trade"), Export Hungary, retrieved: 13.04.2019, <http://exporthungary.gov.hu/>
- The World Bank In Kenya; retrieved: 15.04.2019., <https://www.worldbank.org/en/country/kenya/overview>
- Kenya National Innovation Agency website, retrieved: 18.04.2019., <http://www.innovationagency.go.ke/>
- Kenya Industrial Research and Development Institute (KIRDI) website, retrieved: 19.04.2019., <https://www.kirdi.go.ke/>
- Chandaria Business Innovation and Incubation Centre website, retrieved: 19.04.2019., <http://www.ku.ac.ke/chandaria-biic/>
- Kenya Physical Map, Free World Maps, retrieved: 19.04.2019., <http://www.freeworldmaps.net/africa/kenya/map.html>

APPLICATION OF NEW INFORMATION AND TELECOMMUNICATION TECHNOLOGIES IN RUSSIAN EDUCATIONAL MANAGEMENT

Evgeniya Yazovskikh¹ 
Oksana Yatsenko²

DOI:

Abstract: *According to the state program “Information Society (2011-2020)”, one of the priority areas in Russia is to improve the quality of education based on information technologies.*

After adopting the new federal law “On Education in the Russian Federation”, the development of new information and telecommunication technologies has become an urgent need. The law specifies the rules that allow educational institutions to use e-learning, distance learning technologies, and a network form for implementing educational programs. New information technologies in education have launched new opportunities: self-study, distance learning, tutoring, consulting, coaching.

Modern globalization of higher education, a two-tier system, the standards of the third generation and three plus actualize the problem of ensuring the quality of education, forming for the graduates a pool of competencies that meet the challenges of the labor market. The problem of the quality of training bachelors and masters, their postgraduate employment is of particular importance in connection with the orientation of educational institutions to the practical implementation of acquired competencies.

Keywords: *Information Technologies, Educational Management, Telecommunication Technologies, Web-Quest.*

1. INTRODUCTION

At present, the role of information technologies in people’s lives has significantly increased. Modern society is involved in the general historical process, called informatization. This process includes the accessibility of any person to information sources, the penetration of information technologies into scientific, industrial, public spheres, a high level of information services.

The processes occurring in connection with informatization of society contribute not only to the acceleration of scientific and technical ones, intellectualization of all types of human activity, but also the creation of a qualitatively new information environment of the society that ensures the development of human creative potential.

One of the priorities of modern society is informatization of education, which is a system of methods, processes, software and hardware tools integrated to collect, process, store, distribute and use information in the interests of its consumers. The purpose of informatization is the global intensification of intellectual activity through the use of new information technologies: computer and telecommunication.

¹ Ural federal University named after their first President of Russia B.N.Yeltsin, Mira str. 19, Yekaterinburg, 620002, Russia

² Ural federal University named after their first President of Russia B.N.Yeltsin, Mira str. 19, Yekaterinburg, 620002, Russia

According to Gorbunova and Subbotina (2013), information technologies provide the following opportunities: organizing the rational cognitive activity of learners during the educational process; making students study more effectively by involving them in a multimedia context and arming their intellect with new conceptual tools; building an open education system that provides each individual with their own learning path; involving in the process of active learning categories of students who differ in their abilities and learning style; using specific properties of the computer that help individualize the learning process and turn to fundamentally new cognitive tools; intensifying all levels of the educational process.

Altinentova and Rozhko (2016) confirm that computer technologies are designed to become an indispensable part of a holistic educational process that significantly increases its efficiency. As most researchers point out, the trends towards computerization of education will accelerate regardless of conditions.

Krasovskaya and Isaberova (2017) declare that today, the Ministry of Education of the Russian Federation pays great attention to informatization of the educational process, since the use of information technologies significantly increases the number of pedagogical teaching methods for students. In 2002, the Ministry of Education of the Russian Federation developed "The draft federal component of the state educational standard of general education in computer science and information technology".

Informatization of the educational space also determines the new approach to the organization of the educational process, to the methodological and didactic support. New methods and means of developing media education and information culture of students are needed.

A generation of Dot Com students has already been formed, for whom the perception of audio-visual information is more common than the printed one. Former readers gradually transformed into viewers with clip thinking.

Students often use Internet resources only by copying ready essays and course papers. Passive perception of information, consumer attitude to the media, plagiarism of texts, form stereotypical thinking, distorted outlook.

As Polat (2017) says: "For the development of a moral, creative, self-minded person, not only a much larger amount of information than that a teacher, a textbook, and teaching aids can provide, but a large variability of information, reflecting different points of view, different approaches to solving the same problems is required".

Modern educational practice requires the use of various methods of working with the information and communication environment. First of all, these are tasks for independent work of students based on Internet resources: a thematic list of references (Hotlist), a multimedia album (Multimedia Scrapbook), a collection of examples (Subject Sampler), a treasure hunt (Treasure / Scavenger Hunt).

A new format of textbooks for students, Smart textbooks is needed today. The problem of a "new generation textbook" as a means of increasing the effectiveness of training students, enhancing independent work through improvement in the comprehensibility of educational materials, and the ergonomic quality of educational material in recent decades has been intensively

discussed in the pedagogical literature. Particularly relevant is the availability of such textbooks in universities where the integration of science and education takes place (Novikova, 2018).

One of the current and more complex working methods of students with Internet sources is a Web Quest. The concept of web quests was developed in the United States at the University of San Diego in the mid-1990s by professors B. Dodge and T. March. A web quest is the most difficult for both students and teacher.

The web quest is aimed at developing students' skills of analytical and creative thinking. A teacher who develops a web quest should have a high level of subject, methodical, and informational and communication competence.

As a part of the learning process, the topic of web quests can be diverse, problem tasks can be differentiated by degree of difficulty. The results of the web quest, depending on the material being studied, can be presented in the form of a web page, computer presentation, video journals, case study, essay, poster presentation, publication, and presentation at a conference.

A web quest is an educational website, a project dedicated to the independent research work of students (usually in groups) on a specific topic with references to various web pages. Its structure consists of several required sections:

1. introduction (theme, relevance and value of the project);
2. task (goal, objectives, conditions, problem and their optimal solution);
3. process (phased description of the work process, distribution of roles, responsibilities of each participant, Internet references, final product);
4. assessment (scale for self-assessment and evaluation of the work of group members, assessment criteria developed by the teacher);
5. conclusion (summing up, prospects for further study of this problem).

After presenting the results, projects are usually posted on the Internet to familiarize other students.

According to T. March, a good educational quest should have an intriguing introduction, a clearly formulated task that provokes higher-order thinking, a distribution of roles that provides different perspectives on the problem, and a reasonable use of Internet sources (Fedorov, 2016).

2. CONCLUSION

Web quest help students rise their' self-esteem, solve motivation problems, form the culture of communication and social behavior in general. The work on the web quest introduces students to professional computer skills, makes it possible to realistically assess their communication capabilities, improves academic performance by summarizing, fixing and repeating the training and additional material, organizing its practical application, and eliminating gaps in education.

In the process of creative work, students are involved in research activity. They don't only reproduce ready-made knowledge, but also integrate new ideas, learn to work quickly with information, classifying it, participate in defining their own educational trajectory, prepare for continuous continuing education.

REFERENCES

- Gorbunova L., Subbotina E. Use of information technologies in the learning process. *Young Scientist*, 4 (2013), 544.
- Altimentova D., Rozhko K. Information technologies in education. *Concept*, 11 (2016), 826.
- Krasovskaya L., Isabelovqa T. Application of information technologies in education. *Scientific result. Pedagogy and psychology of education*, 3 (2017), 29.
- Polat E. *New pedagogic and information technologies in the education system*, Academia, Moscow, 2017.
- Novikova, A. Media educational quests. *Innovations in education*, 10 (2008), 71.
- Fedorov A. Media Education: Creative Tasks for Students and schoolchildren. *Innovations in education*, 4 (2016), 175.

COMMUNICATION WITH CUSTOMERS THROUGH SOCIAL NETWORKS – EVIDENCE FROM THE REPUBLIC OF CROATIA

Višnja Bartolović¹ 

Maja Validžić²

DOI:

Abstract: *Consumer behavior and the buying decision process are influenced by social and personal factors. The subject of this paper is communication with customers through social networks in the eight largest Croatian companies. To this end, eight of the most well-known retail chains in Croatia were selected and analyzed in mid-2019, five of which are grocery stores and three are specialized drugstore chains. The paper aims to analyze the type and intensity of two-way communication (between retail chains and customers) through the social networks used by retail chains for promotional activities in the Republic of Croatia. Three social networks were analyzed: Facebook, Twitter, YouTube. A significant proportion of retailers have recognized the benefits of advertising through social networks, but still, some have not recognized social networks as a platform for two-way communication between followers and retailers.*

Keywords: *Social Networks, Retail chains, Customers.*

1. INTRODUCTION

Marketing as a mechanism tries to identify customer needs and enable them to use products and services in an efficient and measurable manner. Online Marketing wants to provide information accessible to potential users and influence on their decision-making process of buying goods at the market of final consumption (Nivetha & Sudhamathi, 2019).

Nowadays, the business environment is changing at a rapid pace and managers are under tremendous pressure of exchanging new information. Communication must be as accurate and fast as possible with as less interference as possible. In everyday life, as in management, successful communication is one of the most important skills that can be practiced (Kraljević, Perkov, 2014).

The role of promotion management is to effectively carry out promotional activities and the aim of promotional communication is to stimulate a reaction in the form of product purchases. For this process it is important to define the following aspects (Dobrinić, Gregurec, 2016): The target audience is determined by the marketing activities that precede the promotion as part of market segmentation, target market definition, market research,

- a) Communication (promotional) goals are highly dependent on overall marketing goals and are organizational and time aligned with them;
- b) Designing messages that, in addition to content, in the creation of the message, pay attention to the structure of the message and the source of the message (e.g. professionals or celebrities promote a particular product);

¹ College of Slavonski Brod, Dr. Mile Budaka 1, Slavonski Brod, Croatia

² College of Slavonski Brod, Dr. Mile Budaka 1, Slavonski Brod, Croatia

- c) The choice of media depending on the form of contact, the media are divided into personal (face-to-face conversation, letter, telephone marketing, internet in various groups) and impersonal (billboards, posters, TV commercials, etc.). Since direct contact is established with personal communication, feedback is immediately obtained, while this is not the case with impersonal communication channels;
- d) Feedback. Communication is successful if the recipient understood the message in the desired way. In order for the company to know that the promotion has been successfully done, feedback is collected (e.g. by surveys, but ultimately by the final customer response in the form of product purchases). It could be said that the best feedback is product sales statistics and a financial report.

Advertising is a paid, mass form of communication. Considering the channels that are used, advertising is generally impersonal. The aim of advertising can be to inform the target audience and create awareness about the existence of a new product, its characteristics, usefulness, etc. Information activities are especially important in the phase of product launch. Other advertising goals are persuasion, reminder and additional confirmation (Kotler, Keller, 2008 p. 569).

In the second half of the twentieth century, when marketing began to be taken as a serious and one of the key factors in the business of a company, a scientific discipline began to develop, studying the psychology and behavior of consumers. „Market experts have realized that the goals of the company will be easier to achieve if they consider the needs of consumers and offer them a range of products and services on the market that will better meet their needs” (Grbac, Lončarić, 2010, p. 16)

Consumer behavior and marketing are two concepts that are inseparable from one another, because „marketers should know how consumers think, feel, and behave in relation to subjects, places, ideas, and other objects in a particular space and time” (Grbac, Lončarić, 2010, p. 18).

After researching the consumer preferences, based on the results obtained, the marketing mix – color, size, packaging and main features of the product – is defined and determined. Next step is to define prices and pricing strategies, for example, to put a high price and promote the product as exclusive and approve periodic discounts or to put as lower price as possible, attract consumers on that way, etc. Given all the above, it is also determined in which stores the product should be available and what forms of communication to use to attract consumer attention (Grbac, Lončarić, 2010).

„As a scientific discipline, consumer behavior is defined by Kotler and Keller who point out: Consumer behavior is the study of how individuals, groups and organizations select, buy, use and dispose of goods, services, ideas or experiences to meet their own needs and desires” Grbac, Lončarić, 2010, p. 19).

When researching and studying customer behavior, the priority is not to monitor consumption, but rather behaving while making a purchase decision, during the purchase process itself, and to continue to use or discard the product (Grbac, Lončarić, 2010).

For marketers, it is important to study the level of customer satisfaction of a product or service and why the customer is satisfied or dissatisfied to adapt marketing tactics and the product itself, all for the sake of greater consumer satisfaction and ultimately for the achievement of company goals.

2. COSTUMER BEHAVIOR AND BUYING DECISION PROCESS

Consumer behavior in the interaction with the environment is constantly changing and no matter how much is researched, there will always remain certain unknowns. In the modern age of rapid change and the use of computers, scientists have realized the importance of seriously researching the effects on customer behavior, so some theoretical models have been developed to help frame how certain stimuli affect an individual and thus analyze and „measure” them (Kesić, 1999).

As noted earlier, purchasing decisions are influenced by a variety of components and factors, both external and internal. Purchasing decisions can be made rationally, based on careful consideration, but can also be made spontaneously. There are five stages to the decision-making process: cognizance of the problem, seeking information, evaluating alternatives, deciding to buy, and post-purchase behavior (Grbac, Lončarić, 2010, p. 141).

Earlier it was stated that the customer has a specific motive to buy a product. The motive is mainly the desire to satisfy one of the needs or desires of the customer and in order to realize the purchase, the individual must be aware of that need. This is a phase that encourages the consumer to be active.

Awareness of the problem is the discovery of the difference between the real state in which the consumer is in relation to the state in which he or she would like to be. The greater the difference between these two conditions, the greater the motivation to solve the problem. For example, if a person's car breaks down constantly, they will be aware and motivated to buy a new car, and if they have a relatively good car, they will not easily decide on a better version of an existing one. Realizing of the person that he/she have the problem is influenced by perception, and perception is influenced by the internal and external factors mentioned in the previous chapters. It is the job of marketers to stimulate consumer recognition of the problem, that is, to create an idea of need, even if there is none. After becoming aware of the need, the consumer will start collecting information on the existence and availability of the product / service, product characteristics, as well as pricing information, and will evaluate alternative options based on the information collected. The consumer first begins with an internal search for information (he remembers everything he knows about that product category, looks at product brands, remembers his own experiences with the product, etc.), then, in order to collect additional information, he moves outside to collect information (Grbac, Lončarić, 2010). Consumer information sources are diverse and some are managed by marketers. Sources managed by marketers are „important sources for generating awareness and stimulating product interest among consumers” (Grbac, Lončarić, 2010, p. 148)

In addition to marketing, personal sources such as family, friends, work colleagues, as well as previous product experience are an important source of information. This is a category of information sources that the consumer particularly trusts. The third group of information sources are independent sources, such as specialized magazines, special websites, etc. When buying everyday used products, the consumer does not engage too much to find information about them, so the ideal marketing strategy for such a product group is to advertise intensively how to help the customer recall the product more quickly and to make it known to him, while for high-risk products, marketers need to ensure that information from relevant sources is available to the consumer. After the consumer has gathered information about the products, he will choose one of the alternatives – mostly one that he thinks is a better solution for him. Advertising informs

the public about opening a branch, offering and assortment of a shop and current actions, and for this purpose, mass media are often used – TV advertisements, advertisements on the Internet, advertisements in print media, leaflets in mailboxes and the like. Brands can also be a reason why a shopper will choose a store (Grbac, Lončarić, 2010).

In a sea of many diversified products, manufacturers need to ensure the brand recognition of their product through quality brand management, but for good business results they have to adapt their approach to retail stores and their customers. „This approach to shoppers in retail, by manufacturers and retailers, is often referred to as shopper management” (Muller, Singh, 2006, p. 85).

When it comes to retail customer behavior, it is important to know who the customer is and what is important to them, what are the key factors that influence their behavior and which of these factors may be affected. In order for retail stores to better position themselves and reach targeted consumers, they need to identify and segment people with similar characteristics. Customers thus differ in their behavior, attitudes, dynamics, and social and demographic characteristics. Once the target group has been identified, an access strategy is defined (for example, families with young children spend more than couples without children, which is why many retailers have special baby loyalty programs and loyalty cards) (Muller, Singh, 2006).

3. RESEARCH BACKGROUND

The survey collected data on observed companies in the following categories: global rank, country rank, total visit per domain, device distribution (desktop vs. mobile), Engagement (Monthly visits, Unique visitors, Visits / unique visitors, average visit duration, pages per visit and bounce rate), Channels overview and Social traffic.

The first part of the survey will show data for the TOP 5 companies in activity *4711 Retail sale in non-specialized stores mostly food stores, beverages and tobacco* (Konzum, Lidl Croatia, Plodine, Kaufland Croatia, Spar Croatia).

And, the second part of the survey collected data from the TOP 3 companies in activity *4719 Other retail sale in non-specialized stores* (Dm-drogerie markt, Müller shop Zagreb, Bipa). These are companies operating in the Republic of Croatia, although established in other countries (Germany, Austria). There are only two domestic companies in the TOP 5: Konzum and Plodine.

For the purpose of the research, the five largest retail chains operating in the Republic of Croatia were selected: Konzum, Kaufland, Lidl, Plodine and Spar and the three largest drugstore retail chains DM, Bipa and Mueller.

According to the business data of the top ten retailers, these five selected retailers (Konzum, Lidl Croatia, Plodine, Kaufland Croatia, Spar Croatia) hold close to 72% of the market with HRK 24.2 billion. Dm-drogerie markt is in eighth place in terms of sales revenue on the same scale, therefore it is in the TOP 10 retail chains in the retail sector (Institute of Economics Zagreb, 2019). Konzum plus d.o.o. (formerly Konzum dd) is the largest Croatian retail chain with a share of about 30% in the Croatian market. Konzum plus, having around 10,000 employees, is one of the largest employers in the country and has as many as 500,000 purchases every day in over 600 Konzum stores. (Konzum.hr official site, 2019). One of the most well-known consumer goods retailers is certainly Kaufland. It is part of the German Schwarz Group, which

also owns Lidl. The first store in Croatia, opened in 2001 in Karlovac. By 2009, Kaufland had twenty-five branches in Croatia, while today there are 39 (Kaufland.hr official site, 2019).

Lidl is its first 13 stores in Croatia in 2006. Today in Croatia Lidl operates 93 stores throughout Croatia (Lidl.hr official site, 2019).

Spar is the Austrian chain of stores that opened the first Interspar hypermarket in Zadar in 2005. Since 2009, a market format known as Spar has been created and first opened in Varaždin in 2014. Today, Spar in Croatia has a network of stores of 93 supermarkets (Spar) and 21 hypermarkets (Interspar) and employs over 4300 employees (Spar.hr official site, 2019).

The first Plodine store was opened in 1993 in Rijeka, and in the beginning of 2000, it started with more significant openings of modern-day supermarkets. Today, there are 83 supermarkets operating in Croatia, with more than 3,500 employees (Plodine.hr official site, 2019).

The first DM store in Croatia was opened in Zagreb in 1996, and today there are 157 in Croatia and employ about 1500 employees (DM-drogerie markt.hr official site, 2019). The first Müller store opened in Zagreb in 2006, and there are currently 18 of them. At the beginning of 2017, he took over Kozmo drugstores and thus approached DM in business and income (Müller official site, 2019).

The first Bipa store in Croatia opened in 2007 in Vinkovci, and today has more than 100 branches and over 600 employees (Bipa.hr official site, 2019).

4. RESEARCH RESULTS

According to the National Classification of Activities, these 8 enterprises are classified into two types of activities:

- Activity 4711 Retail sale in non-specialized stores with food, beverages or tobacco predominating (Konzum, Lidl Croatia, Plodine, Kaufland Croatia, Spar Croatia),
- Industry 4719 Other retail sale in non-specialized stores (Dm-drogerie markt, Müller shop Zagreb, Bipa).

A study by the Competition Agency shows that in the food and groceries sector in 2017, the market concentration indicator for the top ten traders was 82.2 percent, unchanged from 2016, while the concentration indicator for the top five retailers accounted for 66.2 percent in 2017, an increase of 65.1 percent from 2016 (Institute of Economics Zagreb, 2019). The position of TOP 10 retail companies in the ranking in the Republic of Croatia is shown in the table:

Table 1. Sales revenue 2017

| Company | Sales revenue (in billions of kn; kn1 = €0.13) |
|-------------------------------------|--|
| Konzum | 8,9 |
| Lidl Hrvatska | 4,6 |
| Plodine | 3,8 |
| Kaufland Hrvatska | 3,5 |
| Spar Hrvatska | 3,4 |
| Dm-drogerie markt | 1,7 |
| Müller trgovina Zagreb (Fininfo.hr) | 1,4 |
| Bipa (Fininfo.hr) | 0,46 |

Source: Institute of Economics Zagreb, 2019, Fininfo, 2019

Table 2. Displaying the number of followers on social networks and YouTube channels in Croatia on 30th August 2019

| Retail chain: | Likes on Facebook | Instagram follower / posts | YouTube channel / video subscribers |
|-----------------|-------------------|----------------------------|-------------------------------------|
| Kaufland | 216 000 | 13 600 – 182 | 1 700 – 220 |
| Konsum | 254 300 | 10 400 – 506 | / – 1300 |
| Lidl | 377 000 | 72 600 – 820 | 5 200 – 1 700 |
| Spar | 173 400 | 1 291 – 124 | 474 – 536 |
| Plodine | 210 300 | 1 699 – 45 | 225 – 699 |
| DM | 495 000 | 153 000 – 1623 | 13 000 – 2 200 |
| Müller | 105 500 | 4 495 – 150 | - |
| Bipa | 463 800 | 88 900 – 802 | 1 100 – 135 |

Source: authors

The data in Table 2 shows that all the chains are active on social networks. Of the consumer goods stores on Facebook and Facebook followers, Lidl.hr has the most likes, while in drug-stores market Dm-drogerie markt.hr holds the advantage. The surprising chain is certainly Müller.hr, which has Facebook likes on all eight stores, and has relatively few followers on Instagram and on YouTube channel (or not easy to find, which also supports the fact that they are not overly engaged). Instagram is a social network where trends such as fashion and beauty are mostly represented, so it is to be expected that drugstores – DM-drugstores markt.hr and Bipa.hr have the most followers of the observed eight retail chains, followed by Lidl.hr.

4.1. Activity 4711- Retail Sale in Non-Specialized Stores Mostly Food Stores, Beverages and Tobacco (Konsum, Lidl Croatia, Plodine, Kaufland Croatia, Spar Croatia)

According to Website Analysis Overview Report, period between August 2019-October 2019, Country Rank for selected companies are shown in figure 1.

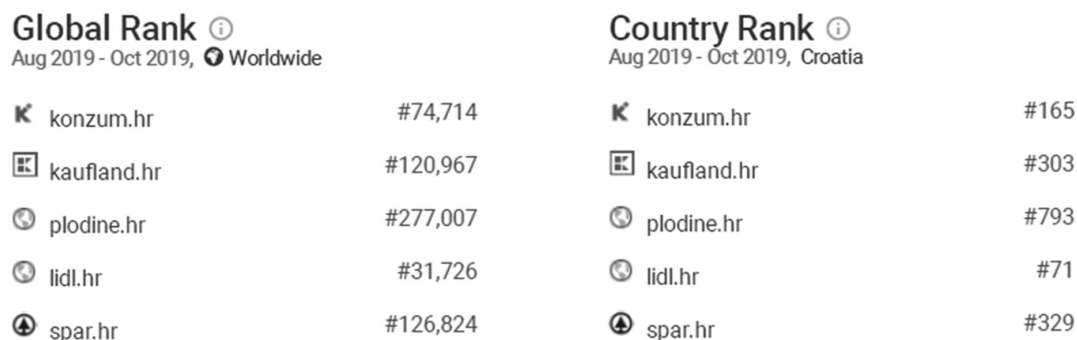


Figure 1. Global and country rank of compared analysed sites

Source: Website Analysis Overview, 2019

Next analysis is number of total visits. Number of total visits represent sum of all visits per time period (August-November 2019).

Next figure 2 shows number of total visits per domain:

Lidl Croatia is leading retailer in total visit per domain (46 %). Konsum has 22 % of total visits. On 3rd place is Kaufland with 17 % of visits, on 4th place is spar.hr and 5th is Plodine.

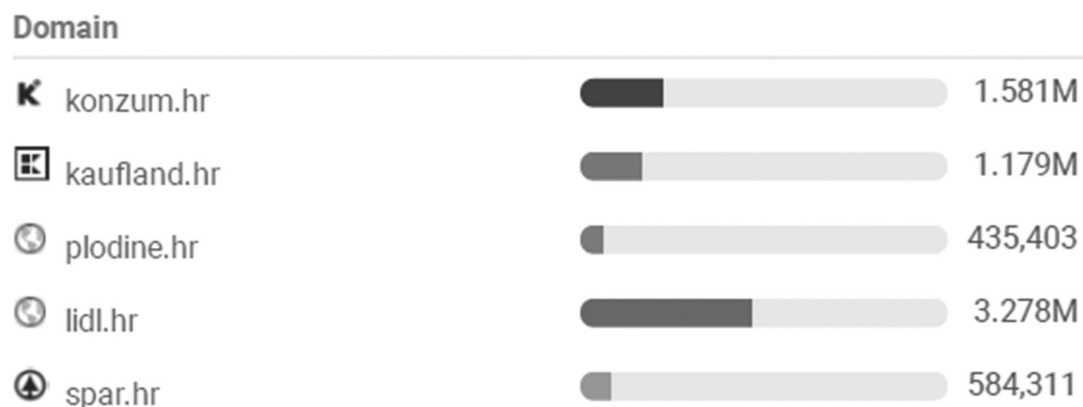


Figure 2. Domain

Source: Website Analysis Overview, 2019

Next figure 3 shows device distribution in the same period. Device distribution shows percent of incoming traffic from desktop vs. mobile web. Lidl Croatia has leading position in this segment and the reason is in good quality of mobile app.

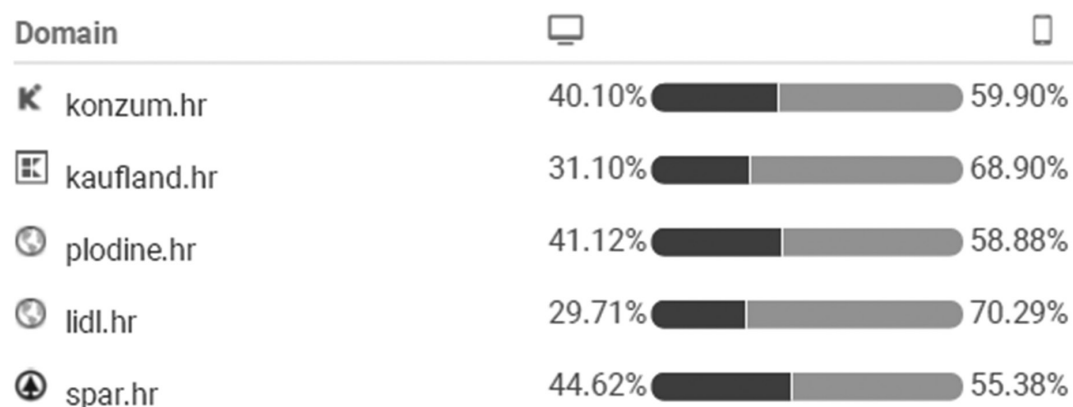


Figure 3. Device distribution (desktop vs. mobile web)

Source: Website Analysis Overview, 2019

Next figure 4 shows Engagement. The average engagement metrics are calculated for the selected time range. Lidl has leading position in monthly visits, unique visitors. Konzum has leading position in average visit duration and bounce rate. Spar has leading position in number of pages per visit.

| Engagement ^① | | | | | | |
|--|----------------|-----------------|--------------------------|---------------------|-------------|-------------|
| Aug 2019 - Oct 2019 ^② Worldwide | | | | | | |
| Domain | Monthly Visits | Unique Visitors | Visits / Unique Visitors | Avg. Visit Duration | Pages/Visit | Bounce Rate |
| konzum.hr | 527,183 | 260,726 | 2.02 | 00:04:12 | 5.35 | 40.28% |
| kaufland.hr | 393,325 | 197,931 | 1.99 | 00:02:14 | 4.53 | 49.63% |
| plodine.hr | 145,134 | 81,876 | 1.77 | 00:01:43 | 2.91 | 48.39% |
| lidl.hr | 1.092M | 445,860 | 2.45 | 00:03:08 | 8.97 | 41.49% |
| spar.hr | 194,770 | 123,534 | 1.58 | 00:02:25 | 9.43 | 47.66% |

Figure 4. Engagement

Source: Website Analysis Overview, 2019

Next figure 5 shows Marketing Channels: direct channel, e-mail, referrals, social channel.



Figure 5. Marketing Channels

Source: Website Analysis Overview, 2019

Most of incoming traffic comes from direct marketing channels, and from organic search. In direct channel Konzum has 32,37 %, Kaufland 33,7 %, Plodine 28,37 %, Lidl 49,37 % and Spar 24,75 %. Marketing Channel “Social” shows next metrics: Konzum 2,52 %, Kaufland 4,05 %, Plodine 1,9 %, Lidl 2,14 %, Spar 0,93 %.

Social traffic is shown in the next figure – Leading social networks that drove traffic to the selected site on desktop.

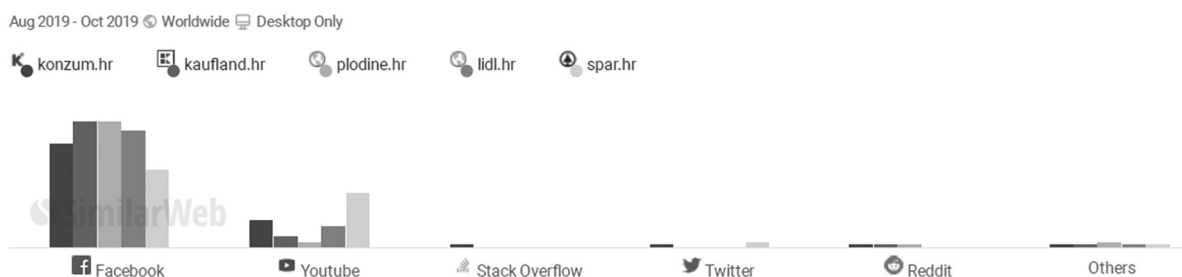


Figure 6. Social Traffic

Source: Website Analysis Overview, 2019

According to Figure 6 Social Traffic (Desktop Only-Facebook on Croatian market) shows that Plodine (90,46 %) and Kaufland.hr have leading position. Lidl.hr have 84,8 % social traffic on Facebook, Konzum 75,28 % and Spar 56 %. On YouTube Spar.hr has leading position (39,83 %), Konzum has 20,51 %, Lidl.hr has 15,05 %, Kaufland.hr 8,37 % and Plodine.hr 3,99 % of Social Traffic. Twitter are using only Konzum (0,86%), and Spar.hr (4,17 %). Complete different situation for these retail chains is on their domestic market. For example, Kaufland.de uses Facebook in 49,08 % and YouTube in 35,18 %, on Germany market. Lidl.de uses Facebook (42,75 %), VKontakte 23,71 % and YouTube 23,43 %. Spar.at uses Facebook 50,871 %, and YouTube 43,07 %.

4.2. Activity 4719- Other Retail Sale in Non-Specialized Stores (Dm-Drogerie Markt.hr, Müller.hr, Bipa.hr)

According to Website Analysis Overview Report, period between August 2019-October 2019, Country Rank is showed in figure 7. Next analysis is number of total visits. Number of total visits represent sum of all visits per time period (August-November 2019).

Figure 8. shows number of total visits per domain. Dm-drogerimarkt.hr is leading retail chain in total visit per domain with 74,10 % share of mobile device distribution.

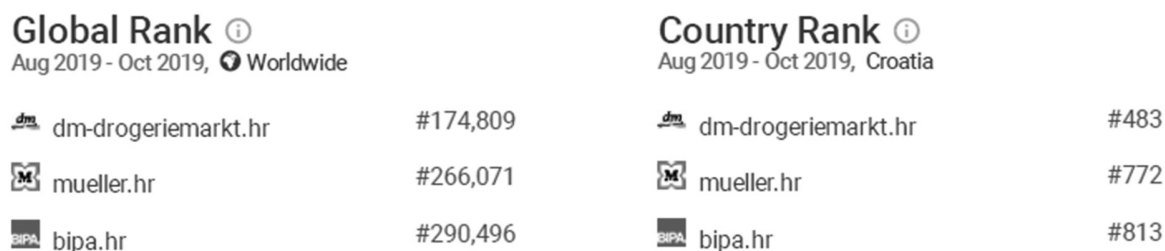


Figure 7. Global and country rank of compared analysed sites

Source: Website Analysis Overview, 2019

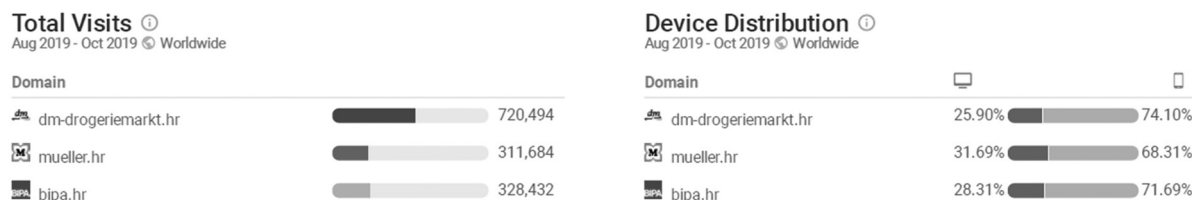


Figure 8. Total Visits and Device Distribution

Source: Website Analysis Overview, 2019

Next figure shows Engagement. The average engagement metrics are calculated for the selected time range. Dm-drogerie markt.hr has leading position in monthly visits and unique visitors. Mueller.hr has leading position in average visit duration, bounce rate and leading position in number page per visit.



Figure 9. Engagement

Source: Website Analysis Overview, 2019

Most percentage of incoming traffic comes from direct marketing channels, and from organic search. In direct channel dm-drogerie markt.hr has 11,82 %. Mueller.hr 17,78 % and Bipa.hr 28,03 %. Marketing Channel “Social” shows next metrics: Bipa.hr has 3,04 %, Mueller.hr 3,19 % and dm-drogerie markt.hr 2,83 %. Social traffic is shown in the next figure.

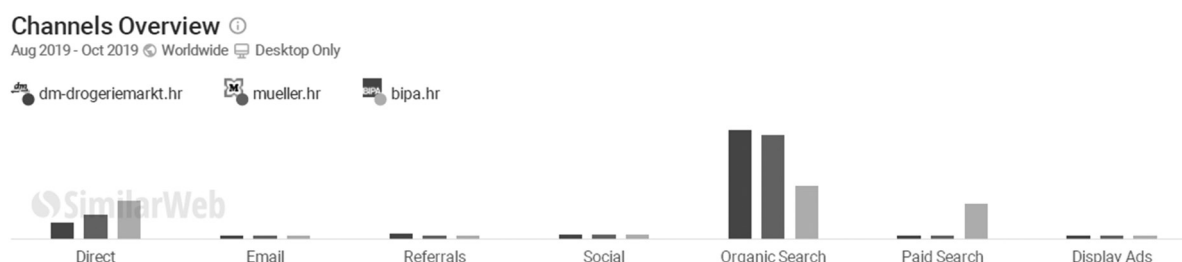


Figure 10. Channels Overview

Source: Website Analysis Overview, 2019

According to Figure 6 Social Traffic (Desktop Only) shows that Facebook is leading social network in communication with customers. YouTube is 2nd. Very interesting data for dm-drogerie markt.de on German market shows that dm-drogerie markt.de in Germany use YouTube similar as Facebook (41,7 % on YouTube vs. 42,26 % on Facebook). The same case is also for Mueller.de, which uses Facebook in 57,62 % vs. YouTube 27,96 %. The same case is also for Bipa.at. Bipa in Austria uses Facebook and YouTube 58,04 % vs. 34,00 %.

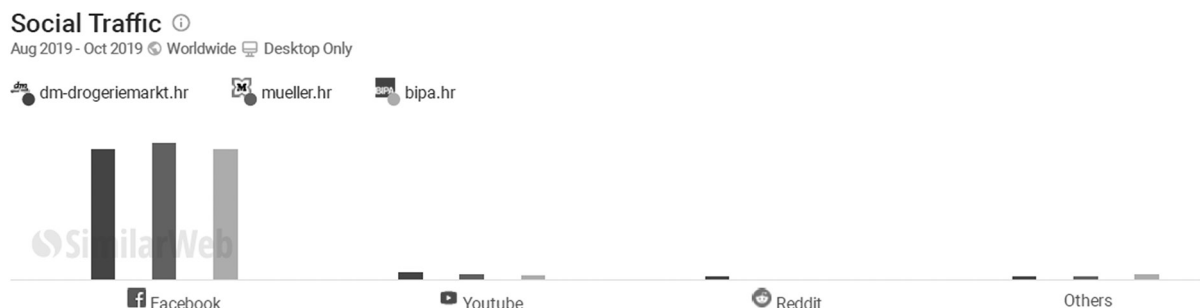


Figure 11. Social Traffic

Source: Website Analysis Overview, 2019

5. CONCLUSION

Social networks are a platform where businesses can promote themselves and reach customers. With every announcement, feedback is immediately obtained in the form of likes and comments, allowing the promotional campaign to be immediately refined and promoted.

The analyzed data indicate that Facebook is the largest social network used by chains in both types of retail activity observed.

The paper aims to analyze the type and intensity of two-way communication (between retail chains and customers) through the social networks used by retail chains for promotional activities in the Republic of Croatia. Three social networks were analyzed: Facebook, Twitter, YouTube. A significant proportion of retailers have recognized the benefits of advertising through social networks, but still, some have not recognized social networks (Mueller on YouTube) as a platform for two-way communication between followers and retailers.

On the Croatian market, foreign retail chains with headquarters in Austria and Germany use Facebook the most, while in their domestic markets (Germany and Austria) they use almost equally Facebook and YouTube.

For example, Mueller.hr does not use YouTube in the Croatian market at all, while its remaining two competitors use YouTube on the Croatian market as a channel of communication with customers.

Mobile web has a leading position as opposed to a desktop device. As a recommendation for further research into the use of social networks in retail chains it would be advisable to observe connection between the behavior of the population by age and the preferred social network, also preferred method of communication (desktop vs. mobile web).

REFERENCES

- Bipa.hr official site: <https://www.bipa.hr/> (26. August 2019.)
- DM-drogerie markt.hr official site: https://www.dm-drogeriemarkt.hr/hr_homepage/ (26. August 2019.)
- Dobrinić, D. & Gregurec, I. (2016). *Integrirani marketing*. Varaždin, Croatia: Fakultet organizacije i informatike.
- Grbac, B. & Lončarić, D. (2010). *Ponašanje potrošača na tržištu krajnje potrošnje*. Rijeka, Croatia: Ekonomski fakultet Rijeka.
- Institute of Economics Zagreb: Sektorske analize, https://www.eizg.hr/userdocsimages/publikacije/serijske-publikacije/sektorske-analize/sa_trgovina_2019.pdf
- Kaufland.hr official site: <https://www.kaufland.hr/> (25. August 2019.)
- Kesić, T. (1999). *Ponašanje potrošača*. Zagreb, Croatia: Adeco.
- Konzum.hr official site: <https://www.konzum.hr/> (24. August 2019.)
- Kotler, P. & Keller, K.L. (2008). *Upravljanje marketingom*, 12. izdanje, Zagreb, Croatia: Mate d.o.o.
- Kraljević, R. & Perković, D. (2014). *Menadžment tržišnih komunikacija*. Zagreb, Croatia: Libertas-Plejada.
- Lidl.hr official site: <https://www.lidl.hr/hr/index.htm> (25. August 2019.)
- Muller, J. & Singh, J. (2006.). *Category management*, Zagreb, Croatia: Internacionalni centar za profesionalnu edukaciju.
- Müller.hr official site: <https://www.mueller.hr/> (26. August 2019.)
- Plodine.hr official site: <http://www.plodine.hr/> (25. August 2019.)
- Portal Fininfo, <https://www.fininfo.hr/Poduzece/Pregled/mueller-trgovina-zagreb/Detaljno/83907>
- Similar web: Website Performance, https://pro.similarweb.com/#/website/worldwide-overview/dm-drogeriemarkt.hr,mueller.hr,bipa.hr/*999/3m?webSource=Total
- Similar web: Website Performance, https://pro.similarweb.com/#/website/worldwide-overview/konzum.hr,kaufland.hr,plodine.hr,lidl.hr,spar.hr/*999/3m?webSource=Total
- Spar.hr official site: <https://www.spar.hr/> (25. August 2019.)

PMO APPROACH IN CHOOSING THE OPTIMAL PROJECT GOVERNANCE FRAMEWORK FOR CONTRACTED ENGAGEMENT MODEL

Srdan Atanasijević¹ 
Tatjana Atanasijević² 
Monika Zahar³ 

DOI:

Abstract: *At Comtrade, Project Management Organization (PMO) is committed to providing the highest standard of project management services to guide projects from initial planning and design through engineering and construction and finally to execution and approvals.*

One of the first steps of successful project governance is to develop and agree with customers the appropriate engagement model, which is typically determined by the client and by the type of its business environment that dictates the pricing model.

However, these agreements alone do not ensure satisfying results. PMO needs to be the driving force for establishing good and mature project governance management as a significant investment and crucial element for the success of every project and business growth.

This paper examines current pricing and engagement models, focusing on balancing its risk and benefits, discusses how a PMO shape project governance model to ensure project realization for a specific pricing model would. Research provides strategic approaches on how to identify and set a useful performance measurement metric and track key performance indicators aligned with diverse business models toward project goals accomplishments to build long-term success.

Keywords: *Project Management, Project Management Office, Project Related KPI, Project Governance, Software Engineering Engagement Models, Performance Management Framework.*

1. INTRODUCTION

Nowadays, complexity and rapid changing on markets make a concern for senior managers and necessitate developing a dynamic strategic framework to cope with those challenges. “Software is eating the world,” wrote Marc Andreessen, co-founder and general partner of venture capital firm Andreessen Horowitz, in an essay published in The Wall Street Journal in 2011. In such economic pressure to reduce time to market for each company software is a crucial ingredient. Software engineering projects rarely operate in isolation within an organization and are usually delivered to satisfy broader strategic priorities [1]. This pressure has driven an increase in the number of projects undertaken simultaneously within organizations, and consequently, the complexity of managing their interdependencies [1]. Project Management Organization (PMO) is committed to provide the highest standard of project management services and to guide projects from initial planning and design through engineering, construction and finally to execution and approvals. Projects lacking adequate senior management support cannot deliver the expected business benefits to an organization.

¹ Comtrade Group, Comtrade Digital Services, Dublin, Ireland

² Comtrade Group, Comtrade Digital Services, Dublin, Ireland

³ Comtrade Group, Comtrade Digital Services, Dublin, Ireland

1.1. Organizational Governance and Project Governance

Project governance and project success are in tight correlation. Governance systems cannot operate without the active support of the management system. In his article [2], Muller concluded that Governance starts at the corporate level and provides a framework to guide managers in their daily work of decision-making and action-taking. At the level of projects, Governance is often implemented through defined policies, processes, roles, and responsibilities, which set a framework for peoples' behavior and in turn influences the project.

Governance sets the boundaries for project management activities, by [2]:

- *Defining the objectives of a project.* These should be derived from the organization's strategy and clearly outline the specific contribution a project makes to the achievement of the strategic objectives,
- *Providing the means to achieve those objectives.* This is the provision of or enabling access to the resources required by the project manager,
- *Controlling progress.* Evaluate the appropriate use of resources, processes, tools, techniques, and quality standards in the project.

Without a governance structure, an organization runs the risk of conflicts and inconsistencies between the various means of achieving goals, such as processes and resources, thereby causing costly inefficiencies that negatively affect both smooth running and bottom-line profitability.

Project governance is the set of policies, regulations, functions, processes and responsibilities that define the establishment, management, and control of projects, programs, or portfolios [4].

Practical governance of project management ensures that the project portfolio of the organization remains aligned to organizational objectives, and is delivered efficiently and effectively, in a sustainable manner.

- Corporate Governance is the system of rules and practices that dictates how organizations are directed and controlled,
- Project Governance focuses more specifically on project activities.

This interrelationship is effectively presented in *Figure 1*.

The project governance framework needs to provide coherence between corporate governance and project governance, provide a guide for those involved in projects, and ensure that project roles and responsibilities are well understood. The management of a project is much like the governance of an organization [4]. Four key elements must be considered to support effective software project governance: portfolio management, project sponsor, PMO, and effective project management.

The role of management is to make decisions within the framework set by governance.

Governance of project management provides senior management confidence:

- An overview of all project management activities,
- A big picture of how organizations use resources,
- A risk assessment of their portfolio of projects,
- A rough metric of improvement in managing projects relative to others in the industry,
- Linkages of senior management with actual project execution management.



Figure 1. Project governance is the system of rules and practices that operates on a subset of a project and organizational metrics intended to align project goals with corporate targets

Approaches to governance vary by the particularities of organizations. Managers influencing the design of project governance should be aware of the importance of a stakeholder devotion to success [3]. The factor of project success comprises five sub-dimensions (project efficiency, organizational benefits, project impact, potential, and stakeholder satisfaction) [2, 3].

One of the first steps of successful project governance is to develop and agree with customers the appropriate engagement model, which is typically determined by the client and by the type of its business environment that dictates the pricing model.

In the separate chapter, we will discuss typical project engagement models in software engineering and KPI related to communicate project delivered value to the organizational and project stakeholders.

2. METHODOLOGY

In this article, we will use a case study type of research. Through the research process, we will apply a combined qualitative and quantitative research method.

By using qualitative methods, we will focus on recognizing the customer engagement models used today in practice by answering the question: what types of customer engagement models are present in the software development market today.

By applying quantitative analysis to a sample of project portfolios of the observed global mid-sized software companies, we will reduce the number of recognized engagement models to those that are more prevalent.

In the process of identifying representative engagement models, we will use the well-known principle formulated by Vilfredo Pareto, or the 80-20 rule, expressed in this case, that 80% of the contracted engagement models come from 20% of the dominant ones that we want to recognize.

Recognized dominant customer engagement models will be described in detail, and the second cycle of qualitative and quantitative analysis will be performed on them to identify key project metrics.

By quantitative analysis, we will identify a subset of project metrics that are of interest to corporate management.

To properly select and identify effective set of metrics for efficient project governance, we will focus on the following dimensions: monitoring the financial status of a project, its profitability, quality, customer satisfaction, resource utilization, and creation of new IP assets.

3. RESULTS

Based on Harmon and others [6], the pricing decision is one of the most critical decisions that a firm can make, whether planning the introduction of a new information technology (IT) service or repositioning an existing IT service. They distinguish two groups of pricing modes based on the value it provides to the end customer: cost-based pricing models and value-based pricing models. Cost-based pricing models include the following strategies: Flat pricing, Tiered pricing, and Performance-based pricing [5]. Value-based pricing strategies were established on the premise of how customers perceive value [5]. Perceived value is defined in terms of the tradeoff between perceived benefits to be received and the perceived price for acquiring the product or service that delivers those benefits. These benefits are based on several drivers, including Economic-value drivers, Performance Value, Supplier Value, Buyer Motivation.

This approach is sometimes a little bit complicate to implement. In past years, this approach evaluates in a more straightforward and most effective. Today's market of software engineering services differentiates three remain pricing models (PRM) and based on them dozen customer engagement models (CEGM). Main pricing models are linear, non-linear, hand agile.

Linear pricing models are based purely on the relationship between time and material (effort and rate). The service provider is paid based on the resource provided or the effort spent on the required duration of the agreed time. We distinguish the following customer engagement models: dedicated team, time, and material (T&M) and fixed price (FP).

Non-linear pricing models decouple the relationship between time and material. Typically, T&M and FP do not offer much scope for modification and changes. Service providers have realized the necessity to be flexible to satisfy their customers. This demand has led to innovations in engagement models that suit varying needs. We distinguish the following engagement models: hybrid, managed service, outcome-based engagement and transactional.

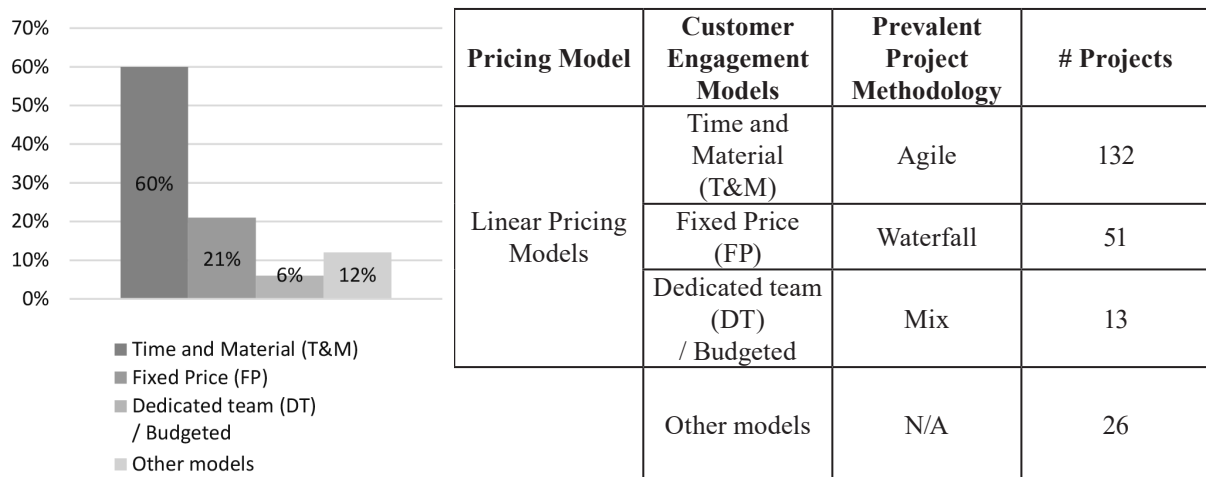


Figure 2. Typical Engagement models in middle software company used on 80% of projects, in 6 years

Finally, the third group of pricing models is based on an agile software delivery approach. Under Agile, we distinguish the following customer engagement models: capped T&M, cost target contract, and incremental delivery CEGM.

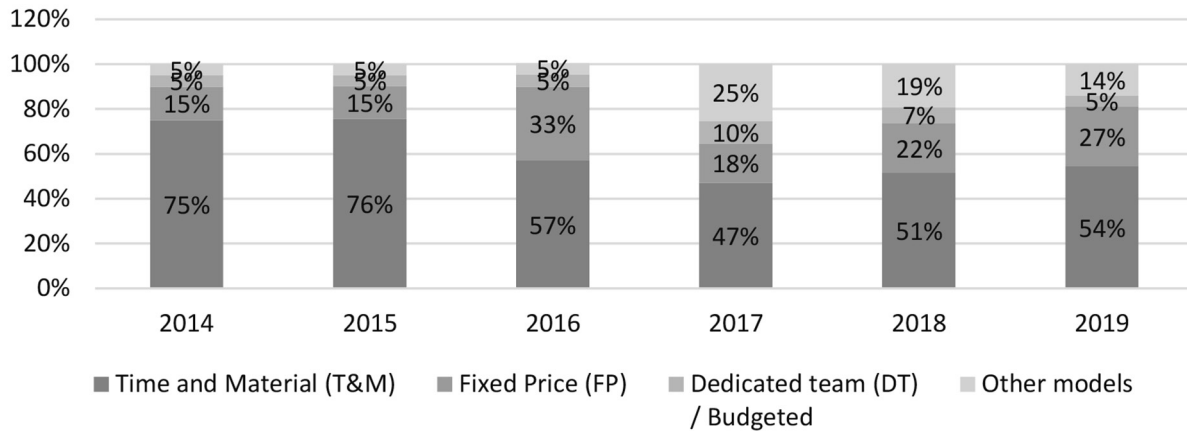


Figure 3. Typical breakdown of customer engagement models in middle size software company, in the six years

The survey was conducted on a data set covering the details of 220 projects for more than 100 customers in the six years (2014-2019). Research results identified that customers prefer just three customer engagement models. *Figure 2* and *Figure 3* presents key findings of this quantitative research: Time and material, Fixed price, and Dedicated team (budgeted) are recognized as prevalent customer engagement models, *Table 1*.

4. DISCUSSION

Customers should choose a pricing model based on the type of project they have. If they have a clear understanding of their project and a limited budget, then a fixed-price model should be used. Clients should avoid including lots of functionality in this case and instead focus only on core features. If the project is quite flexible and requirements change frequently, then the time & materials model should be applied.

Table 1. Main features of dominant customer engagement model in Software Engineering projects

| Model | When to use | Advantages | Disadvantages | Project type |
|--------------------------------|--|--|--|--|
| Fixed-price (FP) | projects with limited budgets and definite deadlines. | Finalized pricing. Strict deadlines. Predictability. Little management. | Rigid terms. Long planning. Miscommunication risks. | MVP Limited features Limited budget Clear requirements |
| Time & materials (T&M) | projects with changing requirements and long-term projects | Flexible requirements. Hourly rates. Product quality. Transparency. | Uncertain deadlines. Undefined budget. Need to manage the process Hard decisions. | Unclear scope Dynamic requirements Long term projects |
| Dedicated team (DT) / Budgeted | business partners with established relationships | Entirely predictable budget, a monthly payment based on delivered hours. The customer manages it. | Low efficiency for short-term projects. Team members have fewer opportunities to learn new techniques | Long partnership Focus on performance and quality of services Specialization |

When parties have a long-term relationship, they can work according to the dedicated team or budgeted model. In a nutshell, customers must balance their expectations of quality, deadlines, and price.

Table 2. Sample of KPI performance measures, recommended for specific customer engagement model

| Area | Project metrics | CEGM |
|-------------|--|-------------|
| Finance | Sales Revenue, Gross Profit, Gross Profit Margin (value and YoY) | All models |
| | Gross Profit per Delivered FTE, Billable Utilization | T&M |
| | Total Costs, Cost of service delivery, Subcontractors cost | All models |
| | The ratio of estimated project costs to actual costs | Fixed Price |
| Customer | Customer Engagement | All models |
| | Customer Profitability Score | All models |
| | Customer Satisfaction Index, Customer Complaints | T&M |
| | Service Level Agreement (SLA) failures | All models |
| Engineering | Delivery capacity and YoY, effort (FTE), Subcontractors share | All models |
| | Utilization, Onsite Delivery effort | T&M |
| | Done/Closed, Done/Lost resource requests, Monthly Lost Rev | T&M |
| | Project Schedule Variance, Number of Change Requests | Fixed Price |
| Quality | Issues found by Customers and QA | All models |
| | Issues found in code review | All models |
| | Safety incidents | All models |
| | Milestones accuracy | Fixed Price |

Once dominant customer engagement models have been identified, project metrics analysis is approached. Organizations need a reliable project performance measurement program to improve their software development process continuously [7,8]. Business process performance measurement and software process performance measurement tackle similar research questions: the development of methodologies and metrics to measure, control, manage, and improve a process. Business process performance measurement defines requirements for Key Performance Indicators (KPIs) that are ignored by the software metrics community. Based on the research of Guillermo Montero and other associates [9], they identified a set of 26 proposed key process indicators; a dashboard of 26 indicators narrowed from the original 83 has been created after using three consultation rounds seeking consensus within a panel of seven experts shown in *Table 2*. Based on that research and conclusions presented in the paper [9] they formulate criteria based on the following aspects, related to KPI:

- Contents should consider project indicators, economic/financial ratios, earned value analysis and indicators related to project risks;
- Data must be as specific and accessible as possible;
- Data collection needs to be efficient and cost-effective;
- Stakeholder's perspective has to be considered;
- The scorecard should be transferable.

Table 2 shows project metrics related to reporting by organizational areas and project sponsors. The CEGM column shows which metrics is applicable in which engagement model.

5. CONCLUSION

This paper examines current pricing and engagement models, focusing on balancing its risk and benefits, discusses how a PMO shape project governance model to ensure project realization for a specific pricing model would [10]. In this paper, we explore a subset of project metrics that are candidates for project governance. Project management should be monitored from the perspec-

tive of project sponsors, company management, and customers [11]. The resulting KPIs should reflect the financial status of the project, the quality of deliverables, risks, customer and team satisfaction. Organizational management is interested in monitoring the realization of revenue and expenditure planning, profitability, resource utilization, current customer satisfaction [12]. Research provides strategic approaches on how to identify and set a useful performance measurement metric and track key performance indicators aligned with diverse business models toward project goals accomplishments to build long-term success.

REFERENCES

- [1] Too, E. G., & Weaver, P. (2014). The management of project management: A conceptual framework for project governance. *International Journal of Project Management*, 32(8), 1382-1394.
- [2] Muller, R. (2017). *Project governance*. Routledge.
- [3] Joslin, R., & Müller, R. (2016). The relationship between project governance and project success. *International Journal of Project Management*, 34(4), 613-626.
- [4] Alie, S. S. (2015). Project governance: #1 critical success factor. In *PMI® Global Congress 2015*. Orlando, Florida: Project Management Institute.
- [5] Association for Project Management. (2012). *APM body of knowledge*. (6th ed.). Buckinghamshire: Association for Project Management.
- [6] Harmon, R., Demirkan, H., Hefley, B., & Auseklis, N. (2009). Pricing Strategies for Information Technology Services: A Value-Based Approach. In *2009 42nd Hawaii International Conference on System Sciences* (pp. 1-10). Big Island, HI, USA: IEEE.
- [7] Atanasijević, S. (2016). Approach to project management in dynamic reality – Differences between traditional and agile approaches. doi:10.13140/RG.2.2.10519.27047/1.
- [8] List, B., Bruckner, R. M., & Kapaun, J. (2005). Holistic software process performance measurement from the stakeholders' perspective. In *16th International Workshop on Database and Expert Systems Applications (DEXA'05)* (pp. 941-947). Copenhagen, Denmark: IEEE.
- [9] Montero, G., Onieva, L., & Palacin, R. (2015). Selection and Implementation of a Set of Key Performance Indicators for Project Management. *International Journal of Applied Engineering Research*, 10(18), 39473-39484.
- [10] Atanasijević, S. (2013). Case Study: How to establish global PMO Office. doi: 10.13140 / RG.2.2.18446.82247/1.
- [11] Dragičević, D., Milosavljević, A., & Atanasijević, S. (2013). Combination of traditional and agile project management methodologies on software project of health information system in Ministry of Defence of Republic of Serbia. In *16. International Conference of Quality Management*. Belgrade: ICDQM.
- [12] Atanasijević, S. (2019). Project Management on AI Projects. doi: 10.13140/RG.2.2.10771.02080/1.

BEST PRACTICES FOR PEOPLE WITH DISABILITIES ADOPTED IN ITALIAN NATIONAL PARKS

Giulio Mario Cappelletti¹ 

Alfredo Ernesto Di Noia²

Giuseppe Martino Nicoletti³

DOI:

Abstract: *The accessibility of a natural protected area should be seen as a possibility for people with special needs to access to a structure or open space in order to fully enjoy their services and activities. The European Union has issued numerous documents on the accessibility and a resolution on equal opportunities for disabled people in all fields, including leisure time. Also, in Italy there are very detailed regulations on accessibility and social inclusion, both at the state level and at the region level of the individual. Following these rules, several Italian national parks have adopted guidelines to make their areas accessible and provide physically challenged people with all the services. The aim of this paper is to examine legislation and best practices adopted to make accessible the Italian national parks to people with disabilities.*

Keywords: *Disabilities, Natural Parks, Protected Natural area, Accessibility.*

1. INTRODUCTION

International Union for Conservation of Nature (IUCN) has defined protected areas as “a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values” (Dudley, 2008) (IUCN UNEP WWF, 1980).

Laws and technical standards have been established to delineate the requirements and actions necessary to ensure the accessibility of a public place. On the matter the United Nations has published various documents: the Universal Declaration of Human Rights of 1948 (United Nations, 1948), the Declaration on the Rights of Mentally Retarded Persons of 1971 (United Nations, 1971), the Declaration on the Rights of Disabled Persons of 1975 (United Nations, 1975), the Declaration on the Rights of Deaf-Blind Persons of 1979 (United Nations, 1979), the Resolution 37/52 of 1982 called the World Program of Action Concerning Disabled Persons (United Nations, 1982), the Standard Rules on the Equalization of Opportunities for Persons with Disabilities of 1994 (United Nations, 1994), the Global Disability Action Plan 2014-2021 (WHO, 2015), the Convention on the Right of the Persons with Disabilities of 2016 (United Nations, 2016).

The „accessible tourism” or the so-called „tourism for all” is a set of structures and services made available to people with disabilities or special needs so that they can enjoy the opportunity to travel, enjoy and take part in events without facing any problems or difficulties, in conditions of autonomy, but also of safety and comfort (Setola et al., 2018).

¹ University of Foggia, Department of Economics, CESETEA, via Caggese, 1 – 71121 Foggia (Italy)

² University of Foggia, Department of Economics, CESETEA, via Caggese, 1 – 71121 Foggia (Italy)

³ University of Foggia, Department of Economics, CESETEA, via Caggese, 1 – 71121 Foggia (Italy)

Additionally, some studies have highlighted the benefits that outdoor activities have for the population and even more for people with disabilities (Maller et al., 2015).

A service is defined accessible when the information on it can be easily found and are easily accessible and usable by people with disabilities, especially when there is qualified and trained, and there are also other accessible facilities (such as hotels, restaurants, museums, transport etc.).

Some disabilities can be temporary (for example pregnancy), others which are permanent since birth or after accidents or illnesses or linked to the old age. The disabilities include:

- Physical disability: for example, inability to walk;
- Sensory disabilities (visual, auditory);
- Intellectual disabilities (Down syndrome, autism, etc.);
- Food disabilities (celiac disease, allergies to certain foods, diabetics etc.) (Vila et al., 2015).

Accessible tourism should be able to provide people with special needs and their families' equal rights and participation in social life through a range of services: autonomy in traveling and as users of various services, information reliability on the structures, satisfying personal needs for the whole holiday. (Darcy 2010) (Kastenholz et al. 2015) (McKercher and Darcy 2018) (Michopoulou and Buhalis 2013). Many laws on disability issue have been enacted in order to achieve these objectives, even for tourist services and nature tourism, to give all those people the opportunity to enjoy protected natural areas.

2. REGULATIONS: REQUIREMENTS FOR STRUCTURES FOR THE RECEPTION OF THE DISABLED

2.1. International Regulations

The Convention on the Rights of Persons with Disabilities (CRPD), approved by the United Nations General Assembly on 13 December 2006, aims to „promote, protect and guarantee the full and equal enjoyment of all human rights and all fundamental freedoms of people with disabilities and to promote respect for their intrinsic dignity”. In particular, article 9, concerns accessibility, and claims that States must take „...adequate measures to guarantee people with disabilities, on an equal basis with others, access to the physical environment, to transport, to information and communication systems and technologies, and other equipment and services open or provided to the public, both in urban and rural areas...”. These measures also include the identification and elimination of obstacles and barriers limiting accessibility (such as architectural barriers) (United Nations, 2016).

The Global Code of Ethics for Tourism (GCET) adopted by the World Tourism Organization in 1999, highlights the role of tourism, collectively, acknowledging and strengthening social and cultural ties between peoples, while respecting their diversity. The Code, on the individual level, highlights, on the one hand, that tourism allows everyone to enjoy rest, cultural knowledge and enjoyment of natural resources. On the other hand, the Code emphasizes that the development of tourism needs to respect the natural and cultural environment. Thus, all actors must aim at protecting the environment. Moreover, another objective of the Code is to ensure to all tourists, including those with special needs, the right to access to the natural area equally and without any impediment (UNWTO, 1999).

The Montreal Declaration, drawn up by the Bureau International du Tourisme Social in 1996, defines social tourism. The goal is to strengthen the concept that tourism, stating that it must be accessible to all without distinction, should allow the greatest number of people accessing to it. The principles enshrined in the Declaration, recognizing the physical, social and economic benefits deriving from social tourism, aim at the inclusion of all the potentially interested subjects and wish a fight against inequalities towards all those who have a different culture, have less financial means, have reduced physical abilities or live in a developing country (ISTO, 1996).

2.2. European Regulations

The Charter of Fundamental Rights of the European Union was proclaimed on 7 December 2000 in Nice (Nice Charter) and defines a group of rights and freedoms of exceptional importance to be guaranteed to all citizens of the Union. Article 26 states that „The Union recognizes and respects the right of disabled people to benefit from measures aimed at guaranteeing their autonomy, social and professional integration and participation in community life” (European Union, 2000).

The European Union has issued others specific documents, among the most important resolutions, there's the one released on 26 November 1993 about the accessibility of transport (European Union, 1993) and another one published on 20 December 1996 on equal opportunities for disabled people in all fields (European Union, 1996), including leisure time.

2.3. Italian Legislation

Also, in Italy there is a detailed regulation on accessibility and social inclusion, both at the state level and at the level of the individual regions. Following these rules, several Italian national parks have adopted guidelines to make their areas accessible and offer all the services that people with special needs (www.turismoaccessibile.eu).

Law no. 118/1971 is the first Italian law, which reaffirms the need for public buildings to be accessible to all and introduces the restriction on the removal of architectural barriers in the existing buildings.

The Law no. 41/1986 provides funding for specialized renovations to the elimination of architectural barriers with the obligation of compliance with the Decree of the President of the Italian Republic no. 384/78 also extended to interventions carried out with grants or public subsidies. This law establishes the „general design criteria”: accessibility is no longer considered as a discretionary element but becomes a quality requirement, indispensable even in the presence of historical-artistic constraints. In fact, the highest level of accessibility assumes that every part of the building and its equipment can be used by all persons, including those with reduced or impaired motor or sensory capacities. Indeed, the highest level of accessibility presupposes that every part of the unit and its actions have been used by all people, including those with reduced or impaired motor or sensory skills, easily and safely.

The Decree of the Minister of Public Works n. 236/1989 defines the three levels of building quality, lists the different types of buildings, indicating the degree of usability required, that is, whether the buildings must be accessible (art. 4), visitable (art. 5) or adaptable (art. 6).

Law no. 104/1992 (framework law on the handicap) highlights the need to make sports facilities, bathing facilities, motorway services, collective transport services, accommodation facilities and related tourist services, building structures and buildings accessible to all users' railway carriages of the Italian State Railway Authority, by benefitting from subsidized housing. It also provides the possibility of carrying out temporary works to overcome architectural barriers for historic buildings which are subject to restrictions. The Decree of the President of the Italian Republic no. 503/1996 was issued with the main objective of standardizing the regulations for public buildings with those for private buildings (the aforementioned Ministerial Decree no. 236/1989).

3. BEST PRACTICES ADOPTED IN ITALIAN NATIONAL PARKS

The accessibility of a protected area is measured by the degree of accessibility of places and structures connected to it; that usability should also be seen as a possibility for people with special needs to access a structure or open space to fully enjoy services and activities connected to it or related to it. There are many projects and best-practice models in terms of accessibility and usability for the disabled promoted in recent years, one of the first steps was the Norcia Declaration in 2003. This document asks the European Union to „define a community policy for protected natural areas; to introduce in European programs particular attention to the use of nature for citizens with disabilities; to start the discussion on a non-discrimination directive on disability as the conclusion of the European Year „while member states are asked to” promote good practices and train park staff, technicians and operators”. Managing bodies play an important role to ensure accessibility in parks. These entities must include in their statutes and regulations instruments that allow the usability and training of park operators and technicians. This is also a function of the creation of an „accessible building” that places the individual („able” and „disabled”) at the center even before the more formal and aesthetic canons. In this sense, the „Universal Design” or „Design for all” approach is aimed at designing spaces without taking into account age and psychophysical ability. (www.appuntiturismo.it) (www.italiaccessibile.it).

Subsequently, in 2003, the „Parks for all: usability for an extended user” project, created by the ACLI Anni Verdi Association, communicated the problems of accessibility for the usability of all citizens and competent or decision-makers in protected natural areas, sites, services, equipment and means of transport. This communication took place through the creation of the website www.parchipertutti.it and implementation of „Guidelines for accessibility and use of national parks by a consumer extended to persons with disabilities, the elderly, the children”. These guidelines provide the rules to monitor accessibility of all disabled persons to the existing structures of a park (www.minambiente.it).

The Italian Federation of Parks and Natural Reserves (Federparchi) has grouped a list of all the paths and nature trails of the Italian Protected Natural Areas, which are currently accessible to all. These include: the path for the blind (PLIS Colline di Brescia), the underwater path for disabled (Protected Marine Area of the Cinque Terre), the nature trail for the blind and the sensor of Parco Naturale Lombardo della Valle del Ticino, a path for everyone at Sacro Monte di Varallo (www.europarc.it) (www.parks.it).

An important contribution was also one of the National Parks. Italy has 24 national parks, and some of them have adopted practices to facilitate access to people with disabilities. Below there is a review of the best practices implemented by the Bodies to make the Parks more accessible.

In the Cinque Terre National Park, there is an underwater path for the disabled (www.parconazionale5terre.it).

In the Circeo National Park, a walkway has been built which is also accessible to people with walking difficulties. In addition, the project was implemented in the park: „The friendly park” intended for children of primary school and kindergarten, which also includes the participation of children with disabilities to stimulate their sensory skills, to encourage inclusion and raise the acceptance of their communities (www.parcocirceo.it).

The Dolomiti Bellunesi National Park Authority proposes, in collaboration with the AIPD (Italian Association of People Down), a guided excursion program and environmental interpretation workshops in areas of the park, which are accessible to the disabled. The activities are designed specifically for disabled people, according to different disabilities, and people with Down syndrome. These activities are extended to all, to bring „able-bodied” people closer to the reality experienced daily by the disabled. Some examples of eligible activities are: workshops on flower scents and tactile recognition of natural objects for blind people, recognition of the noises of the forest and of the verses and songs of the animals, excursions „silent” with earplugs to understand the reality experienced by deaf. In the park, three parking areas have been created for disabled people with public toilets, one of which for disabled people. The Dolomiti Bellunesi National Park has also joined the „Nature without barriers” initiative, promoted by Federtrek – Hiking and the Environment (a federation made up of about 40 associations), which brings together events throughout the national territory to promote participation in nature excursions, including of people with disabilities (blind, with reduced mobility or with other difficulties) (www.dolomitipark.it).

In the Gargano National Park, two paths for the visually impaired were completed, complete with signs with Braille characters, handrails with a guide and parapet function, pile drivers, and two specific tables for people with motor disabilities complete with benches. Within the framework of facilitating accessibility for people with disabilities in the protected sea area of the Tremiti Islands, various initiatives have been implemented, in particular a diving course to guide blind people accompanied by diving instructors (Cappelletti et al., 2019) (www.parcogargano.it/).

The Gran Paradiso National Park has expanded the tourist offer of the protected area also for the disabled. On their website, there is a section where you can find information on the accessibility of the protected natural area, the accommodation facilities, and on some paths in the area. The information of Park structures and potentially accessible routes was collected; each structure has its own detail sheet in order to inform about the degree of accessibility (www.pnpgp.it/parco-accessibile).

The Gran Sasso National Park and Monti della Laga, in implementation of the Action Plan of the European Charter for Sustainable Tourism, allows free use of the persons concerned of five carriages „jolette”, a special mode of transport, with the help of two companions, it also allows people with disabilities and impaired mobility to walk the paths of the park. Through a network of operators, it is thus possible for people with special needs to take advantage of accessible and sustainable tourism-recreational offers (www.gransassolagapark.it/).

At the National Park of La Maddalena there are two walkways for the disabled that allow direct access to the beach and the sea. All those architectural barriers that prevented access have been

removed. There are also parking spaces reserved for the disabled near the entrance to the catwalks www.lamaddalenapark.it.

Inside the Monti Sibillini National Park, a path has been created with environmentally friendly material that can also be used with strollers and wheelchairs (www.sibillini.net).

The Sila National Park devotes particular attention to ensuring maximum accessibility to all its visitors. In particular, the Visitor Centers „Cupone” and „A. Garcea” are equipped with two means of transport for people with reduced mobility, the wheelchairs for the disabled called „Joelette”. The Park Authority has printed information brochures in Braille for the blind. The „Cupone” visitor center offers itineraries for visitors with walking difficulties and for blind and partially sighted people. There is also a „Botanical Garden” accessible to the blinds, thanks to the presence of panels of mp3 audio files that explain the various essences present. At the Visitor Center „A. Garcea” there is a path dedicated to people with motor disabilities. It has been also realized a path equipped with tactile signaling systems orientation to the ground and handrails and tables describing the surroundings, built on a metallic substrate with alphanumeric characters in Braille for blind and visually impaired (www.parcosila.it/it/visita-il-parco/turismo-accessibile).

4. CONCLUSION

In this paper, the accessibility legislation and the best practices adopted in the National Parks in Italy have been presented. The legislation available to encourage the development of accessible tourism in Protected Natural Areas has allowed the proliferation of the best practices in many Italian national parks. From this study, it emerged that, to encourage their diffusion in the Protected Natural Areas, it would be appropriate to define guidelines that organize such a system according to positive experiences of accessibility for people with disabilities. This could be done, more easily, by creating a network between the management entities of the national parks that have implemented these best practices, reaching even to the creation of an association that certifies a label dedicated to „accessible park” with the highlight levels of accessibility.

REFERENCES

- Cappelletti G.M., Bianchi P., Russo G., Strizzi C. (2019). Accessibility and Facility of the Disabled: the Consorzio di Bonifica Montana del Gargano and Parco Nazionale del Gargano Case Studies, The 5th International Scientific Conference on Knowledge Based Sustainable Development – ERAZ 2019, Budapest May 23, 2019 www.eraz.org (in press).
- Dudley, N. (2008). IUCN Guidelines for Applying Protected Area Management Categories. <https://www.iucn.org/content/guidelines-applying-iucn-protected-area-management-categories-marine-protected-areas-1> (Accessed 01.11.2019).
- European Union (1993). 98/376/EC: Council Recommendation of 4 June 1998 on a parking card for people with disabilities Official Journal L 167, 12/06/1998 (25-28) <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31998H0376&from=EL>
- European Union (1996). Resolution of 20/12/1996 on equality of opportunity for people with disabilities, http://ec.europa.eu/employment_social/soc-prot/disable/com406/res_en.htm
- European Union (2000). Charter of fundamental rights of the European Union, Official Journal C364, 18/12/2000 (1–22) [https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000X1218\(01\):en:HTML](https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000X1218(01):en:HTML)

- IUCN UNEP WWF (1980). Word Conservation Strategy, Living Resources Conservation for Sustainable Development. <https://portals.iucn.org/library/node/6424> (Accessed 01.11.2019).
- ISTO (International Social Tourism Organisation) (1996). Declaration in Montreal, Towards a humanist, social vision of tourism <http://www.oits-isto.org/oits/files/resources/14.pdf> <https://portals.iucn.org/library/efiles/documents/wcs-004.pdf> (Accessed 01.11.2019).
- Kastenholz E., Eusébio C. and Figueiredo E., (2015). Contributions of tourism to social inclusion of persons with disability, *Disability & Society*, 30 (8), 1259-1281, DOI: 10.1080/09687599.2015.1075868.
- Maller C., Townsend M., Pryor A., Brown P., St Leger P., (2006). Healthy nature healthy people: 'contact with nature' a san upstream health promotion intervention for populations, *Health Promotion International*, 21 (1), 45–54. <https://doi.org/10.1093/heapro/dai032>
- Matteucci, E. (a cura di) (2000). Il verde per tutti (6), in Collana Progettare con il verde (a cura di) Mariella Zoppi et al. Ed. Alinea, Firenze.
- McKercher B, Darcy S, (2018). Re-conceptualizing barriers to travel by people with disabilities, *Tourism Management Perspectives*, 26, 59-66.
- Michopoulou E., Buhalis D., (2013). Information provision for challenging markets: The case of the accessibility requiring market in the context of tourism, *Information & Management*, 50, 229–239.
- Ministero Ambiente-ACLI Anni Verdi, (2003). Parchi per tutti, Linee guida dei parchi italiani https://www.minambiente.it/sites/default/files/archivio/biblioteca/dpn_linee_guida_parchi.pdf
- Setola N, Marzi L., Torricelli M.C. (2018). Accessibility indicator for a trails network in a Nature Park as part of the environmental assessment framework, *Environmental Impact Assessment Review* 69, 1–15. (Accessed 04.11.2019).
- Simon D., (2010). Inherent complexity: Disability, accessible tourism and accommodation information preferences, *Tourism Management*, 31, 816-826.
- United Nations (1948) Universal Declaration of Human Rights, Resolution 217A, 10 December 1948. <https://www.un.org/en/universal-declaration-human-rights/> (Accessed 09.11.2019).
- United Nations (1971) Declaration on the Rights of Mentally Retarded Persons, Resolution 2856 (XXVI) of 20 December 1971. <https://www.ohchr.org/EN/ProfessionalInterest/Pages/RightsOfMentallyRetardedPersons.aspx> (Accessed 10.11.2019).
- United Nations (1975). Declaration on the Rights of Disabled Persons, Resolution 3447 (XXX) of 9 December 1975. <https://www.ohchr.org/EN/ProfessionalInterest/Pages/RightsOfDisabledPersons.aspx> (Accessed 10.11.2019).
- United Nations (1979). Declaration on the Rights of Deaf-Blind Persons, Decision 1979/24 <https://digitallibrary.un.org/record/33974> (Accessed 10.11.2019).
- United Nations (1982). World Programme of Action Concerning Disabled Persons, Resolution 37/52 of 1982. https://www.un.org/ga/search/view_doc.asp?symbol=a/37/351/add.1 (Accessed 10.06.2019).
- United Nations (1994). Standard Rules on the Equalization of Opportunities for Persons with Disabilities, Resolution A/RES/48/96, 4 March 1994. <https://www.un.org/development/desa/disabilities/standard-rules-on-the-equalization-of-opportunities-for-persons-with-disabilities.html> (Accessed 10.11.2019).
- United Nations, (2016). Convention on the Right of the Persons with Disabilities of 2016. https://www.un.org/disabilities/documents/convention/convention_accessible_pdf.pdf (Accessed 10.11.2019).

- UNWTO (1999). Global Code of Ethics for Tourism, https://www.accessibletourism.org/re-sources/unwto_global_code_of_ethics_en.pdf (Accessed 10.11.2019).
- Vila T.D., Darcy S., González E.A., (2015). Competing for the disability tourism market – A comparative exploration of the factors of accessible tourism competitiveness in Spain and Australia, *Tourism Management*, 47, 261-272.
- WHO (World Health Organization) (2015), Global disability action plan 2014-2021 https://apps.who.int/iris/bitstream/handle/10665/199544/9789241509619_eng.pdf;jsession-id=1EA3C5B20D412D999753500107FDFB7B?sequence=1 (Accessed 10.11.2019).
- www.turismoaccessibile.eu (Accessed 11.11.2019).
- www.appuntiturismo.it (Accessed 11.11.2019).
- www.italiaccessibile.it (Accessed 12.11.2019).
- www.europarc.it (Accessed 12.11.2019).
- www.parks.it/indice/Esentieripertutti.php (Accessed 12.11.2019).
- www.lamaddalenapark.it (Accessed 12.11.2019).
- www.parconazionale5terre.it (Accessed 12.11.2019).
- www.parcocirceo.it (Accessed 12.11.2019).
- www.dolomitipark.it (Accessed 12.11.2019).
- www.pnpgp.it/parco-accessibile (Accessed 12.11.2019).
- www.gransassolagapark.it/ (Accessed 12.11.2019).
- www.sibillini.net (Accessed 12.11.2019).
- www.parcosila.it/it/visita-il-parco/turismo-accessibile (Accessed 12.11.2019).
- www.parcogargano.it/ (Accessed 12.11.2019).

Contribution of Authors

Introduction, Conclusion and References (Cappelletti G.M., Di Noia A.E.); Regulations Requirements for Structures for the Reception on the Disabled (Cappelletti G.M.); Best Practices Adopted in Italian National Parks (Di Noia A.E.); Supervision (Nicoletti G.M.).

INTERCULTURAL TRENDS IN TOURISM OF THE MONTENEGRIN COAST

Maria Popovic¹
Dijana Medenica Mitrovic²

DOI:

Abstract: *In this article tourism is seen as a form of contact between representatives of different cultures. Here are presented trends which are arising from the meetings of representatives of the local population on the one side and tourists on the other, as bearers of different cultural identities and values.*

In the first part of the article, which is based on theoretical approaches, are listed tendencies at the global level and interpreted the results of research of relevant institutions in the field of tourism.

The second part of the article examines the tradition of intercultural contact in the tourism of Montenegrin coast. There is given the review of the structure of tourists who are staying in this region, by the number of visits and nights spent. The article gives analysis of current trends, compare them with global and outlines the most significant changes that tourism development brings.

The article links global socio-cultural, economic, political and other influences that determine changes in the representation of certain traditional tourists.

Dominantly is being analyzed the period of the last five years during the summer tourist season, when the period of the intercultural contacts is largest.

Keywords: *Tourism, Culture, Interculturalism.*

1. TRENDS OF INTERCULTURAL MEETINGS IN THE WORLD

Contemporary travels, dominantly for tourism purposes, show an intensive tendency of growth throughout the previous two decades. However, it should be emphasized, that this is relatively constant trend of past decades. Increasing of economic standard, the availability of destinations with cheaper flight tickets, as well as an increasing marketing presence of destinations globally had a big impact on a growth of tourist-motivated trips. There is bigger and bigger number of countries where tourism is the main economic activity and that see their perspective precisely in tourism development.

The most recent UNWTO researches (e-unwo.org) speak in favor of the fact that global consumption in tourism reached over US \$ 1.4 trillion during 2018. According to the above China has the highest consumption by far, followed by the USA, Germany and the United Kingdom – Great Britain, France, Australia, Russian Federation, Canada, Korea and Italy. Real increase of spending on tourist trips was most increased by France and the Russian Federation, followed by USA.

The information that were provided by World Tourism Organisation, exactly speaks about increasing trend of number of tourists in the world. In the chronological plane, we note moderate

¹ Faculty for Business and Tourism Budva, Adriatic University Bar, Montenegro, Rozina bb 85310 Budva, Montenegro

² Faculty for Business Management Bar, J. Tomasevica 30/78, Montenegro

and constant increase of number of tourists in the period from 1980. to 2005. with an increase from 240 million to 750 million of tourists. The more intensive increase through the next seven years, is noted at the end of 2012. with the incredible and record number of one billion tourists. That one, extremely growing trend, is continued until 2018. as we can see on the sketch 1. Screenings of the World Tourist Organisation speaks in favor of the distinctly growing trend in the number of tourists until 2030. when this number is expected to increase to 1.8 billion of tourists (sketch number 3).

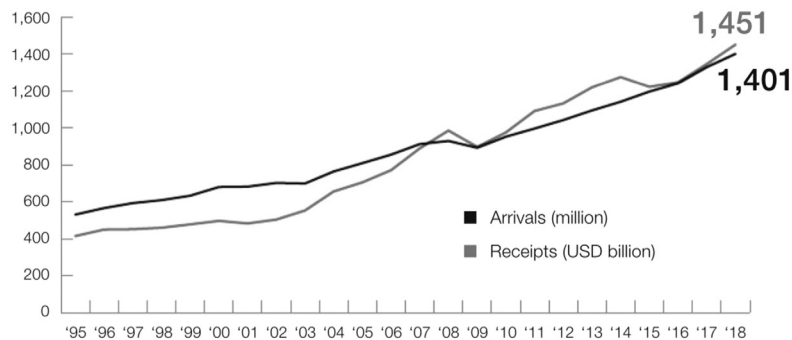


Figure 1: International tourist arrivals (million) and tourism receipts (USD billion).

Source: e-untwo.org

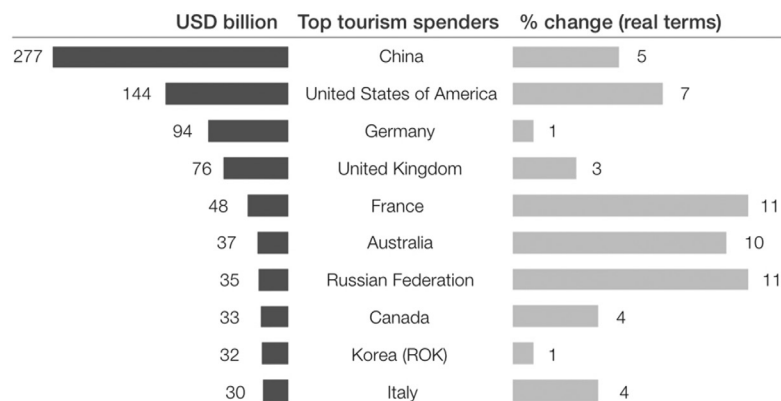


Figure 2: Top 10 countries by international tourism spending, 2018.

Source: e-untwo.org

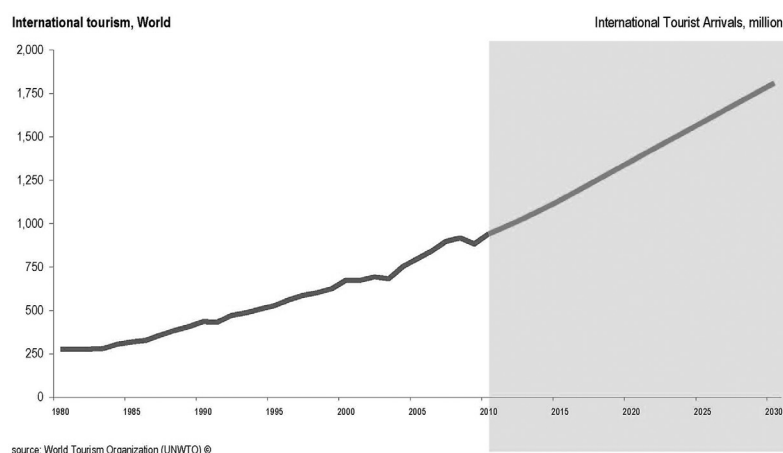


Figure 3: Forecast of increase of international tourist's arrivals until 2030.

Source: e-untwo.org

The growing tendencies of the number of the tourists in the world, speak in favor of intensifying the number of intercultural meetings, on almost every meridian of the world. This fact is confirmed by the results of the research of UNWTO where it is said that only four from five tourists travel to its region.

2. TOURISM OF MONTENEGRIN COAST

Tourism as strategic economic activity in Montenegro is being recognized in 1960s of the last century and it is being incorporated into the state system, through systematic decisions that will improve it permanently. Since then, mass tourist arrivals have marked its more or less constant development, with periods of stagnation or almost complete disruption after the big Earthquake 1979. and also, in the periods of sanctions and wars from 1991. to 2000. After the devastating earthquake, followed period of reconstruction was lasting about four years with the generous assistance of all former Yugoslavs republics and foreign help and assistance. After the earthquake, especially devastated was the Montenegrin coast.

The next phase of stagnation of trends of tourism development in Montenegro is caused by major political fractures on the Balkan political scene. Specifically, it came to a breakdown of Yugoslavia, the extremely powerful economic and political crisis, devastating wars in the environment and sanctions.

Apart from the mentioned periods, the second half of the last century is marked by several essential elements, which have contributed to the growing trend of tourist movements on the territory of Montenegro:

- Active investment politics,
- Development of a tourist infrastructure and material base of tourism,
- Increased number of highly qualified staff who deals in tourism,
- Adoption of strategically important documents that set guidelines for the future development of Montenegrin tourism.

For our research we will cite as a relevant, piece of information of the growth of tourist traffic from the period from 1960. to 1990., considering it according to the statistics of the realized tourist traffic (table no.1: according to Radovic, 2010:47). Just before the devastating Earthquake of 1979, it is marked the highest increase in the number of tourists (in the 1978) and they were dominantly domestic.

The structure of the guests at the beginning of the period mentioned, shows relatively low representation of foreign tourists, in 1960s – just 8%, while its maximum/highest percentage is marked in 1987. – 31%. As its can be seen, the maximum number of registered tourists was recorded in 1987s with 1,281,962 tourists.

It should be emphasized that tourist traffic at the level of Montenegro is traditionally disproportionately realized, and also, we can tell that Budva is the capital of Montenegro in terms of traffic tourism. The entire coastal region also has a higher turnover than other regions.

„Market specifics are reflected in the long-term trend of demand towards the Mediterranean, with sea and sun as primary motives, emphasized seasonal concentration in the period from June to September, differentiation prices by season with the peak in July and August, lower

decline in June and September, and a general decline, below the economically acceptable level in April, October, and the months preceding and following them, predominantly focusing on organised traffic and allotment sales, significantly reduced market interests in winter etc.” (Ratkovic,2003:132). In the observed period mountain tourism is in the initial phase. Central and northern regions, in the comparison with the Coastal, are very far. The most important step forward was made in Zabljak, which tourist offer is leading in relation to other northern municipalities. Valorisation of resources in the municipalities: Kolasin, Plav and Rozaje – „it is only in the stage of humble beginnings” (Ratkovic,2003:132).

Table no.1: Tourist traffic from 1960. to 1990.

| Year | Guests | | | Overnights | | |
|-------|-----------|----------|---------|------------|-----------|-----------|
| | total | domestic | foreign | total | domestic | foreign |
| 1960. | 239.711 | 230.583 | 19.128 | 1.597.348 | 1.518.482 | 78.865 |
| 1965. | 409.336 | 315.265 | 94.071 | 2.784.819 | 2.188.471 | 596.348 |
| 1970. | 593.000 | 401.000 | 192.000 | 4.424.446 | 2.859.735 | 1.564.711 |
| 1975. | 883.141 | 599.088 | 284.053 | 6.991.142 | 4.742.555 | 2.248.625 |
| 1978. | 1.195.225 | 845.699 | 349.526 | 9.300.624 | 6.587.148 | 2.713.476 |
| 1979. | 521.714 | 378.463 | 143.351 | 2.921.185 | 2.142.555 | 778.630 |
| 1980. | 874.169 | 655.612 | 218.557 | 7.298.773 | 5.569.591 | 1.729.182 |
| 1985. | 1.241.957 | 863.280 | 378.677 | 10.513.545 | 7.105.143 | 3.408.402 |
| 1987. | 1.281.962 | 879.591 | 402.371 | 10.823.867 | 7.060.215 | 3.763.652 |
| 1988. | 1.189.200 | 828.800 | 360.400 | 10.011.300 | 6.661.400 | 3.349.900 |
| 1989. | 1.192.100 | 861.400 | 330.700 | 9.945.200 | 6.915.500 | 3.029.700 |
| 1990. | 1.112.700 | 808.100 | 304.600 | 9.352.808 | 6.423.100 | 2.929.700 |

Source: Statistical Office of Montenegro (yearbooks), by: Radović, 2010.

Radovic also talks about great concentration of tourist traffic in the coastal municipality Budva and sums up the following data: in 2008., the total number of nights spent in this area of municipality amounted to 42% of the total number of overnight stays in the territory of Montenegro, 23% domestic and even 45% foreign guests (Radovic,2010:52). According to annual information, provided by Ministry of tourism of Montenegro, similar trend is being continued in 2009 – looking at the number of nights spent in Budva ahead with the 44% of total numbers of nights realized. (Figure 4)

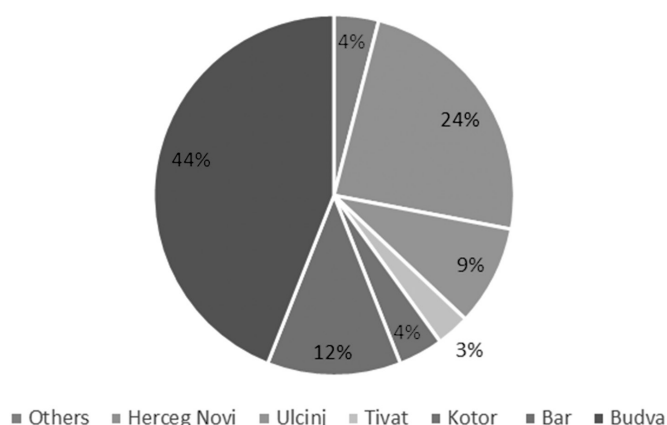


Figure 4: The number of overnights in municipalities in 2009, Ministry of tourism and NTO, 2010.

The period of last decade of the tourism development of Montenegrin coastal is marked by a rise of numbers of visits and overnight stays (table No.2).

Table No.2: The number of realized arrival and overnights from 2010. to 2018.

| Year | Number of arrivals | Number of overnights |
|------|--------------------|----------------------|
| 2010 | 1 262 985 | 7 964 893 |
| 2011 | 1 373 454 | 8 775 171 |
| 2012 | 1 439 500 | 9 151 236 |
| 2013 | 1 492 006 | 9 411 943 |
| 2014 | 1 517 376 | 9 553 783 |
| 2015 | 1 713 109 | 11 054 947 |
| 2016 | 1 813 817 | 11 250 005 |
| 2017 | 2 000 009 | 11 953 316 |
| 2018 | 2.204.856 | 12.930.334 |

Source: Statistical yearbooks, MONSTAT 2010-2019.

MONSTAT comparative data supports their thesis. Table No2. gives comparative figures data for the period from 2010 to 2019 for the whole year. In the structure of overnight stays by types of tourists in 2018, the Montenegrin coastal is dominantly represented. Coastal towns record representation of about 95% an average annually (according to Statistical yearbook 2018, Monstat).

3. TOURISTS ON THE MONTENEGRIN COAST AND TENDENCIES OF INTERCULTURAL MEETINGS

The tendency of increasing of intercultural meetings is immanent to the tourism development of Montenegro. Statistically data from the National Tourist Organisation and the Monstat – Bureau of Statistics testify to this through an overview of tourist arrivals and overnight stays by country of origin. The first decade of 21st century is marked dominantly with the tourists from the former Yugoslav countries. However, and here came to changes, as well. If we compare years 2006 and 2010, we can record that the number of tourists from Serbia decreased from 68,82% to 41.16%, and the increase of the number of tourists from Bosnia and Herzegovina from 4.65% to 8,16% in 2010. Except of these marked changes, Montenegro like a destination is again becoming more interesting to the European market, predominantly to Russian market, with a steady increase – from 2.31% in 2004 to 11.09% in 2010. (according to Popovic, 2014).

Intercultural meetings tend to grow in this decade as well. Sketches cited no.5,6,7,8,9, that are following this text, testify through an overview of the structure of tourists by the number of overnight stays by country of origin in 2014,2015,2016,2017 and 2018.

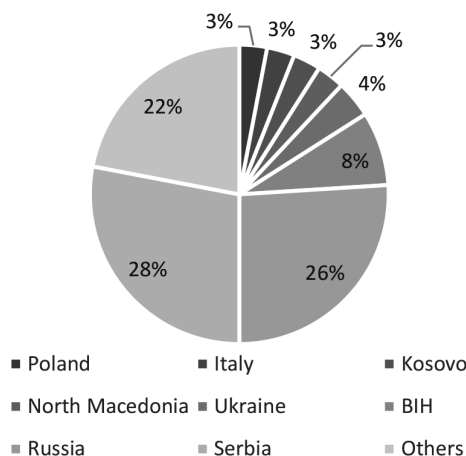


Figure 5: Tourist structure for August 2014. by the overnights realized, MONSTAT, 2014.

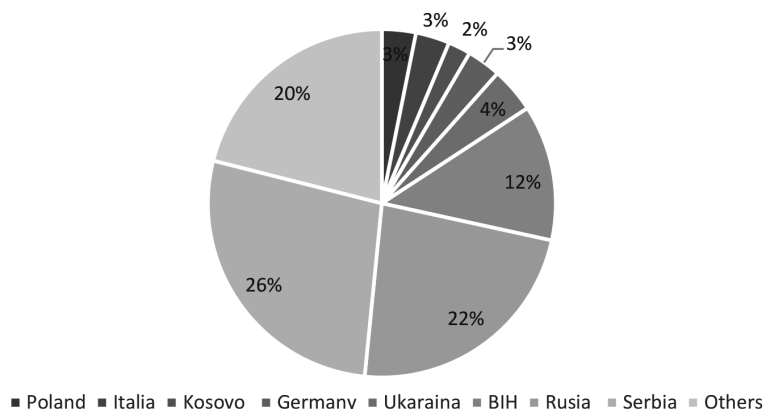


Figure 6: Tourist structure for August 2015. by the overnights realized, MONSTAT, 2015.

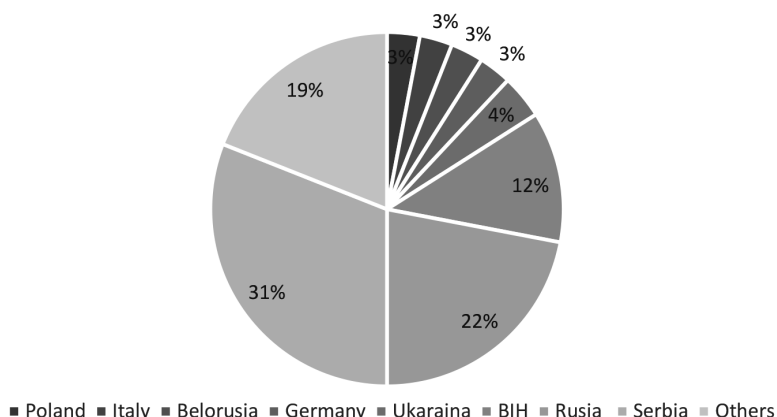


Figure 7: Tourist structure for August 2016. by the overnights realized, MONSTAT, 2016.

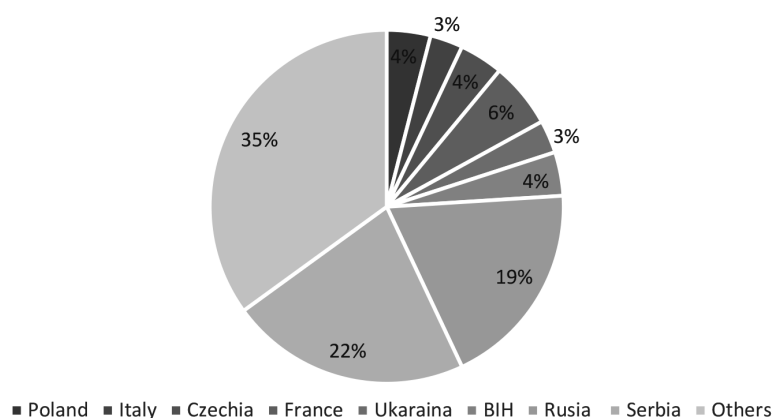


Figure 8: Tourist structure for August 2017. by the overnights realized, MONSTAT, 2017.

The most represented guests in the observed period are guests from Russia and Serbia. In the territory of Montenegro, they are not considered as new guests. The former Yugoslav territory is dominant broadcast market in the tourism of Montenegrin coast. Intercultural meeting and communication between host and guest here it is very close, due primarily to the same language, similar value standards, good knowledge of opportunities in the region, famous natural and anthropogenic characteristics of the Montenegrin coast. Many decades of living in the same country contributed to this. The traditional representation of Russians on the coast of Montenegro has made that intercultural communication between host and guest is expected to be familiar and predictable. Most political, economics, the social and cultural changes that have taken

place in this region have an impact on intercultural communication, so the traditional guest is a relic of the past and the new guest is the reality. It is the same with the guests from Ukraine and the other countries of the former USSR.

Current trends, which primarily characterize 2018 and the past season, are increasing guest representation from Western Europe: United Kingdom, France, Germany, Poland... This are famous guests because they are traditionally associated with so-called „golden-age” of Montenegrin tourism. Golden age of Montenegrin tourism lasted from the beginning of 1960s to the beginning of 1990s. We can say that in the period mentioned, the most of tourists were Germans and Englishmen, like in the other Mediterranean countries. Big season lasted for seven months. (according to Ratkovic, 2003). Evocative contents contribute to good intercultural communication. Plus, there it is a tendency of native population to learn their languages and learn about their culture. Traditional Montenegrin hospitality has generally come to the expression in the host-guest relation. This relationship has a personal character that is evidenced through the relationship of the guest and travel agent but also through the relationship of guests communicating in the destination. The quality of that relationship is conditioned by the nature of relationship and the openness to intercultural communication for both – as guest so as host.

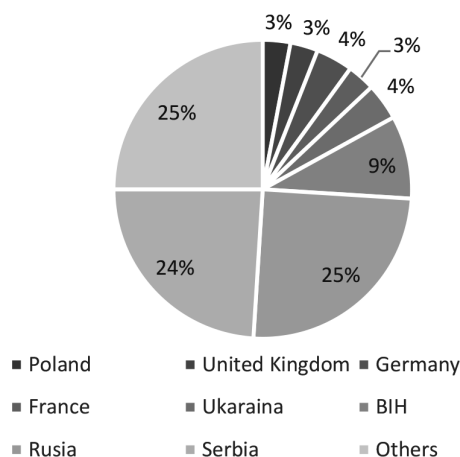


Figure 9: Tourist structure for August 2018. by the overnights realized, MONSTAT, 2018.

Readiness for intercultural communication depends on many factors and for our research we will list just the most important ones. The values of other cultures should be well-known. In Montenegro, this field is mastered in formal and non-formal education. Intercultural management is the part of syllabus of most tourism programs. In addition, in higher-education institutions are being organised courses for tourist guides and managers on various levels, where also can be studied cultural determinants of the most represented broadcast markets. Also, within the hotel companies are being developed training programs which enable good intercultural communication.

Intercultural communication is affirmed by tourists' willingness to open for values which destination provide. In addition to planned visits and excursions intended for tourists, in some hotels of the Montenegrin coast are being organised thematic nights, which aim is promotion of the local culture, gastronomy and folklore. Practice shows that tourists have a higher degree of interests for these contents, they are happy to visit it and actively participate in its performance. Also, animation content programs provide tourists the opportunity for greater openness and direct integration into the local cultural context.

Avoiding the stereotypes contributes to better intercultural communication (Stanojevic, 2008:147). Formal and non-formal education, panel discussions and consultants affirm the overcoming of stereotypes in the wider community and tourism employees are trained to prevent stereotypes and exclude it from the professional practice. Flexibility is the most prevalent challenge in the intercultural communication, which requires deeper analysis and more appropriate treatment. It is an imperative of modern tourism primarily because its current tendencies imply development and permanent changes on the global and local level.

4. CONCLUSION

In this article, we talked about intercultural interactions in tourism and intercultural trends in the tourism of Montenegrin coast. It is concluded that the very fast growth of tourism development increased the opportunities for intercultural meetings. This fact provides UNWTO where it is marked that four of five tourists today travel to their region.

From 1960s until today, tourism in Montenegro had periods of less or more development and periods of total stagnation (after the big earthquake in 1979). The entire Montenegrin coast is more developed in field of tourism than the other regions (northern and central part of the country). Budva is the most developed tourism municipality in Montenegro. The development of the mountain tourism is just at the beginning.

Tendency of growth of intercultural meetings is characteristic in the tourism development of Montenegro. The most important relation is between host and guest. Guests from Serbia and Russia are not new guests. The intercultural meetings with Russian tourists have done famous and predictable relation between guests and hosts.

As the tourism is being developed, tourists travel to Montenegro from Western Europe – United Kingdom, France, Germany, Poland. With these tourists started so-called „golden age” of Montenegrin tourism.

Through different programs (excursions, thematic nights, animations) native people are doing their best so that tourists can learn about Montenegrin culture, tradition, heritage, language, gastronomy. The response of tourists to this is at the high level of interest.

At the end, we can say that the flexibility is imperative of modern tourism and the challenge which is in the intercultural communication most representative.

REFERENCES

- Radovic, Miljan (2010): Tourism geography of Montenegro, Faculty of tourism, hospitality and trade, Bar and Faculty for tourism and hospitality, Kotor.
- Ratkovic Rade (2003): Montenegro's Strategic position at the beginning of the Third Millennium, Time and Progress – Montenegro at the turn of the Millennium (book 63), CANU, Podgorica
- Maria Popovic (2013): Cultural and tourist valorisation of historical core of Cetinje, Communications, media and culture, Yearbook of the Faculty of Culture and Media of Megatrend University in Belgrade

Zecevic Stanojevic, Olgica (2007): European cultural environment, European University, Belgrade

Zecevic Stanojevic, Olgica (2008): Cultural relations, European University, Belgrade

Jagic, Stjepan (2004): „Immanence of interculturalism in tourism“, Sociology of Villages (Journal of spatial and sociocultural development research), Zagreb

Publications:

UNWTO Tourism highlights 2018 Edition

Statement No.257, Statistical Office of Montenegro, Podgorica, 2014.

Statement No.213, Statistical Office of Montenegro, Podgorica, 2015.

Statement No.181, Statistical Office of Montenegro, Podgorica, 2016.

Statement No.172, Statistical office of Montenegro, Podgorica, 2017.

Statement No.34, Statistical Office of Montenegro, Podgorica, 2019.

Work programme for 2017, National tourist organisation of Montenegro, Podgorica, January 2017.

Internet sources:

www.e-unwto.org

www.monstat.org

LIMITATIONS OF INTERCULTURAL MANAGEMENT IN THE DEVELOPMENT OF TRADE RELATIONS BETWEEN COUNTRIES

Dalibor Misirača¹

Dragan Gnjatić²

DOI:

Abstract: *With the internationalization of business and the fact that many organizations are expanding into multiple different countries, it is important that managers understand the impact of national culture on businesses. National culture determines the rules that determine how businesses operate in a social context. There are different cultures in the world today, so, from the point of view of international management it is very important to understand their influence on thinking, beliefs, behaviors, perceptions, managers' attitudes, their stereotypes, ideology, approach to strategy formulation, decision making, attitude towards risk, attitude towards cooperation and competition, orientation towards stability or innovation, and tendency towards change. The primary role of intercultural management is based on the creation of patterns that will follow the flow of national specificity in the field of international business. The aim of this scientific discipline is based on achieving better integration of different peoples and raising the level of tolerance in international business. The commonly used foreign trade analysis indicators in international business rely on import-export components and their volume. The purpose of this paper is to show, in addition to basic indicators of trade, the extent to which the multicultural effect has contributed to the development of trade relations of individual countries and to determine the possibility of creating conditions for optimal business in the globalization world. The methodology of work will be based on research of customer orientation and their preferences for individual products in accordance with primary indicators and indicators based on intercultural bases.*

Keywords: *Intercultural, Management, Trade, Globalization.*

1, INTRODUCTION

Globalization, as the new name for the idea of conquering the world, is a phenomenon that is as old as the civilization itself. This idea has historically emerged through „the influence of world religions, imperial conquests, expansion of trade networks”, and it only kept changing its „forms, directions and intensities from one epoch to another or from one stage of social development to another.” (Grgušević, 2010)

Electronic global village, multinational corporations, satellite information transmission, digitization, transnational media conglomerates, information industry, entertainment industry, increasing interconnectivity, world system are just some of the direct associations to the phenomenon, formerly known as Americanization, increasingly referred to as mundialization or globalization, or a global cosmopolitan society (Zubanović & Roca, 2010).

Globalization, as a process that has been present for several decades, has led to many changes in all segments of life. The most significant consequences of the globalization process are the integration of countries, the formation of a global market, global companies, global brands,

¹ University of Travnik, Bosnia and Hercegovina

² University of Travnik, Bosnia and Hercegovina

global culture and even global consumers. Globalism is a process that affects business systems, their organizational structure and all available resources with the aim of perceiving the world as one market (Žikić & Koščec, 2012).

In a time marked by so many changes, innovations, advancements in technology, telecommunication facilities, complicating and accelerating the business process, the average customer fails to manage at all (Zakić & Milutinović, 2013). The world of modern times is characterized by strong development of information, capital, service products and people with a tendency to erase national borders; the globalization is being perceived as a world without borders, and the development of the Internet and advanced communication technologies enable virtual access, immediate availability of information and involvement in business processes that occur in all parts of the world (Bedecković & Golub, 2011). With so much information coming from all over the world, the contemporary customer doesn't get time to think of how is it that a product comes to his or her let us say European country from Vietnam, Thailand or let's say Argentina. Customers like to use different products and they buy them without thinking about how these products came to them, how contracts were made in order to have those sold in their country, and certainly they are not thinking about what (cultural) specifics the business people from their home country encountered in order to make a deal with some other foreign business people. Someone will say that they don't even have to think about it if they just want to buy. But is that really the case? It should be emphasized that the globalized world is full of things and achievements that were not possible until just a year ago, and this is certainly a success of the modern age. On the other hand, situations that have been known for centuries and are not good, such as cultural conflicts, still exist and unfortunately do not show a tendency to calm down. Therefore, it is not surprising that the number of scientific papers, books and articles dealing with the conflict of human existence is at a very high level. It is precisely from all of the above that one concludes that it is a good idea to have a scientific discipline developed in the field of economics, more precisely management, which can help us understand other nations and nations, and thereby reduce the level of potential cultural conflicts while increasing the level of tolerance. Intercultural (cross-cultural or comparative, depending on how it gets translated) management as a relatively young scientific discipline is primarily tasked with promoting business results at the organizational level of companies. Namely, multinational companies generally have a highly diversified national employee structure, which can cause great problems for the company if employees are not understood because they do not come from the same environment, and the ways of communication, titling and addressing them are completely different. At the next level, this discipline aims to prepare business people for specifics in the process of negotiating with people from other cultures and climates. In order to achieve this, it is necessary to combine knowledge in the field of culture (history, tradition, customs, religions) with knowledge in the field of economics (economic systems of the country, the way organizations work, the system of economic legislation, human resources management), politics (political organization of the country and the way the Government operates), including even sociology (basic social norms, stratification of society, needs and motivation of the population). Thus, the multidimensionality and stratification of this discipline enable understanding of the system of work with other peoples and nations, thereby leading to greater awareness of the cultures of other nations and creating greater tolerance in international business (Zakić & Milutinović, 2013).

2. BASIC NOTIONS

In order to understand the concept of business culture, and in relation to that the scientific discipline that deals with it, and that is the intercultural management, it is necessary to define the notion of *culture* in advance. The word culture derives from the Latin verb *colere*, which in

translation means *to cultivate, refine or nurture*. There are many definitions and meanings of *culture*, and the word is used in anthropology, sociology, philosophy, art, as well as in the fields of economics and agriculture. The notion of culture was among the first studied by anthropologists. Thus, the anthropologist Edward Tylor states: "Culture or civilization is such a complex entity that encompasses: knowledge, belief, art, law, morals, customs and all other abilities and habits acquired by a man as a member of society" (Mojčić, 2007).

The definition of culture provided by Kroeber and Kluckhohn in their monograph *Culture: A Critical Review of Concepts and Definitions* states: "Culture consists of patterns of behavior, explicit and implicit, acquired and transmitted through symbols, representing a distinct achievement of human groups, including their embodiment in artifacts; the core of the culture is made up of traditional (i.e. historically derived and selected) ideas and in particular their associated values; on the one hand, cultural systems can be considered as products of action and, on the other, a precondition for further action" (Mojčić, 2007). According to anthropologist Clifford Geertz, culture signifies a historically transmitted pattern of meaning based on symbols, a system of inherited conceptions expressed in symbolic forms, through which people communicate, renew and develop their knowledge of life and attitudes toward it (Zakić & Milutinović, 2013). Sociologist Ralph Linton believes that: "The culture of a society is the way of life of its members; a collection of ideas and habits they learn, share and transmit from generation to generation" (Haralambos & Holborn, 2002). „Culture is a pattern of behavior transmitted to members of a group by the previous generation of that same group,” reads one of the reflections by a sociologist Stuart Hall (Zakić & Milutinović, 2013). The Dutch sociologist Geert Hofstede states that: „culture is a collective programming of the mind that distinguishes members of one group from others” (Zakić & Milutinović, 2013). The development of management as a scientific discipline during the 1970s caused management to no longer be approached as a process consisting only of planning, organizing, motivating and controlling (Jovanović, 2009), but also to be looked at as he knew dimension of management that will take into account the influence of national culture on the management system. According to Nancy Adler, one of the leading authors in the field of organizational behavior: the "cross-cultural management is a study of the behavior of people in organizations in different cultures and nations of the world. This discipline focuses on describing organizational behavior within countries and cultures, on comparing organizational behavior between countries and cultures, and, perhaps most importantly, on the interaction of people from different countries working in the same organization or within the same work environment" (Mojčić, 2007). Authors Mića Jovanović and Ana Langović Milićević believe that: "Intercultural management is a process of imposing, mixing, accepting and mutually preserving cultural values between different civilizations for the purpose of business globalization" (Jovanović & Langović Milićević, *Interkulturni izazovi globalizacije*, 2006).

The notion of globalization and the economic aspect of this notion must be defined here.

The notion *globalization* is derived from the word „*global*” which means totality, and *globalism* is a way of looking at what is happening globally. Globalization would thus imply a social process that strives for the inclusiveness and uniqueness of the world (Lončar, 2005).

Globalization is a set of complex social processes that characterize the modern world system. In the sense most commonly attributed to it today, globalization implies a trend, potentially general, of overtaking the important political, economic and cultural features of Western civilization by other constructors of the world system. Although the term „globalization” has been used fre-

quently in the academic world over the last two decades, the opinion motivated by the growing awareness of the ever-decreasing influence of physical distance on actors in social processes is as old as the development of the first fast transport technologies, such as rail. A well-known sociologist Anthony Giddens gives the following definition of globalization: „Globalization can thus be defined as the intensification of social relations on the world plane, which connects distant places in such a way that local events are shaped by events that have taken place miles away” (Giddens, 1998).

The key idea behind globalization is free market capitalism, while the fundamental element of globalization is the expansion of the world trade through the elimination or reduction of trade barriers, like import duties. According to the World Bank, at the peak of the Cold War in 1975, only 8% of countries around the world had liberal free capital market regimes, with foreign direct investment at the time being only USD 23 billion. By 1997, the number of countries with a liberal economic regime equaled 28% and foreign investment equaled USD 644 billion, while today most open economy countries are involved in the world trade (Mahmutović & Talović, 2014). The erosion of customs and other safeguards were the most striking events since the end of World War II that have led to consistent growth in the world trade (Kirkbirde, 2001). The establishment of the GATT, or more recently the WTO, has especially contributed to the abolition of various trade barriers, resulting in revolutionary economic trends in the growth of world trade and GDP (Kurtović, Pušara, & Hadžović, 2003). In addition, creation and opening of markets with the globalization process also brought about changes in certain sectors which underwent structural transformation with more or less success, and were affected or gained in importance along with this globalization process (Hadžiahmetović, 2011). A very important component of globalization is the international movement of capital, which is facilitated by its liberalization. According to Mašić, „the liberalization of capital movements by most industrialized countries has been the most significant factor in the process of financial globalization” (Mašić, 2010). Das considers that the liberalization and deregulation of the domestic financial sector, together with the liberalization of the capital account, represent the key determinants of financial globalization (Das, 2004). A similar view is taken by Čaušević discussing financial globalization as a consequence of financial deregulation or liberalization (Čaušević, 2005). Liberalization has led to integration in the capital market and, as Masson points out, has become another important feature of globalization (in addition to trade liberalization) that has expanded in recent years (Masson, 2001).

3. CONSUMER ATTITUDES AND PREFERENCES

Consumers have numerous attitudes towards products, services, etc. Whenever consumers are asked whether they like or dislike a product, service, particular store, or ad topic, they are asked to express their attitudes. Attitude describes one's relatively ongoing evaluations, feelings, and preferences for a product, service, object, person, or idea. Although manifested in relation to concrete things, an attitude is general in nature, and that determines the ways in which one perceives, feels and reacts. It is conditioned by the content of the whole personality, especially its unconscious part, it is determined by the impact of the past, the present and the imagined future of the given personality. Attitudes differ from other patterns of beliefs, desires, opinions, and behaviors by some general criteria. An important feature is their durability, though they are not conclusive and invariable over time. They are just resistant to change for months and years and in that they are different from a set of appropriate moods and other patterns. An important feature of attitudes is their affective component, which distinguishes them from many rational patterns (Krstić, 1996). A person with a negative attitude towards something, refuses to receive

information that speaks against her or his attitude, and if such information still comes, she or he will censor it.

Attitudes are formed by one's own experience or by others' experience. This means that the attitudes, which are relevant for purchase, shaped as a result of personal product experience, oral information received from others (reference groups, especially family and friends), or as a result of exposure to mass media advertising, the Internet, and other forms of promotion. It is important to point out that while attitudes can be derived from behavior, they are not the same thing as behavior is. As learned preferences, attitudes have a motivational quality, in other words, they can direct the consumer towards a particular behavior or distract him or her from a certain behavior. Therefore, it is not surprising why the attitude problem is among the most important and commonly researched problems in consumer research. Attitude is an acquired, relatively lasting and stable organization of emotions, evaluations and reactions to a process, product/service or element of a marketing strategy. Despite consistency, attitudes are not necessarily persistent, they can change. Take for example a consumer who has a greater propensity for German cars than Japanese cars. We would expect her or him to buy the German car brand at the next purchase, which would be in line with her or his views. However, circumstances often preclude a harmony between attitude and behavior. In the case of consumers from the example, the problem of financial opportunities may arise and he or she may conclude that a particular Japanese car is a more realistic choice than a German one. Therefore, we need to consider possible situational influences on consumer attitudes and behavior. By a situation we mean events or circumstances that at some point in time affect the relationship between attitude and behavior. Attitudes are always directed toward a goal – an object. If there is a change in attitude, there is a change in the lifestyle of the consumer. Attitudes also differ in whether they reflect hedonistic or useful properties in consumption. Numerous studies have been undertaken to determine the degree of interdependence of consumer attitudes and behavior. The general conclusion is that the degree to which an attitude influences behavior depends to a large extent on the way in which the attitude is formed. Attitudes formed on direct experience have a much stronger influence on behavior than indirect ones (family, friends, media, the Internet...).

Psychological theories explain two types of attitudes that differently influence people's behavior, namely the extraverted and the introverted attitudes.

The *extraverted attitudes* orient the person towards the outside world and are easier to be recognized and influenced on.

The *introverted attitudes* orient the person towards the inner world and can sometimes lead to unpredictable behavior of the consumer.

The extraverted consumers are willing to communicate with professionals about their products or services, while introverted consumers prefer to make their own purchasing decisions. Attitudes are always aimed at a goal. If there is a change in attitude, then there is a change in the lifestyle of the consumer.

Psychologists, being guided by a desire to understand the relationship between attitude and behavior, have focused on defining attitude structure, to better explain or predict consumer behavior. According to the three-component attitude model, attitudes consist of a *cognitive*, *affective*, and *conative* component.

The cognitive component is made up of knowledge, experience, expectations and beliefs towards the object of inquiry to which one has an attitude. The cognitive or learning component is information that a person has about the object of observation. This information includes knowledge of the object, beliefs about the properties of the object, and judgments about the relative meaning of each of those properties. For example, people may recall the names of several ski resorts such as *Aspen*, *Alta* or *Snowmass* without being reminded. This is called familiarity without being reminded. The names of other ski resorts are likely to be remembered when a travel agency official mentions them, which is referred to as familiarity after being reminded. However, knowledge of ski resorts is not limited to familiarity. Based on the experience of one's friends, brochures, magazines and other sources, one forms views on the properties of each of these centers.

The affective or emotional component is expressed through degrees of affection or aversion to the object and is expressed through desire, curiosity, longing and admiration for the product/service. A liking or affective component is an overview of a person's feelings about a particular object, situation, or person on a scale from I like – I dislike, or favorable – unfavorable, i.e. positive-negative. When choosing from several alternatives, liking is perceived as a preference for one over other options. Some people may like all the features of a ski resort except the location because it takes a long time to get there.

The conative component means the consumer's willingness to approach or distance herself or himself from the object and is expressed through the intention to buy, loyalty to the product, product preference, etc. Intentions (an action component) usually relate to a specific period of time that depends on one's buying habits and the time that is being planned. A great advantage in terms of intentions is that they include information about the consumer's ability or willingness to pay for something or take some other action. One may prefer Aspen over all other ski resorts, but because of the price he or she does not intend to go there next year.

Within psychology, various instruments for measuring attitudes have been developed. Some of them are widely used for market research purposes. Attitude research presents one of the most important issues of importance for understanding consumer behavior (Živković, 2011).

We have known and studied consumer attitudes for over 60 years, but we do not yet have a complex method to investigate them. Instead, different, essentially partial methods are still used today, most often investigating individual components and dimensions of consumer attitudes (Gutić & Sadrić, 2011).

3.1. Measuring Attitudes

Marketing managers are particularly interested in consumers' attitudes in terms of what their beliefs are about particular products/services and brands. If some beliefs are wrong and prevent buying, experts will want to launch a campaign to correct those beliefs.

Attitude measurement primarily means looking at the likelihood of consumer action (Topalović, 2010). A distinction is made between intention and attitude. Success in measuring consumer attitude depends on the specificity of the goal. In exploring facts, cognition, knowledge, and beliefs, we in fact attempt to explore only the cognitive component of attitudes. If, however, we examine the feelings, opinions, desires, or expectations of a product/service, we only examine the affective component of attitudes. Consumer actions, plans, activities and intentions direct us to only a

conative component of attitudes. By exploring all these categories together (integrated), we can realistically reach consumers' attitudes and their dimensions. There are also different methods of testing each of these categories. This fact alone poses a serious dilemma when choosing a method or multiple methods (combining them mutually) when examining consumer attitudes.

Most of the questions in the surveys used in marketing research are formulated to measure attitudes. Answering questions helps decision makers to formulate products or services to fit the needs of different segments. What management really wants to understand and precisely affect is the behavior.

From the point of view of diagnostic explanatory capabilities, attitude measurement has a huge advantage over behavioral measurement. Attitude measurement can help to understand what features of a new product concept are acceptable or unacceptable to the consumers, as well as what their perception of the advantages and disadvantages of competing alternatives is.

Assessment scales are the most commonly used instrument for measuring consumer attitudes. They are Likert, Thurstone, Guttman, Stapel scales, multidimensional scales, and attitude batteries. In addition, attitudes can be measured by in-depth interview techniques and projective techniques. Given that consumers' attitudes are extremely complex mental structures influenced by many known and unknown factors, it is not possible to investigate effectively the determinants and all the complexities of attitudes and their manifestation using one technique (i.e. any of these techniques). Depending on the type and structure of the attitudes, as well as their role in specific behavior towards the product/service or brand, testing and measurement should be undertaken using and combining multiple methods.

3.2. Consumers' attitudes

The easiest way to show consumer behavior is through these three steps:

1. defining consumer preferences or preferences, that is, finding practical descriptions of why people prefer one another over another;
2. defining budget constraints that are reflected in incomes that limit the amount of goods that consumers can buy;
3. defining the choice of consumers who, with the given preferences and limited incomes, buy the combination of goods that maximize their satisfaction, that is, their well-being.

For the combination of goods that a consumer buy we use the term market basket or commodity bundle. It is, in fact, a list of certain quantities of one or more goods, and may refer to the quantities of food, clothing, and footwear, or rent that the consumer buys each month.

The question is how consumers choose market baskets, that is, how they decide how much food they will buy each month, how much clothing, and how much they will spend on housing. Consumers generally choose the market baskets which put them in the best possible position.

Consumer behavior theory is based on three basic assumptions about people's preferences, i.e. preferences for one market basket over another, which apply to most people in most situations:

- totality – the preferences are considered to be total, that is, consumers can compare and rank all possible baskets, but may also be indifferent to them, which means that they are equally satisfied with any basket;

- transitivity – preferences are transitive which means that if the consumer likes more basket A than basket B, and basket B than basket C, then she or he will also prefer basket A over basket C.

More is better than less – consumers are always more inclined towards better than less, and even when less is good, these assumptions do not explain consumers' preferences, but give them a degree of rationality, and by using indifference curves, consumer preferences may be graphically shown. The indifference curve shows all combinations of market baskets that give a person the same level of satisfaction, so a person is indifferent towards all baskets that are on the same curve, and with earlier assumptions about the consumer preferences, we know that the consumer can always show greater preference for one market basket over another, or be indifferent to both.

4. CONTRIBUTION OF INTERCULTURAL MANAGEMENT TO THE DEVELOPMENT OF TRADE RELATIONS BETWEEN COUNTRIES

It is very important for managers who manage international business to understand the impact of culture on decision-making style and process. Culture influences decision-making through the wider context of national culture that produces collective patterns of decision-making, as well as through a culturally based value system that acts on the individual perception of the decision-maker or on the personal interpretation of the situation. However, the extent to which managerial decision making is influenced by culture varies from country to country. Thus, for example, the empirical research conducted by M. Hitt, B. Tyler, and D. Park indicated that there is a greater cultural homogenizing influence on the cognitive models of Korean managers than on American managers, whose individualistic tendencies lead to different decision-making patterns. The way culture influences managerial decision-making in international business is studied through variables involved in each stage of the rational decision-making process: defining problems, gathering and analyzing relevant information, considering alternative solutions, making best decisions and putting them into practice. One of the most significant cultural variables is related to adopting an objective or subjective approach. While the Western approach is rational based (managers interpret the situation and consider alternative solutions based on objective information), this is not common throughout the world. Many, such as Latinos, are more subjective and largely base their decision-making process on emotions (Ivanović, Arsenović, & Pajkić, 2010).

Although we can talk about the existence of multicultural societies, multicultural societies are no longer the exception, but the rule. Such a multicultural social situation shatters all boundaries and opens people's doors to something different. The removal of these borders has been greatly contributed by globalization, which brings the world together in very unusual ways. Apart from visible physical differences, culture is very important in the life of each individual. Through culture we identify with the society in which we live, but also, we find ourselves through culture. Given the multitude of cultures that surround us, it is essential to create a dialogue among the different ones (Nešković, 2012).

Intercultural processes, as much as they may be necessary, being that in today's global environment one cannot do business unless other cultures and behaviors are understood, they are at the same time inevitable, given that they cannot be stopped. Whether we like it or not, there are foreign companies present in every country that employ people of different nationalities, thus creating an environment where it is necessary to accept those people and at the same time understand

them so that the company can function. Therefore, it is necessary to understand that intercultural management as a new scientific discipline can greatly contribute to understanding the diversity of other people and contribute to their better understanding. In the field of management or marketing, there are many examples of the types of misunderstandings that can arise if one does not take into account the specificities of particular cultures (Zakić & Milutinović, 2013). Thus, for example, in Japan, the bargaining system is such that business partners first get to know each other at a first meeting and only slowly agree on a deal at a later date. A manager who is unfamiliar with such a bargaining system could probably think after the first meeting that the deal has not been closed and that the negotiations are over (Jovanović, Interkulturni menadžment, 2004). Or, for example, white in Europe signifies purity, innocence – and in Asian countries it is a symbol of death, so when choosing a particular product to a particular market, great care must be taken in choosing the color. Most Asian nations have a cult of keeping someone else's good name in check, so in having an interlocutor with whom they are about to close a deal or already do business, one must take care not to offend or humiliate the interlocutor, because then the deal is off. It is therefore necessary to take into account their cultural characteristics, which was particularly evident from previous intercultural research in order to produce the desired results. Given that globalization inevitably leads to intercultural conflicts, there is a need for public scrutiny and understanding of both our own culture and other peoples' cultures. In today's world, tolerance is highly needed, perhaps more than ever. Countries inhabited by a large number of nations, such as the US and the EU, have shown that understanding diversity is the key to success for the modern state, i.e. community (Zakić & Milutinović, 2013). Would America be the same country as we know it today if it were not inhabited by so many members of different peoples, races, and religions who are very different from the dominant Anglo-Saxons, such as: Italians, Jews, Hispanics, African-Americans, Japanese, and Chinese? Together, these nations have created a state that is today the only global superpower and have shown that despite all the conflicts that inevitably exist within such a multinational state, tolerance and acceptance of others and different ones can be achieved. The history of conflict between different races and nations in this country is quite long and this is not only the specificity of America, but a characteristic of any modern state that exists. But one of the basic tasks of every state would have to be to create such legal frameworks and norms that would facilitate the processes of adjustment and inclusion of citizens of other than the major nationality in the life and work of that state. It would be logical to assume that this right is granted to everyone through the constitutions and laws of different states, but unfortunately the situation is often different in practice. This is why various conflicts occur, resulting in increased racial and national intolerance. Probably, in an ideal world, there would never be any conflicts or wars, in which culture would be one of the reasons for reflection and conflict, but unfortunately there still are such conflicts, and it is necessary to explain them and see what they have to do with intercultural management.

The word conflict has a Latin origin (*conflictus*) and it denotes: a conflict, collision, fight, quarrel, dispute ... Contemporary theory has given a great number of papers and definitions on the topic of conflict. According to one of them, by Boulding, an American sociologist and economist – author of *Conflict and Defence: A General Theory*, “a conflict can be defined as a state of competition in which the parties are aware of the incompatibility of the potential of future positions and in which each party wishes to occupy a position that is incompatible with the wishes of the other party”. (Zakić & Milutinović, 2013) “A conflict is a social state in which at least two parties (individuals, groups, states) participate: having completely different starting points, seemingly irreconcilable, and pursuing different goals, which can only be achieved by one of the parties and/or using completely different means to achieve a specific goal.” (Zakić & Milutinović, 2013) cites Ulrike C. Wasmuth. (Gugel, 2006)

Looking at the global changes that are just happening, one cannot but conclude that it will take a long time for the world to get used to the fact that the changes are happening minute by minute, and that the life we know from twenty or thirty years ago no longer exists. The conflicts that occur on this occasion require people to have a high level of awareness of what the negative resolution of such conflicts will bring about. There are many texts, discussions and conclusions in the literature on how these problems can be addressed. We will begin with theory and then see how theory and practice work in this case, and how they can be applied in intercultural management. When we talk about how conflicts arise, what their dynamics are and how we can resolve them, then we are talking about the very stages of conflict. According to Günter Gugel, there are three basic stages of conflict development: the first is the initial phase, then the escalation phase, and finally the resolution phase. In the first phase there are latent or manifest conflicts according to this author, which do not have to have a negative effect in themselves, and which escalate in the escalation phase. During the next phase, conflicts are resolved and some compromise is sought, in order to help to overcome the conflict. Conflicts in the cultural field cannot be solved quickly and easily, and as a result, scientists have tried to give their vision of bridging them, in order to reduce them overall and subsequently have the business results improved. According to Andrea Williams, there are three possible ways of resolving cultural conflicts, which are being applied in contemporary training and courses in international business and intercultural management (Zakić & Milutinović, 2013).

Nowadays, companies are increasingly encountering new contacts, people and companies from other countries. In order to achieve desirable positive relationships and successful communication and cooperation in all these diverse situations, leading to the closure of business contracts and the realization of successful sales, it is necessary to know the specifics of negotiation and principles of communication with members of other cultures. Knowledge of the characteristics of business culture and how to negotiate is an essential prerequisite for successful cooperation. Only in this way it is possible to always have successful business cooperation everywhere, without the appearance of any misunderstandings and bad emotions that can affect the negative outcome of the negotiations. Good intercultural communication ensures the expansion and development of business and generation of higher levels of profit (Ivanović, Arsenović, & Pajkić, 2010).

In showing interest in the cultural dimension of the problem – each of the parties to the conflict must understand that the conflict has a cultural dimension in itself. Also, there must be a will on both sides of the conflict to resolve all levels of a particular conflict, including the one concerning culture. In order to resolve the conflict appropriately, the conflict resolution process must go through four stages. In the first phase, it is necessary that the opposing parties tell each other what specifically bothers them about the other party's behavior. During the second phase, the opposing parties should learn the cultural characteristics of the other. In the third phase, each party tells the other how the same situation would be resolved within their culture and what solution would be reached. The final, fourth stage is characterized by the resolution of cultural conflict.

By learning about other cultures – people can avoid intercultural conflicts if they learn about other people's cultures that they come into contact with, or interact with. This knowledge can be gained through various types of training related to cultures of other nations, reading books on other cultures and learning from their previous experience. One of the more important ways to embrace other cultures is to know and study one's own culture. By developing cultural awareness with adopting other people's cultural habits and customs, it is possible to break the cultural stereotypes we have about other nations and their cultures. Modifying an organizational struc-

ture within a company in which there are cultural conflicts often shows that the organizational structure of a company follows the cultural values of only one (ruling or dominant) culture and thus causes dissatisfaction with members of other cultures. In such situations, it is necessary to change the organizational structure in a way that will more respect the values of members of other cultural communities.

It can be said that knowing what cultural conflicts are, how they arise and how to overcome them can certainly lead to improved understanding among business associates from different countries working in the same companies, as well as to better deals. All initial research conducted for the purpose of understanding other cultures, and which have emerged as an aid to a better understanding of the business systems of other countries (such as the researches by Hofstein, Schwartz, and the GLOBE project, as explained in this paper) have contributed to understanding the importance of the other people's culture, traditions and history in today's globalized world, and giving them much greater importance in contemporary business than it was the case before.

5. CONCLUSION

The contemporary development of management in the world is characterized by the expansion of the areas of application, the introduction of new methods and techniques and the increased use of information technologies, the strengthening of the role of managers, project managers and teamwork, and the development of modern approaches and specialized management disciplines. The international management must take into account cultural risks at macro levels, which are as real as political risks. Therefore, competency and flexibility in the domain of culture is essential when designing a particular international business strategy. As mentioned above, the primary role of intercultural management is based on the creation of patterns that will follow the flow of national specificities in the field of international business.

REFERENCES

- Bedeković, V., & Golub, D. (2011). Suvremeni menadžment u uvjetima globalnog poslovanja. *Praktični menadžment*, 57-63.
- Čaušević, F. (2005). *Ekonomski suverenitet i globalni tokovi kapitala*. Sarajevo: Međunarodni Forum Bosna.
- Das, K. (2004). *Financial Globalization and the Emerging Market Economies*. London: Routledge.
- Gidens, E. (1998). *Posledice modernosti*. Beograd.
- Grgušević, N. (2010). Globalni mediji, nacionalna kultura i komercijalizacija elektronskih medija. *Medijski dijalozi*, 167.
- Gutić, D., & Sadrić, N. (2011). Istraživanje stavova potrošača: neke teškoće, problemi i dileme. *Marketing, Časopis za marketing, teoriju i praksu*, 151.
- Hadžiahmetović, A. (2011). *Ekonomija Evropske unije*. Sarajevo: Sarajevo Univ. Press.
- Haralambos, M., & Holborn, M. (2002). *Sociologija*. Zagreb: Golden marketing.
- Ivanović, B., Arsenović, B., & Pajkić, B. (2010). Uticaj kulture na menadžment preduzeća na međunarodnom tržištu. 6. *Naučin skup sa međunarodnim učešćem, Sinergija*. Bijeljina: Sinergija.
- Jovanović, M. (2004). *Interkulturni menadžment*. Beograd: Megatrend univerzitet.
- Jovanović, M. (2009). *Uvod u biznis*. Beograd: Megatrend univerzitet.

- Jovanović, M., & Langović Milićević, A. (2006). *Interkulturni izazovi globalizacije*. Beograd: Megatrend univerzitet.
- Kirkbirde, P. (2001). *Globalization, The External Pressures*. Chichester: John Wiley & Sons, Ltd.
- Krstić, D. (1996). *Psihološki rečnik*. Beograd: Savremena administracija.
- Kurtović, S., Pušara, K., & Hadžović, M. (2003). *Međunarodna ekonomija*. Beograd: Fakultet za spoljnu trgovinu.
- Lončar, J. (2005). Globalizacija – pojam, nastanak i trendovi razvoja. *Geoadria*.
- Mahmutović, H., & Talović, S. (2014). *Liberalizacija ekonomskih tokova kao bitna determinanta savremene globalizacije: neki teorijski pogledi i argumenti*. Sarajevo.
- Mašić, S. (2010). *Finansije i finansijski sistemi*. Beograd: Univerzitet Singidunum.
- Masson, P. (2001). Globalization: Facts and Figures. *IMF Policy Discussion Paper*.
- Mojić, D. (2007). Organizacije i nacionalna kultura. *Sociologija*, 347-368.
- Nešković, D. (2012). *Interkulturalni pomaci u multikulturalnom društvu*. Zagreb: Sveučilište u Zagrebu, Filozofski fakultet.
- Topalović, N. (2010). Uloga psiholoških determinanti u ponašanju potrošača u turizmu (diplomski rad). Beograd: Fakultet za turistički i hotelijerski menadžment Univerziteta Singidunum.
- Zakić, K., & Milutinović, O. (2013). Doprinos interkulturnog menadžmenta razvijanju tolerantnosti u međunarodnom poslovanju. *Anali poslovne ekonomije*, 162-177.
- Žikić, S., & Košćec, S. (2012). *Značaj multinacionalnih korporacija u procesu globalizacije na primeru kompanije Microsoft*. Beograd: Megatrend univerzitet.
- Živković, R. (2011). *Ponašanje potrošača*. Beograd: Univerzitet Singidunum.
- Zubanović, V., & Roca, B. (2010). Etika i mediji sa aspekta globalizacije. *Medijski dijalozi*, 143.

BLOCKCHAIN TECHNOLOGY APPLICATION AREAS IN THE SMART CITY INFORMATION SYSTEMS

Zoran Ćirić¹
Otilija Sedlak²
Stojan Ivanišević³

DOI:

Abstract: *By cross-referencing benefits of blockchain technologies and critical issues and weak points of smart city information systems, one may conclude that blockchain systems are just the right solution for smart city information systems. However, this may not be true and applicable generally let alone universally. Traditional information system requires an increased level of security and availability of service when they have to be exposed to the public and used by the tens of thousands of inhabitants within a city. On the other hand, blockchain technologies offer a completely new combination of technologies to solve security and reliability issues as well as the availability of service and failsafe tolerance. The scope of this work is to analyse literature as well as available use cases to detect areas of a successful application for information systems that are using blockchain in the smart city.*

Keywords: *Blockchain, Smart City, Feasibility Study, Information Systems.*

1. INTRODUCTION

This paper elaborates potential applications of blockchain technology found within the scientific literature. In an attempt to create analysis that is easier to understand, potential applications are divided by the component of the smart city that they are related to. Accepting blockchain technologies and exploring ways to apply these technologies to addressing challenges in smart cities is a research direction and represents a new area that has not been sufficiently explored through the prism of scientific research, because blockchain technologies were recently adopted with creation of Ethereum Enterprise Alliance in 2017. The result of the research in this paper is to show the possibility for improvement of sustainability within a smart city with the application of blockchain technology and to search for a scientific founded framework for the application of blockchain technologies in the smart cities.

In scientific literature, blocking technology has not been sufficiently explored since its beginning is related to 2008 [2], with wider acceptance by large corporations only in 2017 [1]; therefore, there are not enough scientific studies of the application of this technology in practice. Governments are very cautious with application for these technologies and far more carefully that real sector. Because smart cities are ruled by the government sector that is naturally more conservative, real-life applications within e-Government and other government-related smart city aspects are scarcer.

¹ University of Novi Sad, Faculty of Economics Subotica, Segedinski put 9-11, Subotica, Serbia

² University of Novi Sad, Faculty of Economics Subotica, Segedinski put 9-11, Subotica, Serbia

³ JKP Informatika Novi Sad, Bul. cara Lazara 3, Novi Sad, Serbia

2. BLOCKCHAIN TECHNOLOGY

Blockchain technology, which became known primarily thanks to bitcoin (Bitcoin), is a type of distributed system technology further referred to as Distributed Ledger Technology (DLT), which is defined as a „distributed, shared, encrypted database that serves as irreversible and non-recoverable (non-corrupt) information repository”. [1] When blockchain technology is used to create a platform, the product is a digital platform that stores and verifies the entire transaction history between its users anywhere on the network. From a technical point of view, blockchain is a „database consisting of chronologically arranged series of transactions known as blocks” about which each proposed transaction must be checked with the certainty and integrity of that particular block „, [2]

Once the information is entered, it can never be deleted [3]. Block technology is described in the literature as a database and as a network equipped with a built-in security system and internal integrity. [4]

3. POTENTIAL BLOCKCHAIN TECHNOLOGY APPLICATIONS IN THE SMART CITY

In order to start the analysis of potential blockchain applications in the smart cities, it is necessary to tie application areas with smart city components. One of the known definitions of the smart city (ITU) is: „A smart and sustainable city is an innovative city that has extensive use of information technology using them to develop the quality of life level, city administration, by taking into the account the needs of current and future generations in the same way as it takes into account economic, social and environmental aspects”. [5]

Between all views in contemporary scientific literature list of smart city components from Lombardi et al. [6] have been taken as starting point. According to this group of authors, smart city components are:

1. Smart economy – viewed as industry as an aspect of urban life;
2. Smart citizens – knowledge and human capital;
3. Smart governance – e-Government and open data;
4. Smart mobility – logistics and infrastructures;
5. Smart environment – sustainability;
6. Smart living – livability and quality of life and security.

A brief literature review is examining examples of the application of blockchain technology in order to contribute to the sustainability of a smart city as well as any limiting circumstances related to the application.

| Component | Potential applications: |
|--------------------------|--|
| Smart economy – industry | <p>Blockchain-based sharing services: The sharing economy can be defined as an economic/social model that broad sectors of the population can employ to collaboratively make use of under-utilized assets, in which supply and demand are interacting for the supply side to directly provide products/services. The overall aim of a sharing business, which can be both profit-oriented and non-profit oriented, is to improve the use of under-utilized assets and reduce transaction costs. [7],[8],[9]</p> <p>Fintech industry and crypto economy: The key advantage of this technology lies in the fact that it enables the establishment of secured, trusted, and decentralized autonomous ecosystems for various scenarios, especially for better use of the legacy devices, infrastructure, and resources. [10]</p> |

| Component | Potential applications: |
|---|---|
| Smart citizens – knowledge and human capital | <p>Digital identity: blockchain solutions provide digital identities based on cryptography and anonymity. Identity verification and authentication technologies, as one of the applications of blockchain-based solutions – and the focus of our own efforts at SecureKey Technologies – have been critical components in service delivery in both sectors due to their power to increase trust between citizens and the services they access. [17],[18]</p> <p>Smart Health: system for sharing patients' data between institutions in safe and anonymous manner. [19]</p> <p>Digital content distribution: The blockchain-based digital content distribution system was developed. Decentralized and peer-to-peer authentication mechanism can be considered as the ideal rights management mechanism. The blockchain has the potential to realize this ideal content distribution system. [20]</p> |
| Smart governance – e-Government | E-government: a group of authors discuss use of blockchain technology as a platform for various applications in e-Government and furthermore as an emerging support infrastructure by showing that blockchain technology demonstrates a potential as well as discussing limitation factors. [21],[22] |
| Smart mobility – logistics and infrastructures | <p>Supply chain management: Blockchain technology promises overpowering trust issues and allowing trustless, secure and authenticated system of logistics and supply chain information exchange in supply networks. [11]</p> <p>Transportation: Blockchain can be used to build an intelligent, secure, distributed and autonomous transport system. [12]</p> <p>Electric vehicle charging: shared charging for electric vehicles and bidding for the energy. [13],[14]</p> <p>Logistics – a group of authors made a great review of potential applications of blockchain in logistics. [15]</p> <p>Food supply management: blockchain solutions provide tracking of goods from production to final consumers. [16]</p> |
| Smart environment – sustainability | <p>Sustainable supply chains – Sustainable, and especially green, supply chains can benefit from blockchain technology, but there are also caveats. [23]</p> <p>Smart grid – Emerging markets must attract significant international financing to meet their goals for mitigating carbon pollution and increasing access to clean, affordable, reliable, and resilient energy. The authors* of this note examine how blockchain technology can—if paired with smart, interconnected devices—promote needed investments by both improving investment processes and promoting the adoption of modern energy systems and business models. [26]</p> |
| Smart living – livability and quality of life and security | <p>Public safety – The idea of smart cities is developing extremely rapidly, integrating smart grid, services, building, house and appliances, these subsystems must be able to interact, connect, and control remotely, collaboratively, to achieve a better quality of life, sustainability, energy saving, social and economic development. The widespread of Smart City depends heavily on the capability of users to understand and handle the ICT, IoT and BC. [24]</p> <p>Within a permissioned blockchain network, a microservices based security mechanism is introduced to secure data access control in a smart public safety system. [25]</p> |

4. CONCLUSION AND FURTHER RESEARCH

The review of the contemporary scientific literature shows that the scientific literature discusses potential applications of smart cities within specific subcomponents of the smart city. Improved privacy, security, availability and heterogeneous architectures correspond with strong points of blockchain technology, because blockchain based systems provide strong security together with total anonymity; their distributed nature also increase availability and finally their nature is interoperable. Because of these strong points of blockchain technologies, a greater number of potential applications and subsequently real-life applications and scientific discussions and studies exist in relation to the economy, mobility and supply chain management and e-Government. Literature view on the potential application of blockchain technology that increase envi-

ronmental sustainability and main contribution of blockchain to smart environment is perceived as contribution in sustainability of information systems within smart cities, supply chains improvement and new business models in energy systems.

In scientific literature, papers are dealing with the applications of blockchain technology to increase the sustainability of smart cities, as shown in the literature review. The available scientific literature, however, does not analyse these applications through a prism of smart city components, but rather through more narrower application areas.

However, the authors did not find any working framework for the implementation of information systems projects (IS) based on these technologies in the scientific literature. According to the authors, it is necessary to mark the areas of application of this technology in smart cities and to continue to explore ways of applying to define the success factors and results indicators for the implementation of the IS projects based on block technology.

In order to conduct further study of this subject applications of blockchain technologies in smart cities should be divided into potential and theoretical found within scientific literature and real-life application within existing smart cities. Further study of successfully applied blockchain information systems needs to be conducted in order to identify smart city components and particular subsystems where blockchain technologies showed improved results and increased sustainability compared to traditional information systems.

REFERENCES

- [1] Wright, Aaron and De Filippi, Primavera, Decentralized Blockchain Technology and the Rise of Lex Cryptographia (March 10, 2015), available at <http://ssrn.com/abstract=2580664>.
- [2] Wessel quoting BoE Blockchain Technology, Sutardja Center for Entrepreneurship & Technology
- [3] Embracing Disruption –Tapping the Potential of Distributed Ledgers to Improve the Post-Trade Landscape, Deposit Trust & Clearing Corporation (January 2016), available at <http://www.dtcc.com/~media/Files/PDFs/DTCC-Embracing-Disruption.pdf>
- [4] Pilkington, Marc, “Blockchain Technology: Principles and Applications,” page 15 (citing Kwon, J. (2014). Tendermint: Consensus without Mining. White paper.)
- [5] <http://www.itu.int/en/ITU-T/ssc/Pages/info-ssc.aspx> (16.2.2017)
- [6] P. Lombardi, S. Giordano, H. Farouh, and W. Yousef, “Modelling the Smart City Performance”, *Innovation: The European Journal of Social Science Research* 25: 2 (2012) 137 – 149.
- [7] Sun, J., Yan, J. & Zhang, K.Z.K. Blockchain-based sharing services: What blockchain technology can contribute to smart cities. *Financ. Innov.* 2, 26 (2016). <https://doi.org/10.1186/s40854-016-0040-y>
- [8] Gori P, Parcu PL, Stasi ML (2015) Smart Cities and Sharing Economy, vol 96, Robert Schuman Centre for Advanced Studies Research Paper No. RSCAS
- [9] Steve Huckle, Rituparna Bhattacharya, Martin White, Natalia Beloff, *Procedia Computer Science* Volume 98, 2016, Pages 461-466
- [10] Y. Yuan and F. Wang, „Blockchain and Cryptocurrencies: Model, Techniques, and Applications,” in *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. 48, no. 9, pp. 1421-1428, Sept. 2018. doi: 10.1109/TSMC.2018.2854904
- [11] Dujak D., Sajter D. (2019) Blockchain Applications in Supply Chain. In: Kawa A., Maryniak A. (eds) *SMART Supply Network. EcoProduction (Environmental Issues in Logistics and Manufacturing)*. Springer, Cham

- [12] Pradip Kumar Sharma, Seo Yeon Moon, and Jong Hyuk Park „Block-VN: A Distributed Blockchain Based Vehicular Network Architecture in Smart City, *J Inf Process Syst*, Vol.13, No.1, pp.184~195, February, 2017 ISSN 1976-913X (Print) <https://doi.org/10.3745/JIPS.03.0065>
- [13] F. Knirsch, A. Unterweger, and D. Engel, “Privacy-preserving blockchain-based electric vehicle charging with dynamic tariff decisions,” *Comput. Sci. Res. Develop.*, vol. 33, nos. 1–2, pp. 71–79, 2017.
- [14] J. Kang et al., “Enabling localized peer-to-peer electricity trading among plug-in hybrid electric vehicles using consortium blockchains,” *IEEE Trans. Ind. Informat.*, vol. 13, no. 6, pp. 3154–3164, Dec. 2017.
- [15] Dobrovnik, M.; Herold, D.M.; Fürst, E.; Kummer, S. Blockchain for and in Logistics: What to Adopt and Where to Start. *Logistics* 2018, 2, 18.
- [16] Tian, F. An agri-food supply chain traceability system for China based on RFID & blockchain technology. In *Proceedings of the 2016 13th International Conference on Service Systems and Service Management (ICSSSM)*, Kunming, China, 24–26 June 2016.
- [17] Wolfond, G.: A blockchain ecosystem for digital identity: improving service delivery in Canada’s public and private sectors. *Technol. Innov. Manag. Rev.* 7(10), 35–40 (2017)
- [18] A.H.Mohsin, A.A.Zaidan, B.B.Zaidan, O.S.Albahri, A.S.Albahri, M.A.Alsalem, K.I.Mohammed, Blockchain authentication of network applications: Taxonomy, classification, capabilities, open challenges, motivations, recommendations and future directions, *Computer Standards & Interfaces*, Volume 64, May 2019, Pages 41-60
- [19] K. Peterson, R. Deeduvanu, P. Kanjamala, and K. Boles. (2016). A Blockchain-Based Approach to Health Information Exchange Networks. [Online]. Available: <http://www.collea-ga.org/sites/default/files/12-55-blockchain-based-approach-final.pdf>
- [20] J. Kishigami, S. Fujimura, H. Watanabe, A. Nakadaira and A. Akutsu, „The Blockchain-Based Digital Content Distribution System,” *2015 IEEE Fifth International Conference on Big Data and Cloud Computing*, Dalian, 2015, pp. 187-190. doi: 10.1109/BD-Cloud.2015.60
- [21] Olnes and Jansen, 2017 S. Ølnes, A. Jansen, Blockchain technology as a support infrastructure in e-Government *International Conference on Electronic Government*, Springer (2017), pp. 215-227
- [22] F. Rizal Batubara, Jolien Ubacht, and Marijn Janssen. 2018. Challenges of blockchain technology adoption for e-Government: a systematic literature review. In *Proceedings of the 19th Annual International Conference on Digital Government Research: Governance in the Data Age ('18)*. Association for Computing Machinery, New York, NY, USA, Article 76, 1–9. DOI: <https://doi.org/10.1145/3209281.3209317>
- [23] Kouhizadeh, M.; Sarkis, J. Blockchain Practices, Potentials, and Perspectives in Greening Supply Chains. *Sustainability* 2018, 10, 3652.
- [24] C. Lazaroiu and M. Roscia, „Smart district through IoT and Blockchain,” *2017 IEEE 6th International Conference on Renewable Energy Research and Applications (ICRERA)*, San Diego, CA, 2017, pp. 454-461. doi: 10.1109/ICRERA.2017.8191102
- [25] R. Xu, S. Y. Nikouei, Y. Chen, E. Blasch and A. Aved, „BlendMAS: A Blockchain-Enabled Decentralized Microservices Architecture for Smart Public Safety,” *2019 IEEE International Conference on Blockchain (Blockchain)*, Atlanta, GA, USA, 2019, pp. 564-571. doi: 10.1109/Blockchain.2019.00082
- [26] Miller, Douglas; Mockel, Peter. 2018. Using Blockchain to Enable Cleaner, Modern Energy Systems in Emerging Markets. EMCompass; Note 61. International Finance Corporation, Washington, DC. International Finance Corporation. <https://openknowledge.worldbank.org/handle/10986/31200> License: CC BY-NC-ND 3.0 IGO.

ORGANIC AGRICULTURE IN THE DEVELOPMENT OF A GREEN ECONOMY

Larisa Jovanovic¹

Dragan Živković²

Mario Lukinovic³

Milan Jankovic⁴

DOI:

Abstract: *Sustainable development is a modern concept of economic development, which enables long-term economic growth rates to be achieved with better utilization of scarce natural resources and a better quality of life for the population to preserve the environment and reduce social inequalities. Care for the quality and way of life of the population integrated into this concept takes into account the needs in the context of intense globalization and fast-growing markets of present and future generations.*

Among the economic activities, it is necessary to identify those that contribute most to the economic growth and sustainable development in terms of development opportunities. Considering that the Republic of Serbia occupies a favorable geographical position, has significant natural resources and a good workforce, agriculture stands out as one of the economic activities that significantly contribute to economic growth, with recognizable development potentials.

Organic production makes a significant contribution to achieving the goals of a green economy and green growth. Thanks to well-defined principles and standards, as well as a certification system, its positive impact on the health and life of all living things, the environment and natural resources is enabled. Both of these concepts are based on the same principles and offer numerous opportunities for improving the standard of living, developing underdeveloped countries and achieving sustainable development. In European countries, organic production is a model for sustainable rural development.

The intention of this paper is to investigate the possibilities and necessary incentive measures for the sustainable development of organic agriculture in the Republic of Serbia and compare the organic food production growth in European countries and in Serbia.

Keywords: *Organic Agriculture, Agroecology, Green Economy, Organic Farming, Sustainable Rural Development, European Union, Republic of Serbia.*

1. INTRODUCTION

Unlike conventional agricultural production, organic farming is designed to meet the demands of quality food, human, animal and ecosystem health.

The concept of organic agriculture is closely related to the concept of green economy and has a positive impact on the achievement of its basic goals in the sector of healthy food production and environmental protection. On the other hand, the green economy creates the conditions for the application and development of organic agriculture.

¹ University ALFA BK, Palmira Toljatija 3, Belgrade, Serbia

² University ALFA BK, Palmira Toljatija 3, Belgrade, Serbia

³ University Union, Faculty of Law, Maršala Tolbuhina 36, Belgrade, Serbia

⁴ Faculty of Business Studies and Law, Jurija Gagarina 149a, Belgrade, Serbia

Based on international agreements, organic farming and processing of organic products are defined as a management system based on the standards of the International Federation of Organic Agriculture Movements (IFOAM), national and local laws, regulations and guidelines for producers and their associations, which, with the support of the community and society as a whole, achieve common goals:

- protection of land and water resources,
- prevention of adverse effects on ecosystem health and human health,
- increasing biodiversity, and
- production of high quality and health food (IFOAM, 2019).

The main support for organic plant production is organic fertilizers such as: solid and liquid manure, fallow, various types of compost, thirties, plants intended for vegetable fertilization, pomas, sawdust, molasses, seaweed, and the use of some fertilizers is allowed; mineral origin powder of rocks, calcium and magnesium fertilizers, calcium algae, gypsum, crude phosphates, bone meal, etc. In addition to these fertilizers, the use of microbiological preparations is very significant.

The Republic of Serbia lags significantly behind the EU countries in the organic food sector.

Organic farming was developed to solve the problems caused by conventional methods in food production. These problems are related to soil erosion and degradation, pollution of surface waters and ecosystems. Organic agriculture causes less damage to the environment, human health and ecosystems for the following reasons:

- chemical pesticides and fertilizers are not used, thus eliminating risks to human health and environmental pollution,
- care for ecosystem health and biodiversity conservation is achieved through the maintenance of biological cycles,
- nutrient recycling and land restoration reduce the risk of pollution in the surrounding territories,
- recovery of soil through winter by using winter crops or plants that cover the soil, thereby improving soil quality, reducing the risk of erosion, degradation and compaction.
- Pest control is performed using biological, selective or mechanical methods and involves increasing the population of beneficial insects and enhancing biodiversity.

Research shows that organic products contain 50% more vitamins, minerals, enzymes and other micronutrient components than conventional products. Also, organic products are the only guarantee that no genetically modified food is introduced into humans and animals.

According to the definition of FAO (Food and Agriculture Organization) and WHO (World Health Organization), organic farming uses production processes in accordance with the principles of sustainable rural development with the use of indigenous resources and recycling, thereby achieving complex farm with crop and livestock production. As the basic idea of organic production is based on the thesis that exploitation should be adapted to natural conditions and enable normal habitat recovery, organic farming is also called self-sustaining. Organic farming is an attempt to identify methods that should enable organic food production while reducing the negative impacts of intensive agricultural production on ecosystems.

Transformation of conventional agriculture into organic farming becomes crucial for achieving green economy goals (Janković, Jovanović, 2018)

2. STRATEGIES OF EUROPEAN COUNTRIES IN ORGANIC AGRICULTURAL DEVELOPMENT

The experience of economically developed European countries shows that advances in organic food production have come from government subsidies, which stimulate organic farming.

In addition, it should be underlined that the production of milk and meat in developed countries has reached such a level that the state stimulates the reduction of production of these basic products as the needs of the population are encountered. Accent is placed on preserving a healthy environment because animals are known to be major pollutants of ecosystems, especially land, as their excrements contain a large amount of undigested matters and drugs that disrupt the balance of the soil, and it is worryingly endangered.

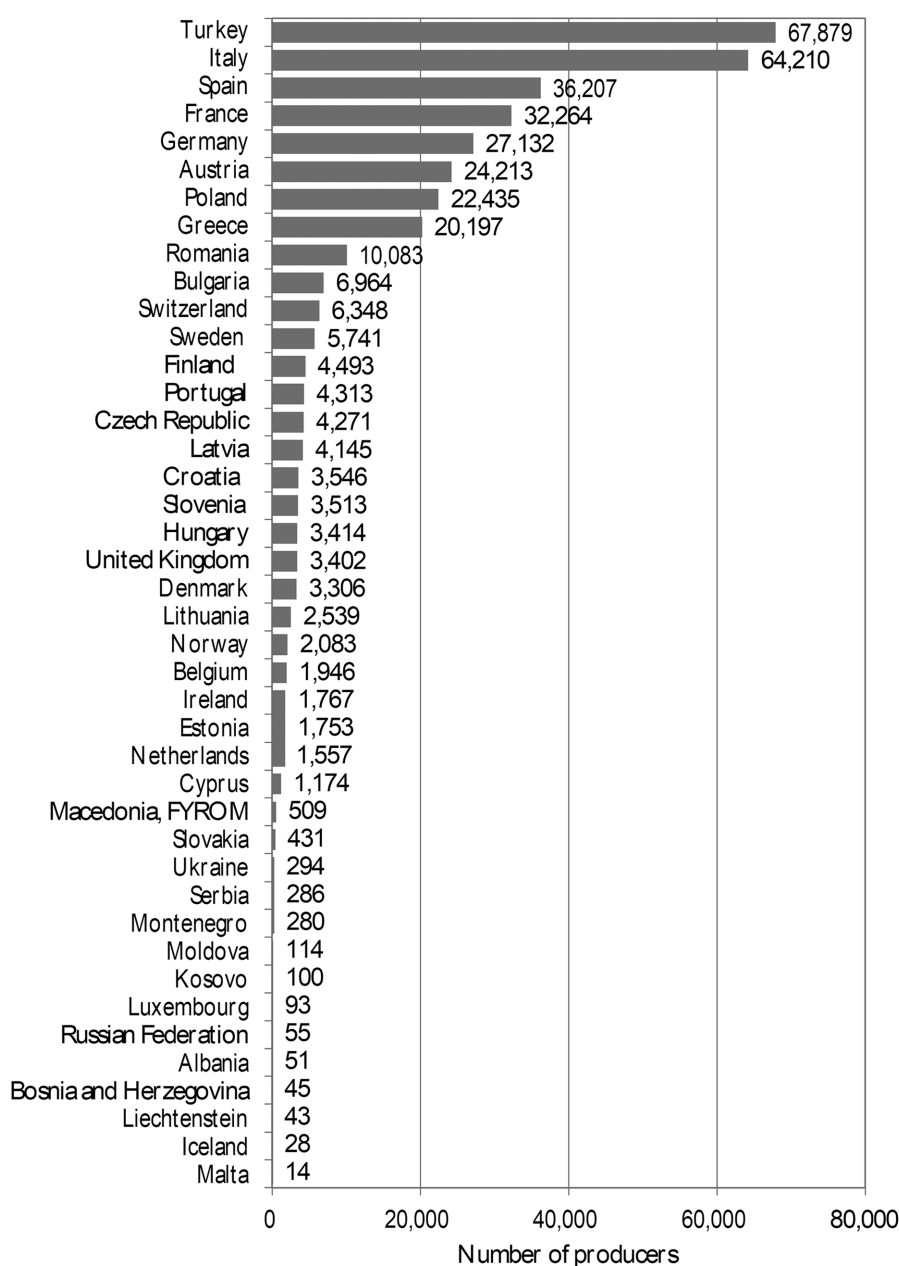


Figure 1 – Numbers of organic producers in Europe by country 2016

Source: FiBL-AMI survey 2018 based on national data sources and Eurostat.

Animals create 130 times more waste products than humans. All modern biotechnology (production of enzymes, probiotics, chelating forms of microelements, organic selenium and chromium, oligosaccharides, etc.) is realized in order to maximize the use of nutrients in the organism and to eliminate undigested food from the environment.

In this sense, the aim of the European countries in the future is to reduce commercial production and to accelerate the production of quality seed material in both crop production and genetic material of the tested animals' throats selected for high production. High quality seed material of plant and animal origin has been obtained by the development of molecular biology and genetic engineering, all for the sake of making big profits, and is a sublimated knowledge that needs to be valorized through this profit. More than 45% of organic production in the European Union consists of grasslands and meadows for organic livestock production.

2.1. Organic producers and importers

There were more than 370,000 organic producers in Europe in 2016 (FiBL – AMI survey, 2018). The countries with the largest number of producers were Turkey (almost 68,000) and Italy (more than 64,000). Spain, France, and Germany had only half of the producers that Turkey and Italy had. Next countries were Austria, Poland and Greece. Romania, Bulgaria, Switzerland, Sweden, Finland and Portugal had significantly smaller number of producers. North Macedonia, Slovakia, Ukraine, Serbia and Montenegro had about 10 to 15 times fewer organic food producers than Italia and Spain (see Fig. 1).

Compared to the growth in 2015, the increase in numbers of producers was higher (+7 percent) in Europe. Over the decade 2007-2016, the number of producers in Europe increased by 76 percent.

Figure 2 presented the number of processors and importers. This number increased in almost all European countries in 2016. In Europe, there were about 66,000 processors. The country with the largest number of processors is Italy (26%), and the country with the most importers is Germany (FiBL – AMI survey, 2018).

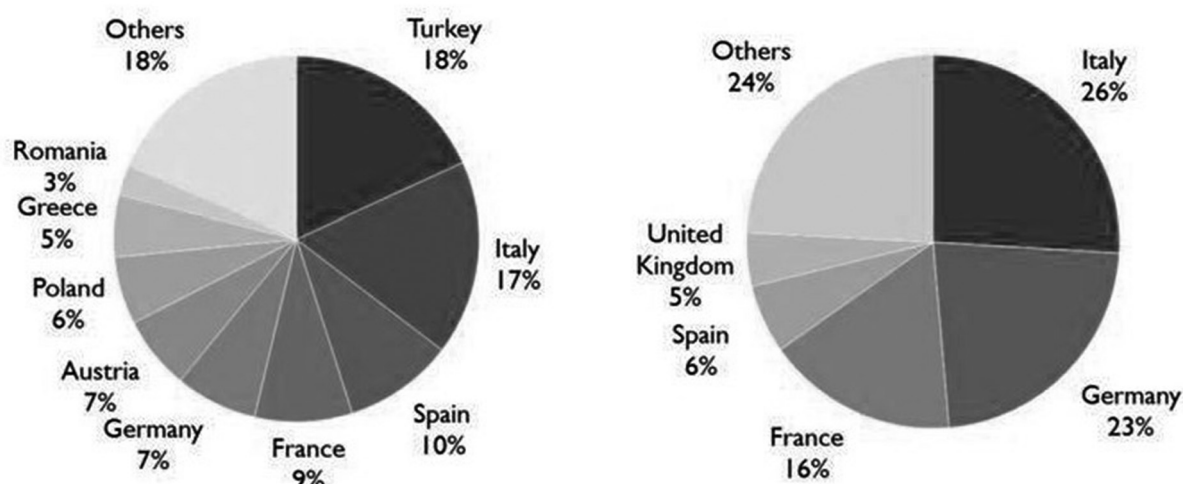


Figure 2: Europe: Distribution of organic producers (left) and processors (right) 2016

Source: FiBL-AMI survey 2018, based on national data sources and Eurostat.

The growth of the organic sector in both European Union as well as Europe overall in 2016 was accompanied by two trends:

1. Overall double-digit growth of 11.4 percent in Europe,
2. Growth of organic farmland continued albeit at a slower pace, at 6.7 percent in Europe overall and 8.2 percent in the European Union.

In 2016, in Europe 13.5 million hectares were organic. Spain continues to be the country with the largest organic area in Europe (more than 2 million hectares), followed by Italy (1.8 million hectares) and France (1.5 million hectares).

At present, however, only 2.7 percent of the total agricultural land in Europe is organic farmland, the percentage going up to 6.7 percent in the European Union countries.

Organic retail sales in Europe were valued at 33.5 billion euros. The European Union represents the second largest single market for organic products in the world after the United States (FiBL-AMI survey, 2018).

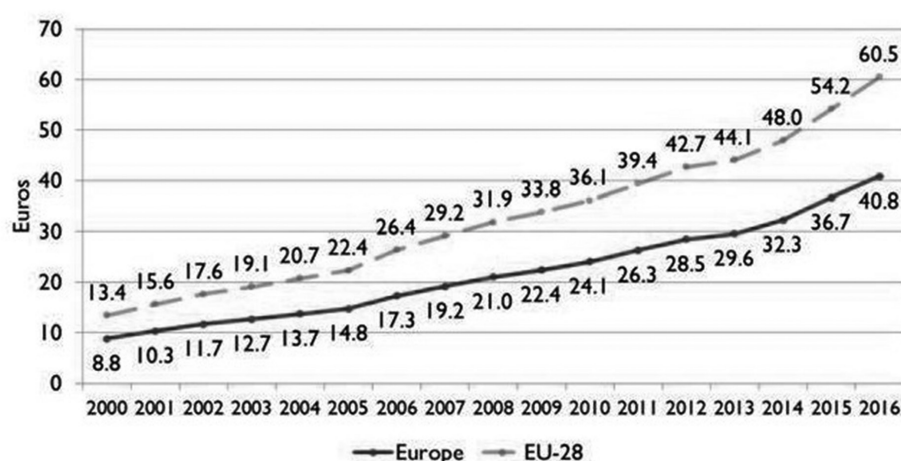


Figure 3: Europe: Growth of the per capita consumption 2000-2016

Source: FiBL-AMI survey 2018 based on national data sources

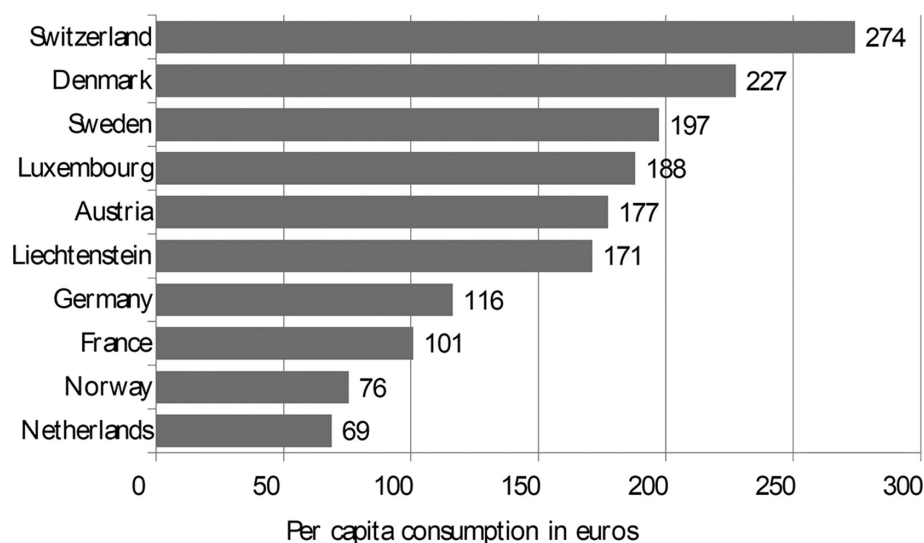


Figure 4: Europe: The countries with the highest per capita consumption 2016

Source: FiBL-AMI survey 2019 based on national data sources.

In 2016 European consumers spent 40,8 euros on organic food per person (European Union: 60,5 euros). Per capita consumer spending on organic food has doubled in the last decade (Fig 3). The most money for organic food paid Swiss (274 euros per capita), Danes 227 euros, citizens of Sweden, Luxembourg, Austria and Lichtenstein – about 200 euro per capita.

The data analysis shows that there are still large discrepancies between European countries. Even though organic agricultural land in some countries in Central and Eastern Europe account for large shares of the overall agricultural land, consumer spending, although growing, remains low as a proportion of total spending on food in these countries (Willer et al., 2018).

3. ORGANIC AGRICULTURE IN THE REPUBLIC OF SERBIA AND LEGISLATIVE FRAMEWORK

Organic production started in the Republic of Serbia long before the adoption of the legislative framework. In the vicinity of Blace in 1989, the Lion foods company started its first organized organic production. The development of the non-governmental sector will start in Subotica next year with the founding assembly of the Terras Association (Simić, 2017).

Today's producers of organic products in Serbia are facing irregular and incomplete market supply of seed and planting material, insufficient quantities of biological plants for the protection of products, organic fertilizers and compost.

In 2006, the most important legal act in the field of organic production in Serbia was adopted: The Law on Organic Production and Organic Products (2006-2019). In addition, the field of organic production in the Republic of Serbia is regulated by the Rulebook on Control and Certification in Organic Production and Organic Production Methods (2011-2012), Rulebook on Documents Submitted to the Authorized Control Organization for Issuance of Certificate of Performed Control, as well as on the Conditions of Sale of Organic Products; it also lays down the conditions for the certification of organic import products, as well as the conditions and manner of sale of organic products together with products from conventional production (2010). The organic product must be recognizable and properly labeled so as not to be confused with another, conventionally produced. The Organic Production Act regulates the production of agricultural and food products obtained by organic production methods. The law targets the goals, principles and methods of organic production, the method of control, labeling and certification of organic products. The processing, storage, transport, import and export of organic products, supervision of entrusted operations, and other issues of importance for organic production are particularly welcome.

The goal of the Organic Production Law is to implement organic food production methods with rational use of energy and natural resources, as well as respect for biological cycles and biodiversity, without the use of harmful chemical agents (pesticides, artificial fertilizers, growth regulators, genetically modified components).

The law defines plant production, certification of organic products, control of products and organizations that carry out control, labeling of organic products, organic product and organic production, and also determines the length of the period of conversion of conventional production to organic, as well as certification, methods of processing organic product and phases in organic production. The Act provides for severe penalties for the sale of organic products

without certification and (or) without special labeling of the products. The bylaws to the Ordinance on the Conditions for Obtaining a Certificate or Certificate for Organic Products specify the manner in which documentation is issued. The Rulebook on Technological Procedures in the Processing of Products Produced by Organic Production Methods, Cleaning Methods and Cleaning Agents for Process Lines defines the permitted ingredients, additives and auxiliary substances in food processing (2006).

In 2010 the new legal act on Organic Production was adapted. Organic production Law was focused on financing organic production in the Republic of Serbia. This law provides for the allocation of incentive funds.

According to the current legal framework, the implementation of incentive funds for the development and improvement of organic production is envisaged, from three sources:

- the budget of the Republic of Serbia,
- donation, and
- other funding sources.

Support measures can be classified into two main groups:

- Measures explicitly intended to develop and promote organic production,
- Accompanying measures for the development and improvement of organic production.

The first group of measures may include aid measures for households and other eligible beneficiaries:

- during the conversion period or during production period to ensure continuity of production on the farms,
- in the process of certification of organic production and organic products,
- in the process of education and training for organic production,
- to set up demonstration experiments in the organic production and development of the organic sector in the work of the agricultural advisory service,
- when joining.

The second group of measures (the so-called accompanying measures) are not exclusively intended for the development of organic production, but the holdings engaged in this production can use them, or indirectly benefit from them. These are measures such as:

- assistance aimed at promoting and protecting local products,
- funds for systematic control of the fertility of arable agricultural land,
- support for the export of agricultural products,
- support for the implementation of quality systems.

As a result of the implementation of incentive measures, from 2010 to 2017 there was an increase in the total area under organic production and an increase in the number of producers (Table 1).

During the four years the area under organic agriculture has increased by over 100%, almost the same as the number of producers, while the number of subcontractors has quadrupled (table 2).

Largest share in organic production of agricultural products in Republic of Serbia has fruits (34%), followed by cereals (31%), industrial crops (19%), forage (10%), vegetables (2%) and medicinal and aromatic herbs (Fig. 5)

Table 1. Organic production in Serbia 2010-2017

| Year | Organic Area (ha) | Share in %* | Organic producers |
|------|-------------------|-------------|-------------------|
| 2010 | 8.635,00 | 0.17 | 137 |
| 2011 | 6.236,73 | 0.12 | 323 |
| 2012 | 6.340,09 | 0.13 | 1061** |
| 2013 | 8.228,01 | 0.16 | 1281** |
| 2014 | 9.547,83 | 0.27 | 1867** |
| 2015 | 15.298,00 | 0.44 | 2289** |
| 2016 | 14.358,00 | 0.41 | 2794** |
| 2017 | 13.423,12 | 0.38 | 6.153** |

* Share of organic production in total agricultural land in Serbia

** Subcontractors involved

Source: Calculated using FiBl database <https://statistics.fibl.org/europe/key-indicators>

Table 2. Arable and meadows area under organic production in Serbia (2013-2017)

| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---------|---------|-----------|-----------|-----------|
| Total area (ha) | 8227.99 | 9547.83 | 15,298.01 | 14,357.92 | 13,423.13 |
| Arable area (ha) | 5355.25 | 7998.47 | 13,398.19 | 12,929.00 | 11,874.85 |
| Meadows / pastures (ha) | 2872.74 | 1549.36 | 1,899.82 | 1,428.92 | 1,548.28 |
| Number of manufacturers | 259 | 291 | 334 | 390 | 434 |
| Number of subcontractors | 1022 | 1575 | 1955 | 2794 | 5719 |
| Number of manufacturers (with subcontractors) | 1281 | 1866 | 2289 | 3184 | 6153 |

Source: Directorate for National Reference Laboratories,
RS Ministry of Agriculture, Forestry and Water Management

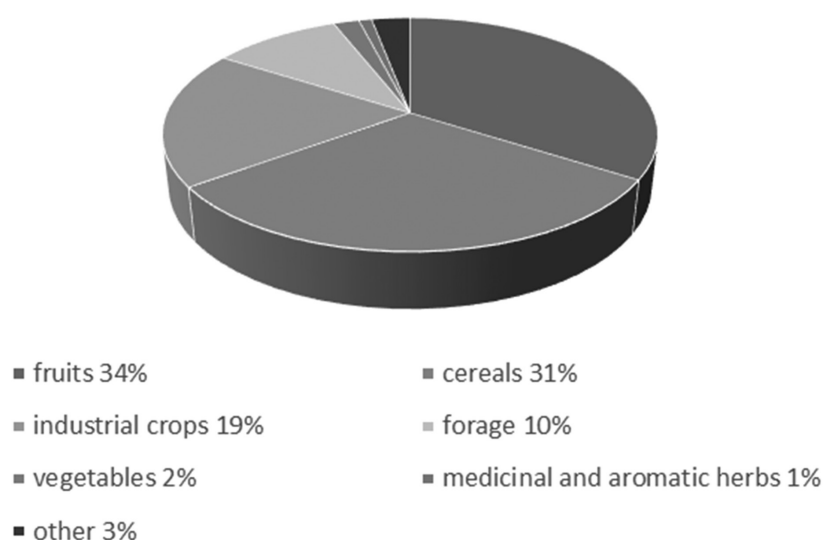


Figure 5: Structure of crops production on the territory of the Republic of Serbia in 2017.

Source: Directorate for National Reference Laboratories,
Ministry of Agriculture, Forestry and Water Economy

According to statistics of the Ministry of Agriculture, Forestry and Water Economy of the Republic of Serbia, in period 2011-2018 the total area under organic production increased 3 times, while the number of producers of organically certified products doubled (table 3).

Table 3. Structure of Organic Production in the Republic of Serbia (Source: http://www.dnrl.minpolj.gov.rs/o_nama/organska/organska_proizvodnja_u_srbiji.html)

| Description / Year | | 2013 | 2015 | 2016 | 2017 | 2018 |
|--------------------|-------------------|------|------|------|------|------|
| Sheep | Organic status | 2793 | 3232 | 2552 | 4665 | 5138 |
| | Conversion period | 1238 | 1616 | 1826 | - | - |
| | Total | 4031 | 4848 | 4378 | 4665 | 5138 |
| Pigs | Organic status | 57 | 100 | 223 | 87 | 284 |
| | Conversion period | 118 | 132 | 60 | - | - |
| | Total | 175 | 232 | 283 | 87 | 284 |
| Cows | Organic status | 1853 | 2593 | 2560 | 3099 | 3594 |
| | Conversion period | 323 | 153 | 335 | - | - |
| | Total | 2176 | 2746 | 2895 | 3099 | 3594 |
| Goats | Organic status | 81 | 1117 | 1115 | 2048 | 1486 |
| | Conversion period | 865 | 569 | 291 | - | - |
| | Total | 946 | 1686 | 1406 | 2048 | 1486 |
| Poultry | Organic status | 1362 | 1079 | 3122 | 4415 | 6735 |
| | Conversion period | 28 | 301 | 36 | - | - |
| | Total | 1390 | 1380 | 3158 | 4415 | 6735 |
| Donkeys | Organic status | 12 | 16 | 2 | 47 | 0 |
| | Conversion period | 9 | 4 | 0 | - | - |
| | Total | 21 | 20 | 2 | 47 | 0 |
| Horses | Organic status | 48 | 90 | 6 | 177 | 114 |
| | Conversion period | 162 | 128 | 159 | - | - |
| | Total | 210 | 218 | 165 | 177 | 114 |
| Bee Societies | Organic status | 603 | 471 | 1735 | 2307 | 3061 |
| | Conversion period | 1337 | 2033 | 1143 | - | - |
| | Total | 1940 | 2504 | 2878 | 2307 | 3061 |
| Carp | Organic status | 0 | 0 | 0 | 0 | 0 |
| | Conversion period | 655 | 0 | 0 | 0 | 0 |
| | Total | 655 | 0 | 0 | 0 | 0 |

At the moment, the primary task of agriculture in Serbia is to work on programs for the development of healthy organic food in parallel with the programs for the promotion of animal feed production. In order to encourage more intensive development of organic production in our country and to define measures and activities for overcoming obstacles to better development of organic production, in 2018, the Organic agriculture development Plan was adopted as an integral part of the National Rural Development Program (2018). Continuous harmonization of regulations in this area, one of the goals foreseen in the Plan for the development of organic production.

Organic farming requires an increase in the number of employees. Greater participation of educated workforce is needed, implementation of agro-technical measures that cost nothing but bring benefits: optimal sowing time and density, crop rotation, as well as mechanical plowing, waste recycling, water resource management, and proper selection of seed and variety material for specific locality. The fragmentation of agricultural holdings in rural areas does not constitute an obstacle to the development of organic agriculture. However, the merging of agricultural holdings into cooperatives with state direct investments and grants encourages the development of organic agriculture in Serbia (Beslać et al., 2018).

Organic agriculture is considered as a more sustainable alternative to conventional agriculture. It represents the only safe path to a transition to a green economy that leads to the advancement of the well-being of human society and social equality, with a significant reduction in environmen-

tal risks. This means that organic farming offers solutions to reduce poverty and hunger while improving environmental performance. However, the application of organic farming requires numerous changes in the whole food chain, from producers to end consumers, as well as changes in their behavior. Considering the numerous diversities of agriculture in different countries, one single solution and model of transformation towards organic agriculture cannot be distinguished. In this path of transformation, new, modern, ecological technologies can provide significant support for the development of organic agriculture and enable it to become a world standard, not an exception. In this paper we will try to explain the role and importance of organic agriculture and its relationship with the concept of green economy (Jankovic, Jovanovic, 2018).

The experience of developed countries, which are more involved in organic production, has shown that farmers from larger estates are also beginning to engage in organic farming.

4. MARKETING SUPPORT FOR ECO ZONE DEVELOPMENT AND ORGANIC FOOD MARKETS

In the developed countries of the EU and the world in recent years, there is a lack of organic products due to increased market demand, but also a lack of basic agro-ecological conditions due to increased pollution of soil, water and air). Therefore, less developed countries where agro-ecosystems are still preserved are given a chance to increase their exports. Fruits and vegetables, eggs, meat and meat products, cheeses, kajmak, honey, medicinal, spicy and aromatic herbs, forest and nuts and other organic farming products are increasingly in demand in the EU market.

Serbia has significant natural potential for the development of organic agriculture and the production of quality and safe food. Geographic location, climate, land composition and other features of natural sites represent natural resources for the development of organic agriculture. The existing climatic-pedological and ecological benefits of our country provide extremely favorable conditions for the cultivation and production of the best quality health food. However, the degree of use of natural resources, primarily land, is insufficient. Out of about 4.252 million hectares of arable land, a small part is organically cultivated. Bearing in mind the areas of farms now under organic production in Serbia (Cvetković, Marić 2019)

Key partners in the marketing of organic food production are agricultural family farms, agricultural cooperatives and other similar associations, processing companies, intermediaries, companies and other institutions and organizations from the non-commercial sector, as well as individual consumers (Mitrović et al., 2019). Each partner works in the common interest, thus contributing to the development of healthy organic food production through the competences it possesses compared to the performance of other partners.

Public and private financial institutions are expected to provide financial and technological assistance to cooperatives and individual family farms, as well as marketing assistance to agricultural cooperatives, cooperatives and other associations in the development of marketing concepts and organizational structuring of marketing management (Živanović et al., 2019).

Starting from the basic idea about the possibilities of development of green economy and organic agriculture in order to produce quality health-safe food, using natural resources, it is necessary to develop projects of economic ecozones, similar to other countries in the environment (Gulić, 2019). Within them, it is necessary to define areas that meet the most stringent environmental

standards, provide support to the local community, inform the population where the greatest development opportunities are, educate the population to prepare land for the production of health food through the application of composting.

Encouraging the development and application of biotechnology processes in the food processing and quality control and food safety in accordance with the HACCP methodology and ISO 22000 standards (Jovanović et al., 2012), raising the level of processing and finalization, as well as new ways of storing, and transporting health food are the tasks of processors – partners in the concept of marketing management.

The experience of European Union countries indicates that the biggest contribution to the growth of the organic food market comes from the chains that absorb up to 70 percent of all products belonging to this category, and then from the business sector – restaurants, schools, kindergartens, hotels, hospitals.

That is why it is needed to offer assistance to the trading companies in our country by all other partners in the field of product range, development of modern product design and packaging, distribution, storage, display and promotion of healthy organic food at the point of sale, in order to attract consumers. Specialized scientific research and educational institutions are tasked with the scientific and professional development of all partners in the development, production, marketing and quality control of health-safe organic food.

5. CONCLUSION

Organic farming is often proposed as a more sustainable alternative to conventional agriculture. It represents the only reliable path to a transition to a green economy that leads to the progression of the well-being of human society, with a substantial decrease in environmental risks. However, the implementation of organic farming requires many changes in the whole food chain, from producers to end consumers, as well as changes in their behavior. Taking into account the many diversities of agriculture in different countries, it is not possible to recommend a single solution and model of transformation towards organic farming.

Available data on organic farming shows that the European organic food sector is well developed. Relatively high shares of agricultural land, continual growth of the area and the number of operators, as well as a fast-growing market, show the exceptional dynamics that the organic food market and the corresponding sector has in many European countries. The organic food market is growing faster than production, and domestic supply cannot meet demand.

Although conventional production still forms the main part of the agri-food industry in all European countries, organic farming is becoming its important component. The European organic food market recorded a growth rate of 11.4%. The highest growth was determined in France (22%). In the decade 2007-2016, the value of European and EU organic food market has more than doubled. This is due not only to greater consumer awareness in environmental, health and nutrition problems, but also mainly to the fact that the industry has recognized new requirements and chances through the formation of a new, very important and profitable market sector.

Serbia has great potential for organic production. Climate, soil and natural resources provide favorable conditions for organic farming, a long tradition in food production, as well as proxim-

ity to a large and ever-growing organic food market in the EU. The largest demand for organic products is in larger cities due to higher purchasing power. Organic product prices are up to 30% higher than conventional product prices.

Land in Serbia has been largely recovered due to reduced use of artificial fertilizers and pesticides. Isolated land parcels and livestock isolated land parcels and livestock farms can be used to produce and increase exports of health food. Organic agricultural production means fully controlled production. In order to be grounded in one area, it must meet precisely defined conditions relating to the isolation of land for organic production and processing plants from pollution sources, then the chemical and microbiological status of water, the harmonious development of plant and livestock farming production and training of experts and manufacturers with the obligation to constantly innovate knowledge. Serbia, with its natural resources and environmental conditions, as well as quality staff, still meets the above conditions. Nevertheless, organic agriculture is a marginal sector in Serbia.

Without the help of the state, this production can hardly withstand the competition of conventional production, since its economic effects are realized only after many years. It is extremely important that incentives are adequately created and tailored to the needs of the manufacturer. Producers involved in organic production have higher production costs and these higher production costs are the result of higher labor force participation on the one hand and additional control and certification costs on the one hand, and lower crop production and production.

Through an adequate marketing campaign, it is necessary to attract foreign investors who would support the development of organic agriculture in our country, especially investors from countries that import organic food. This would indirectly stimulate the growth of the organic food market and change the lifestyle of our consumers. Consumer education in this regard is the task of marketing management.

REFERENCES

- Beslać M., Belokapić P., Beslać J., Finansiranje i proizvodnja organskih proizvoda u funkciji održivog privrednog razvoja, *Ecologica* 90 (2018), 326-330.
- Cvetković A., Marić M., Značaj finansijske podrške i druge pomoći države razvoju organske poljoprivrede u Republici Srbiji, *Ecologica*, Vol. 26, No 94 (2019), 212-216.
- Gulić A., Kriterijumi za prostorno planiranje privrednih zona u smeru razvoja zelene ekonomije u Sloveniji. *Ecologica*, Vol. 26, No 93 (2019), 21-25.
- Janković M., Jovanović L., Organska poljoprivreda i zelena ekonomija, *Ecologica*, Vol. 25, No 91 (2018), 507-511.
- Jovanović L., Pešić-Mikulec D., Pavlović I., Granski standardi kvaliteta i bezbednosti u prehrambenoj industriji i primarnoj proizvodnji. *Ecologica*, Beograd 2012, p.270.
- Mitrović Lj., Mitrović A., Mitrović S., Zadruga u funkciji održivog razvoja Srbije, *Ecologica*, Vol. 26, No 93 (2019), 49-54.
- Simić I., Organic Agriculture in Serbia at a Glance 2017, National Association Serbia Organica, 2017.
- Živanović B., Cvejić A., Sikimić U., Perspektive finansiranja organskog stočarstva modelom bankarskog kredita u Republici Srbiji, *Ecologica*, Vol. 26, No 96 (2019), 525-534.
- Willer, 2018, <https://orgprints.org/34670/1/willer-et-al-2018-european-statistics.pdf>, accessed 11.02.2020.

- Fibl-AMI survey, 2018
- IFOAM, 2019, <https://www.ifoam.bio/en/news/2019/02/13/world-organic-agriculture-2019>, accessed 11.02.2020
- Law on Organic Production and Organic Products (Official Gazette of RS, 62/2006, 30/2010, 17/2019).
- National Rural Development Program (Official Gazette of RS, 60/18).
- Rulebook on control and certification, 2011-2012, Pravilnik o kontroli i sertifikaciji u organskoj proizvodnji i metodama organske proizvodnje (Official Gazette of RS, 48/2011 and 40/2012).
- Rulebook on documents, 2010, Pravilnik o dokumentaciji koja se dostavlja ovlašćenoj kontrolnoj organizaciji radi izdavanja potvrde, kao i o uslovima i načinu prodaje organskih proizvoda (Official Gazette of RS, 30/10).
- Rulebook on technological procedures, 2006, Pravilnik o tehnološkim postupcima u preradi proizvoda proizvedenih po metodama organske proizvodnje, metodama čišćenja i sredstvima za čišćenje tehnoloških linija, dozvoljenim sastojcima, aditivima i pomoćnim supstancama u preradi hrane (Official Gazette of RS, 62/06).
- http://www.dnrl.minpolj.gov.rs/o_nama/organska/organska_proizvodnja_u_srbiji.html, accessed 11.02.2020
- <https://statistics.fibl.org/>, accessed 11.02.2020

THE IMPACT OF GLOBALIZATION ON THE DIGITAL ECONOMY IN BULGARIA

Maria Kicheva¹ 
Nadezhda Petkova² 

DOI:

Abstract: *Globalization is the reason for significant changes in all spheres of life. Its effects on the world economy have been observed for a long time. The impact of globalization is an important economic matter and its research is as important.*

The aim of this research is to track the trends in the development of the digital economy in Bulgaria and the corresponding occurring change which follow it. Bulgaria established itself as one of the key centers for innovative development in 2018 and one of the reasons for that is precisely the globalization in the sphere of economy and information and communications technologies. The country's digital economy forestalls the trends and grows 2.5 times faster than the economies of the big five on the European Union's market. The transformation of the Bulgarian economy would increase its competitiveness and would place it at a leading position in the region. Due to these and many other reasons it is important for these matters to be analyzed from a scientific point of view.

This paper contributes for the clearer formulation and understanding of the matters related to globalization as a whole, but also for tracking its impact on the state of digital companies in Bulgaria. Similar research can be applied and further developed for each and every European country and more.

Keywords: *Globalization, Digital Economy, Bulgaria, Innovation.*

1. INTRODUCTION

The globalization of the world gives opportunities for a new, “global” demand, an exchange of new products and services and cultural enrichment to be created. Globalization is what eliminates market's boundaries by creating innovative opportunities for the entrepreneurial business. Globalization is an important factor for the worldwide economy's development. It is a phenomenon that leads to both prosperity and in the same time to problems in different spheres of society. “Globalization” is a term commonly used as a synonym for the increasing internationalization that supposes the shift of influence from national governments to transnational corporations. The process itself is connected to the distribution and interpenetration of ideas, capital, technology, and elements of culture. In the face of economic globalization, a new necessity might have emerged: a necessity for consideration and/or re-consideration, as well as one for an analysis of its impact on the economic and social development of separate regions and especially a necessity for an effective management of the factors that influence those processes. Globalization influences the regional distribution within the framework of every national economy differently. Having in mind the set of factors that constitute such global economic model, which includes newer and newer technologies, new markets, etc., the contribution of science on bringing forward non-technological innovations (marketing or organization related ones) will become more and more important. The role of the human factor, the approaches and the mechanisms for impacting people

-
- 1 South-West University „Neofit Rilski“, Faculty of Economics, Department of Economics, 66 Ivan Mihaylov Str., Blagoevgrad, Bulgaria
 - 2 South-West University „Neofit Rilski“, Faculty of Economics, Department of Economics, 66 Ivan Mihaylov Str., Blagoevgrad, Bulgaria

is more clearly defined due to the efforts of the scientific community. Accordingly, the result from the scientific contribution will be measured through using people as the most valuable asset and possible carrier of a continuing advanced competitive advantage for every economic entity.

One of the phenomena that occurred mostly due to the processes related to globalization in terms of technology is precisely the digital revolution for the last few decades. According to the Digital Economy Report (2019), “The digital economy continues to evolve at breakneck speed, driven by the ability to collect, use and analyse massive amounts of machine-readable information (digital data) about practically everything” (p.1). The report also notes that “The expansion of the digital economy creates many new economic opportunities. Digital data can be used for development purposes and for solving societal problems. It can thus help improve economic and social outcomes, and be a force for innovation and productivity growth. Platforms facilitate transactions and networking as well as information exchange. From a business perspective, the transformation of all sectors and markets through digitalization can foster the production of higher quality goods and services at reduced cost. Furthermore, digitalization is transforming value chains in different ways, and opening up new channels for value addition and broader structural change” (2019, Digital Economy Report, p.3-4).

2. THE DIGITAL ECONOMY IN BULGARIA

A number of companies and organizations create innovative solutions for this new era. This corresponds to the increase in users and consumers of the new generation of product and services. Every day, around 360 million Europeans work, study, shop, buy and sell online and this number keeps constantly growing. With the help of digital technologies, we see the improvement of systems of communication, education, health, transport, manufacturing, security, agriculture, as well as the definition of solutions to combat climate change. Many of these changes have appeared due to the processes of development and globalization in the field of technology. In Bulgaria, cutting-edge solutions are being developed by both startups and traditional businesses and their innovative teams. Those people are also the capital for developing the innovative economy of the country.

On the one hand, Bulgaria has very high chances of transforming its economy through digitalization. Thus, it will increase the country's competitiveness and it will become a leader in the region in this field. There are many ideas, projects and development opportunities already. An evidence of the country's potential is the fact that the digital economy in Bulgaria is growing significantly in comparison to the tendencies in Europe. The rate of increase is two and a half times faster than the one of the Big 5 on the market of the European Union (Germany, France, Italy, the United Kingdom and Spain) as we can see in Figure 1. of the paper.

The period between 2012 and 2016 has been a very successful one for the digital economy in Bulgaria as an increase of 8.2% has been reported while the one of the Big 5 on the market is 3.1%. The country outnumbers the other countries in Central and Eastern Europe (CEE) as well where the increase is on average 6.2%. However, it is still behind the digital pioneers – the most digitalized countries on the continent are the Northern nations. For example, Switzerland's digital economy growth is 9.9%.

Traditional drivers of success are getting less and less significant. This is the reason why there is a focus on digitalization all over the world. According to McKinsey & Company's analysis (2019), “Bulgaria can build on its strong digital economy growth to catch up with Digital Front-runners” (p.4). Moreover, it is what can bring additional €8 billion of GDP until 2025. They are also predicting the amount for the whole region (CEE) to reach up to €200 billion.

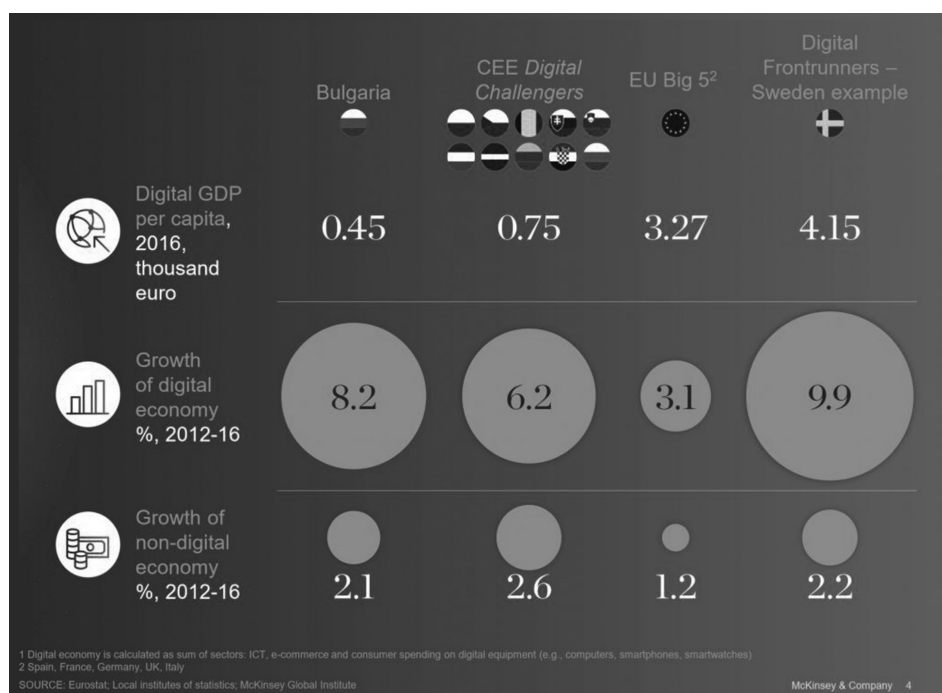


Figure 1. The potential of the Bulgarian digital economy.

Source: McKinsey & Company, The Rise of the Digital Challenges: How digitalization can become the new growth engine for Bulgaria Central and Eastern Europe (2019)

Also, according to the IMD World Digital Competitiveness Ranking, which is a ranking of 63 countries from all over the world including some European Countries, Australia, Canada, Chile, USA, Saudi Arabia, Russia and more, Bulgaria ranks 45th for 2019. If we look at the separate factors included in the report, we can see that the country has moved from 54th place in 2015 to 45th in 2019. In terms of the factor knowledge there is an upward movement for the last four years. As far as the factor technology is concerned, there is a steady result and when it comes to future readiness the country also shows a great improvement, moving from 59th place in 2015 to 48th place in 2019.

However, there are some challenges before the development of the digital economy in Bulgaria as pointed out in the report Innovation Ship Bulgaria Digital 2018. Some of them include: there is a shortage of qualified personnel which turns out to be a major difficulty for new or already established digital companies; heavy administrative procedures and lack of institutional support are also important barriers for the rapid expansion of the field.

On the other hand, if we compare Bulgaria to all state-members of the European Union in terms of DESI (Digital Economy and Society Index) for 2019 we see in Figure 2. that it ranks last. Despite the potential that the digital economy in Bulgaria has, as we have discussed in the paper before, its rank decreased due to two main reasons: a limited performance in some of the DESI dimensions measured and better performance of the other member states in some of the indicators included in the index. The indicators included in the index are connectivity, human capital, use of Internet services, integration of digital technology and digital public services.

All these factors are very important for the digitalization of the economy which in 21st century has the potential to bring great opportunities for growth, increased competitiveness and improved business environment in a country as a whole.

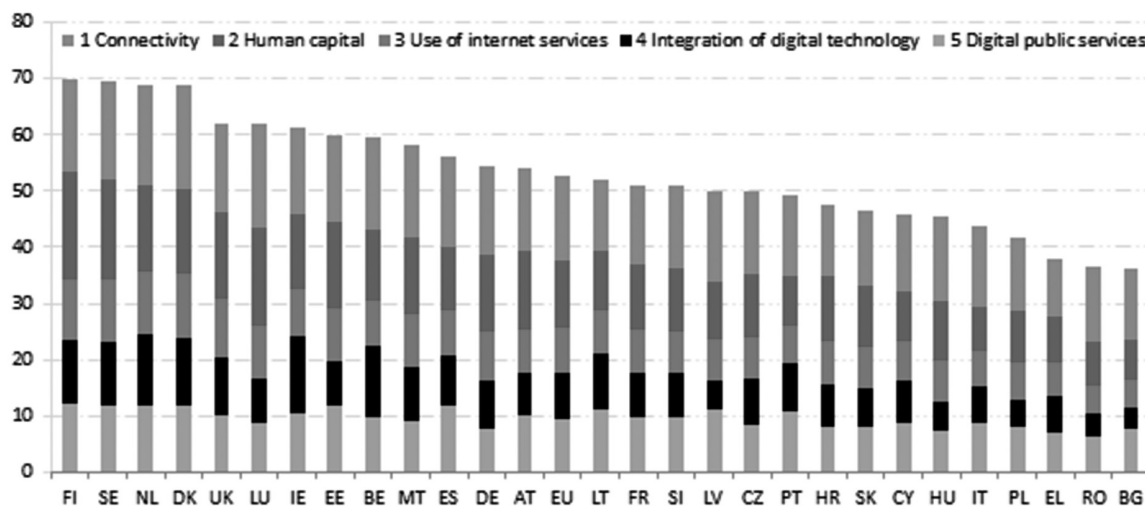


Figure 2. Digital Economy and Society Index (DESI) 2019 ranking

Source: European Commission, <https://ec.europa.eu/digital-single-market/en/scoreboard/bulgaria>

The results of the European Commission's report show that Bulgaria performs relatively well in connectivity, especially as regards to the wide availability of ultrafast and mobile broadband networks. It has also made significant progress with the e-government dimension, with growing number of users and a high score for the provision of digital public services to businesses. However, Bulgaria scores well below the average in human capital, its overall level of digital skills being among the EU's lowest. People with at least basic digital skills account for 29 % of the total Bulgarian population, against an EU average of 57 %. Only 11 % of people have skills that are above basic, which equals almost one third of the EU average. Bulgaria also performs well below the average in integrating digital technology. Companies are not yet taking full advantage of the possibilities offered by online commerce: 6 % of SMEs sell online (against the 17 % of the EU average), 3 % of total SMEs are selling cross-border and an only 2 % of their turnover comes from the online segment. Bulgaria has a National Programme linked to the programming of EU structural funds called „Digital Bulgaria 2025”, which outlines some measures to improve connectivity, public services and private sector integration of digital technologies. However, this is not an overarching strategy to support digital transformation in Bulgaria. A concept note for the Industry 4.0 strategy was elaborated in 2017 but it is still a draft. The areas of intervention included in the Concept for digitalisation of the business, export orientation and competitiveness are as follows: building a stable relationship between the industry and the science in the country and a fastened integration of Bulgaria into European and international programs and projects; technological renovation of the Bulgarian economy through the introducing of standards, creating appropriate infrastructure, establishment of specific mechanisms for the improvement and market penetration of technological innovations; creation of human, scientific, organizational and institutional capacity for the development of Industry 4.0 in Bulgaria.

3. FUTURE RESEARCH DIRECTIONS

The transformation of the Bulgarian digital economy would increase its competitiveness and would place it at a leading position in the region. Due to these and many other reasons, discussed in this paper, it is important for these matters to be analyzed from a scientific point of view. There is not enough research on the topic in Bulgaria and this was the reason why the authors decided to focus on it in this paper. Future research on the matter should be directed at qualitative and quanti-

tative measures implemented in assessing the state and potential of the digital economy in Bulgaria, similar to the ones analysed in the paper. Moreover, different possibilities for institutional and private initiatives and policies should also be discussed and further developed. Thus, providing a favourable environment in which all types of digital businesses in Bulgaria would thrive.

This paper contributes for the clearer formulation and understanding of the matters related to globalization as a whole, but also for tracking its impact on the state of digital companies in Bulgaria. Similar research can be applied and further developed for each and every European country and more.

4. CONCLUSION

Globalization has made it possible for business enterprises to conduct business operations that extend beyond their areas of establishment. It has become increasingly easy for businesses of all types to participate in the world market because of IT, which virtually any business can access. Improved access to information by business enterprises supposes the opportunities to reach a greater consumer base. This is necessary even more due to the globalization of human capital, which is characterized by the easy migration of skills between countries. Because of the opportunities offered by information and communication technologies, the vision of perfect competition is also becoming a reality, which was not possible until recently. Competition is fostered by the increasing size of the market opened up through globalization.

Bulgaria's digital economy has also been greatly influenced by the processes of globalization and the data analysed in this paper shows the great potential of the field, but also some challenges that it is facing. The implications of the research can be differentiated as follows: despite some impressive successes, the small digital companies are facing numerous challenges; there are some problems related to the dynamic of their ecosystem, the localization and solution of which are of great importance; the creation of future state policies specifically aimed at supporting and facilitation of the work of small and medium digital companies and start-ups is of great importance for their future, etc. When it comes to education necessary for this field, it is important that programs both at school and at universities are directed more at digitalisation studies and practices and less at old-fashioned disciplines and theories.

REFERENCES

- European Commission. (2019). Digital Economy and Society Index (DESI) 2019 Country Report, Bulgaria. retrieved from <https://ec.europa.eu/digital-single-market/en/scoreboard/bulgaria>
- IMD World Competitiveness Center. (2019). IMD World Digital Competitiveness Ranking 2019, retrieved from <https://www.imd.org/wcc/world-competitiveness-center-rankings/world-digital-competitiveness-rankings-2019/>
- McKinsey & Company (2019). The Rise of Digital Challenges. How digitalization can become the new growth engine for Bulgaria and Central Eastern Europe (CEE), retrieved from https://digitalchallengers.mckinsey.com/files/McKinsey_Digital%20Challengers_Perspective_on_Bulgaria_online.pdf
- United Nations (2019). Digital Economy Report. Value Creation and Capture: Implications for Developing Countries. *United Nations Conference on Trade and Development*. Geneva, retrieved from https://unctad.org/en/PublicationsLibrary/der2019_overview_en.pdf

THE SUBURBANIZATION PROCESS AND QUALITY OF LIFE

Aleksander Ostenda¹

Tetyana Nestorenko²

Iryna Yemchenko³

DOI:

Abstract: *The issue of the suburbanization process (urban sprawl) is so important and at the same time still evolving that it forces constant updates and adaptation of research methods to the current situation. That is why it is so important to interest in this issue the greatest number of researchers who could comprehensively conduct research on these phenomena in an open knowledge exchange model. This is an extremely important and urgent problem, especially in the area of effective models and methods of public management that will enable effective management of space, accessibility and mobility so that cities develop intelligently, not only intensively, and to exclude extensive development as much as possible - deprived of control and affecting many areas of public and social life, the natural environment and, above all, the quality of life of residents. The authors of research indicate the impact of suburbanization on the perceptible and real quality of life of suburban residents. It seems necessary to take a systematic approach to the phenomenon of suburbanization and to make an attempt to shape it by the local government thanks to responsible public management in this area, which is particularly important in the broader context, when taking into account the full economic, psychological and social costs that the whole society incurs as a result of the spill Polish cities regardless of their size.*

Keywords: *Suburbanization, Urban Sprawl, Quality of Life.*

1. INTRODUCTION

Suburbanization, from the English word suburb, is a stage of city development characterized by a planned development of the outskirts of the city and the suburban zones. Periphery areas of the city turn into residential space in this stage of development, while the city center undergoes depopulation, leaving room for administrative buildings, public utility facilities, offices, and shops⁴. As opposed to planned suburbanization, uncontrolled building over of suburban areas is referred to as exurbanization or urban sprawl and is a result of the demand for new construction and the practices of developers which are harmful to the natural environment.⁵ It is accompanied by deindustrialization and the degradation of city centers.⁶

The issue of the spread of cities is significant enough and constantly evolving to force us to update and adapt our research methods to the current situation. That is why, it is important to arouse the interest of as many researchers as possible in this topic, so that they would be able to conduct comprehensive studies on these phenomena in a model of open exchange of knowledge. This is a very

¹ Katowice School of Technology, Rolna str.43, Katowice 40-555, Poland

² Berdyansk State Pedagogical University, Shmidta str 4, Berdyadsk 71112, Ukraine

³ Lviv University of Trade and Economics, Tuhan-Baranovsky str.10, Lviv 79000, Ukraine

⁴ Encyklopedia architektury. https://archirama.muratorplus.pl/encyklopedia-architektury/suburbanizacja,62_4357.html

⁵ A. Majer: *Socjologia i przestrzeń miejska*. (Sociology and Urban Space) Warsaw: PWN, 2010, p.209

⁶ H. Izdebski : *Ideologia i zagospodarowanie przestrzeni*.(The Ideology of Space Management) Warsaw: Wolters Kluwert Poland, 2013, p. 78

significant and pressing issue, especially in the area of effective models and methods of public management, which will enable effective management of space, accessibility and mobility so that, cities can develop intelligently and not only intensively and to exclude, whenever the possibility arises, extensive development – bereft of control which influences many areas of public and social life, the natural environment, but most of all the quality of life of the city's inhabitants.

2. QUALITY OF LIFE AND PERCEIVED QUALITY OF LIFE

In the subject literature there are terms such as: quality of life and perceived quality of life. It is inappropriate to use them interchangeably. It is very important to differentiate between them. Quality of life refers to an objective dimension.

The starting point in formulating any kind of conclusions on the subject always boils down to external conditions, the objective reality of a person being a source of stimuli and experiences. On the other hand, perceived quality of life is connected with the subjective attitude to reality. This is an evaluation shaped by emotions and feelings. It concerns the subjective dimension

Objective quality of life is similar in meaning to the term **living conditions** (or **level of life**) which mean all the objective conditions of infrastructural character in which the society (social groups, households and individuals) lives. They are mainly connected with: material condition, existential security and environmental security of the life of an individual. In defining objective quality of life, the data used is generally available in public statistics. Examples of measures used include average lifespan, monthly income and residential area.

Subjective quality of life is an evaluation of fulfilment of needs. Although, in literature of the subject there are numerous different definitions of this category there is a certain similarity between them. It is based on the subjective perception of one's own life within the framework of a specific system of values and under specific social, economic and political conditions. Examples of measures here include satisfaction with one's health, received income and residential situation.⁷

The complete picture of the quality of life is obtained studying both its objective and subjective dimension. In order to study objective quality of life we may use the ready-made sets of indicators provided by subject textbooks (e.g. indicators of sustained development developed for the Ministry of the Environment or indicators used within the framework of Urban Audit).⁸

The multidimensionality of the issue of quality of life is also reflected in another division of this concept. The aforementioned ones belong to the trend which may be called normative. They assume the existence of a certain ideal state – a norm, towards which every person should strive. His quality of life is an expression of the differences between the norm and the actual state. There are also definitions, according to which quality of life is connected with the wealth of experiences and not the fulfilment of needs.

Since the quality of life is a multidimensional concept with a rather loose definition connected with the profession or expertise of the person who is defining it, it is difficult to measure. The

⁷ T. Borys, P. Rogala (ed.), *Jakość życia na poziomie lokalnym – ujęcie wskaźnikowe* (Quality of Life on a Local Level – Indicator Approach), UNDP, Warsaw 2008 pp.13-14.

⁸ P. Rogala, *Zaprojektowanie i przetestowanie systemu mierzenia jakości życia w gminach* (Designing and Testing the System of Evaluation of Quality of Life in Municipalities), University of Economics in Wrocław, Faculty in Jelenia Góra, Jelenia Góra – Poznań 2009, p. 7.

difficulties in providing a precise definition of the term quality of life have led to a situation in which there is a lack of universal tools which would precisely define its level. Most likely, it would be easier to respond to a question why the level of the quality of life is measured than why it should actually be done. Despite the difficulties of this concept, the authors have attempted to answer the question posed in the title.

Currently in Poland we can observe progress in the phenomena of suburbanization around not only main cities but also smaller ones. Suburbanization processes that take place in Poland and the forces that cause them are similar to processes and forces that occur in other countries. For example, among the forces driving suburbanization were marketization of urban land, the shift of industrial land to tertiary use, transportation improvement, the availability of foreign and domestic capital, housing rehabilitation in the city, and new housing construction in the suburbs of China.⁹

Due to the political system which was in place prior to 1989, in Poland these phenomena had not commenced until the turn of the XX and XXI centuries. The main factor determining a decision about place of residence in Poland is the price of real estate. However, living in suburban areas adds other circumstances and aspects unknown to or forgotten by people deciding to live “outside the city”, which significantly influence the quality of their subsequent lives.

Key factors which determine quality of life of the residents of suburban areas are:

1. Employment

Access to employment is severely limited in suburban areas. Suburban quarters are characterized by the fact that they fill the role of bedrooms for “core” cities¹⁰, where the services provided by the core-city are not available. That is why, in deciding to live in the suburbs, a daily long commute to work must be assumed. The results of research conducted previously show that 43% of Poles commutes to work by car every day, devoting on the average 7 hours weekly to this task.¹¹

2. Education and care for children aged 3 and under

Families with small children, who are not of school age, often move to suburban areas. However, even at the stage of pre-school and earlier, these families encounter problems connected with availability of these kinds of facilities for their children. Frequently the towns and villages which experience the phenomena of suburbanization are not able to provide a sufficient offer, to care for their new inhabitants. More often than not this situation leads to the necessity of using private preschools and nurseries. There is especially a lack of nursery facilities, living in the suburbs there is virtually no possibility of utilizing such facilities be they public or even private. That is why, young parents wanting to find care for their small children are often forced to select a facility (usually private) in the „core city”, or to employ a babysitter. The first solution is definitely associated with additional hours spent in the car, since usually the nursery is not found near the place of employment. The second option is connected with employing a stranger and “allowing” this person to enter your home, entrusting them with care over a small child. As far as quality of life is concerned the lack of access to care for children under the age of 3 in our nearest surroundings, decreases said quality at the same time increasing costs of living.

⁹ Yixing Zhou & Laurence J. C. Ma. Economic restructuring and suburbanization in China, 2000, *Urban Geography*, 21:3, 205-236

¹⁰ Core city- a city most often the province or county capital around which a circle of suburban areas is created („bedroom”)

¹¹ Center for Public Opinion Research, 2012

3. Environment

Many decisions about choosing our place of residence are made with the conviction that the natural environment is in a better condition in suburban areas. However, these are only appearances, which do not have much in common with the actual situation. The phenomena of suburbanization is a car-dependent phenomena which means it has a negative impact on the natural environment. Compact cities generate much less carbon dioxide created by transport than suburbs. Approximately 30% of nitric oxide emissions and 30% of carbon monoxide emissions are a result of car traffic. That is why suburbanization contributes to air pollution. In addition, there are permanent changes to spatial landscape due to suburbanization.

4. Health

As far as health is concerned suburbanization contributes to a non-hygienic lifestyle. We become used to cars, without which we are unable to carry out our daily duties such as shopping, doctor visits, taking children to school. Cars result in people not walking and basically treating their automobile as something that is a necessity without which they cannot function. At the same time, they want to drive up “right to the doorstep” to avoid any kind of walking.

Another aspect connected with health is access to health care. In suburban areas access to a doctor is generally more difficult due to greater distances. Primary care physicians generally have their offices in suburban areas. However, when it comes to specialist care our possibilities are greatly diminished, as it is generally located solely in the “core” cities. The same goes for hospitals. Therefore, taking into account access to health care, quality of life worsens significantly as people move to suburban areas.

5. Access to emergency services

The readiness of emergency services is another element, which for example, due to lower population density and the „spread” of areas contributes to the lowering of the life quality of residents. The commute of emergency medical services to suburban areas is longer than in the city. According to the Act on Public Emergency Services the median commute time – on a monthly basis – is no greater than 8 minutes in a city with over 10 thousand inhabitants and 15 minutes outside a city with over 10 thousand inhabitants.¹²

6. Access to public space

As studies have shown new residents do not use such spaces, even if they are available. However, the spaces in which residents do show interest require (similarly to work and school) driving. Access to other areas e.g. those connected with physical activities in suburban areas in Poland has a decisive impact on the decrease of life quality in these areas in comparison with city inhabitants.

7. Feeling of being rooted in the local community, interpersonal relations and participation in the life of a given community

In the process of suburbanization, it is customary to treat residences as places for sleeping or perhaps those used for weekend relaxation. Residents find it hard to become rooted in the local community.

New inhabitants moving into small towns and villages, at the same time contribute to the total annihilation of their old structures. Most of the inhabitants do not know one another, they do not get involved in the life of the local community, their lives are mainly focused on home-work (school) – home commutes and they simply do not have time to establish and develop neighborly relations.

¹² Act from 8 September 2006 on Public Emergency Services

8. Access to public transport and walking access

When we are talking about the intelligent development of cities, about the development of space in the human scale, accessible on foot, one that does not overburden, a key element of such space is public transport. It is due to public transport that space can be recovered to be used by people. However, under Polish conditions living in suburban areas is equivalent with the necessity to use our own cars in order to ensure transport to work, school and to ensure all other kinds of services (even basic ones). Transport in suburban areas is badly organized and unattractive for the user. Agglomerations are slowly trying to implement changes, however in this case such steps are inadequate.¹³

As studies have shown the phenomenon of suburbanization has not only numerous economic consequences but psychological ones as well. Suburbanization causes the loss and permanent change of landscape and brings about significant costs, which are incurred both by the society as well as public administration. People who decide to live in suburban areas rarely make this decision based on in-depth analysis of results of such a move, founded on a multi-dimensional analysis of potential gains and losses, both in the economic dimension as well as the social one. Most of them decide, based on the criterion of price of real estate alone. However, in case of suburban zones making decisions solely taking into account initial costs of purchase is burdened with a significant risk. Living in suburban zones generates significantly higher costs of transport, each household requires two or more cars to function “normally”, without which life seems virtually impossible. A car becomes a necessary attribute of functioning in the suburbs, thanks to which people can get to work, take children to school and take care of their basic needs, such as shopping and visits to the doctor. However, the aspect of costs connected with suburbanization is only a single aspect of this phenomenon.

Suburbanization has a negative influence on the experienced and real level of quality of life, which unfortunately (at least under Polish conditions) is relatively much lower in comparison with the quality of life in well-managed cities. Settlements in villages made up of people who are not employed in agriculture or gardening and who work and fulfill their basic needs in the city, unfortunately do not provide peace and quiet and the possibility to rest close to nature, since these aspects are suppressed by the unfavorable limits in access to fulfilling basic needs, including substandard public infrastructure. Inhabitants of these areas are often forced to live with limitations to basic infrastructure elements such as: lack of sidewalks, lack of hard-surface access roads, low-level technical infrastructure, lack of sewage systems, lack of social infrastructure, lack of decent public space enabling them to spend free time. These limits result in a more difficult access to numerous services and places which are a norm for inhabitants of cities. Despite all that, subsequent generations of Poles make the decision to settle down in the suburbs, driven mainly by dreams of their own house with a garden and the price of purchasing a property. Unfortunately, costs connected with suburbanization are incurred not only by people deciding to live in those areas, such costs are incurred by society as a whole through increased public expenditures, which are rarely balanced out by increased income.

¹³ A. Ostenda, M. Fojud, M. Błaszczak, *Ekonomiczne i psychologiczne aspekty rozlewania się miast*, (The Economic and Psychological Aspects of City Spread) Katowice School of Technology, Katowice 2016, pp. 26 – 36

3. CONCLUSION

The conducted research and source material studies unanimously point out the necessity (especially under Polish conditions) to carry out a system-wide approach to suburbanization and for the local government to influence it through responsible public management in this area, which is particularly important in a wider context when we take into account total economic, psychological and social costs incurred by the society as a whole which are a consequence of the spread of Polish cities regardless of their size.

REFERENCES

- Act on from 8 September 2006 on Public Emergency Services.
- Borys T., Rogala P. (red.), *Jakość życia na poziomie lokalnym – ujęcie wskaźnikowe* (Quality of Life on a Local Level – Indicator Approach), UNDP, Warsaw 2008 pp.13-14.
- Center for Public Opinion Research, 2012.
- Encyklopedia architektury. https://archirama.muratorplus.pl/encyklopedia-architektury/suburbanizacja,62_4357.html
- Izdebski H.: *Ideologia i zagospodarowanie przestrzeni* (Ideology and Management of Space). Warsaw: Wolters Kluwert Polska, 2013, p. 78.
- Majer A.: *Socjologia i przestrzeń miejska* (Sociology and Urban Space). Warsaw: PWN, 2010, p.209
- Ostenda A., Fojud M., Błaszczak M., *Ekonomiczne i psychologiczne aspekty rozlewania się miast* (The Economic and Psychological Aspects of City Spread), *Katowice School of Technology*, Katowice 2016, pp. 26 – 36
- Rogala P., *Zaprojektowanie i przetestowanie systemu mierzenia jakości życia w gminach* (Designing and Testing the System of Evaluation of Quality of Life in Municipalities) University of Economics in Wrocław, Department in Jelenia Góra, Jelenia Góra – Poznań 2009, p. 7.
- The core-city – a province or county capital around which a circle of suburban areas („bed-rooms) is created
- Yixing Zhou & Laurence J. C. Ma. Economic restructuring and suburbanization in China, 2000, *Urban Geography*, 21:3, 205-236, DOI: 10.2747/0272-3638.21.3.205

WHAT DRIVES THE BELIEFS IN BITCOIN? – SURVEY RESULTS

Zuzana Rakovská¹ 

DOI:

Abstract: *This paper examines the factors that affect the sentiment towards bitcoin of the given population - their beliefs about the future development of investors' interest in bitcoin in two weeks, one month, and one-quarter period ahead. To do so, it employs data from a unique longitudinal survey, which was conducted in six waves during the period from September to December 2018 on a balanced sample of 141 university students. The variety of factors are considered in the study, such as the collection of socio-demographic factors, expectations about dynamics of popular currency pairs, the degree of financial knowledge, respondents overconfidence or the technology acceptance factor. Using the ordered probit for panel data, this study found the support for the above mentioned factors at least in the one studied horizon. Moreover, it was shown that respondents evaluate also the past returns of Bitcoin when shaping their beliefs.*

Keywords: *Sentiment, Cryptocurrencies, Economic Expectations, Longitudinal Survey.*

1. INTRODUCTION

Bitcoin, the most popular cryptocurrency, has been gaining increased attention since at least 2011 when it experienced the first abnormal profits. In the following years, its price rocketed even further, and many authors started to ask the question of what factors drove such extreme dynamics. Compared to fiat currencies, bitcoin is not traded by large, sophisticated institutions/investors, and its value is not connected to the performance of a single country or to the political changes. Therefore, the answer could not be found in traditional economic or financial theories. One of the possible explanations could be linked to the behavioral concept of sentiment - the aggregate of population beliefs and emotions that are not justified by fundamental news. Even though the literature about the effects of sentiment on cryptocurrencies has been established already (Kristoufek, 2013, 2015; Bukovina & Marticek, 2016; Mai et al., 2017; Kim et al., 2017), little is known about drivers of population beliefs towards these crypto assets.

There are some studies that employed survey data to examine various factors that affect ownership and purchase intention (Stix, 2019) or the adoption and usage (Nicholls, 2017; Henry, 2018) of cryptocurrencies, but those studies did not consider respondents expectations or beliefs about those assessed. Schuh & Shy (2016) used the data from a question in Survey of Consumer Payment Choice from year 2015, which asked the respondents about the qualitative perceptions about future development of Bitcoin prices. Authors calculated the qualitative forecast errors out of those observations and analyzed their effects on the awareness, adoption and use of Bitcoin (and other cryptocurrencies). They suggested that respondents are not likely to correctly assess the future Bitcoin price in short periods.

The aim of this paper is to examine in panel settings the various factors that affect beliefs in the most popular cryptocurrency – Bitcoin. As suggested in the above mentioned studies, the aggregate level of beliefs in Bitcoin, or in other words – the sentiment towards Bitcoin, is the

¹ Masaryk University, Faculty of Economics and Administration, Lipova 41a, 602 00 Brno, Czech Republic

powerful determinant of future price of this cryptocurrency. Understanding what components affect the aggregate sentiment on micro-level and what is the direction of this relation is hence an important task.

2. BITCOIN SURVEY, DATA AND DESCRIPTIVE STATISTICS

This study employs the balanced panel data from online longitudinal survey which was conducted in six waves (on bi-weekly basis) during the period from September 2018 to December 2018. The sample of respondents consists of all 141 students from the Faculty of Economics and Administration, Masaryk University, who were enrolled in the course Financial Markets in the winter semester of 2018/2019². Each wave lasted for five days (Monday - Friday) during which the students were able to respond. Figure 1 shows the dynamics of Bitcoin price (in US dollars) and the periods of individual waves.

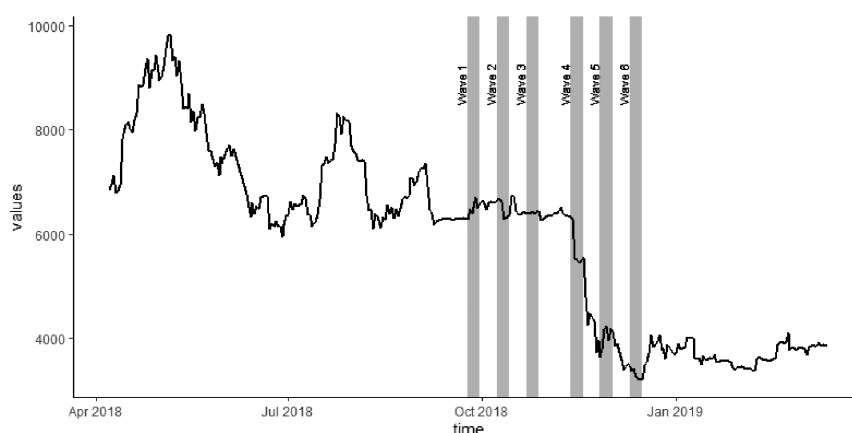


Figure 1. Bitcoin price (in US dollars) and the Survey Waves

Source: <https://www.coindesk.com/>

Survey was built in such a way that the completion of all its six waves, was the necessary condition for receiving the grade from the Financial Markets course. Therefore, each student had to respond to all six surveys before he or she was allowed to enter the final exam. In order to offset the unwilling effects of this mandatory approach, such as the tendencies of students to respond inaccurately or falsely to questions simply because the act of responding is what matters and not the content of the answers itself, each surveys included a contest scheme which yielded additional points for the “winning” students. In particular, each wave contained one or two guessing questions about the future exchange rate (price in US dollars) of Bitcoin in two weeks or in one month time and ten students with the most accurate guess for each of those guessing questions were rewarded by two points. Hence, the total of 16 additional points could have been received by any student. Because the minimum score for the students to pass the exam was 60, it could be hypothesized that this reward scheme increased the overall quality of the survey responses compared to the situation without such incentives. The socio-demographic characteristics of respondents (see Table 1) suggest that the analysis might suffer from the sample selection bias – all the respondents are young students of economic programs. Nevertheless, such a population could be considered to be the next generation of bankers, investors or accountants who will in turn shape the perceptions of community about financial innovations as a whole. Therefore, despite the relatively small and homogenous sample, this study could provide useful results that might indicate some interesting statistical relations.

² The syllabus of the course is available on https://is.muni.cz/predmet/econ/podzim2018/BPF_FITR?lang=en.

Table 1. Socio-Demographic Characteristics of Respondents

| | Number | % | | Number | % |
|------------------------|--------|----|-------------------------|--------|----|
| Gender | | | Age | | |
| <i>Male</i> | 68 | 48 | < 25 | 136 | 96 |
| <i>Female</i> | 73 | 52 | >= 25 | 5 | 4 |
| Nationality | | | Study Programmes | | |
| <i>Czech or Slovak</i> | 139 | 99 | <i>only econ.</i> | 114 | 81 |
| <i>Other</i> | 2 | 1 | <i>econ. and other</i> | 27 | 19 |

Source: author

The main focus of the survey was respondents' sentiment towards Bitcoin as well as the overall awareness and usage of cryptocurrencies. Each wave contained two sets of questions. The first set, "longitudinal" questions, appeared in all the waves (or in the first wave and then in every second wave) and asked survey participants about their beliefs/expectations of the future development of Bitcoin exchange rate, as well as other national exchange rates or real estate prices. The reason for repeating the same questions in each wave was the fact, that the sentiment (optimistic/pessimistic beliefs about something) is not constant in time, therefore, by capturing its dynamics across individual waves, it is possible to examine what factors stand behind its high, low or unchanged value. The second set, "cross-sectional" questions, was aimed on respondents' socio-demographic characteristics or other characteristics related to cryptocurrencies that are time-invariant and therefore, it was unique for the given wave. This study employs only the part of the results from both sets and hence, represents the pioneering work, which utilizes the data from this longitudinal survey.

As discussed in the Introduction, the aim of this paper is to examine the various factors that drive population's beliefs about Bitcoin. As a measure of respondent's beliefs, the dependent variable, we used the results for the longitudinal question which appeared in all the survey waves and asked respondents the following: "*How do you see investors' interest in Bitcoin in the horizon of two weeks/one month/one quarter?*". There were five possible answers to this question: (1) *substantial decline*, (2) *decline*, (3) *no change*, (4) *increase*, and (5) *substantial increase*. It can be hypothesized that the respondent who believes in cryptocurrencies and expects increase in its demand would answer by either (4) *increase* or (5) *substantial increase*. Similarly, a person who is pessimistic about Bitcoin would most probably choose one of the first two answers. Note, that results for this question are available in three versions – horizons. Question about the two-week horizon was asked in all six waves, while the one-month and one-quarter horizon questions appeared only in the first, third and fifth wave. Figure 2 depicts histograms for those three dependent variables. It can be seen that respondents strictly prefer the middle three categories - *increase*, *no change* and *decline*, to the upper and lower extreme categories in the first two considered horizons, while the *no change* responses in the horizon of one quarter reaches the same degree of preference as the extreme answers do. This might suggest that respondents do not expect extreme movements in the investors' interest towards Bitcoin in shorter periods. However, when one considers longer horizons, respondents seem to shift their neutral views to more polarized beliefs. Another interesting aspect is that the amount of pessimistic answers (*decline*) increases across waves. An explanation might be found in Figure 1, which shows that the price of Bitcoin in US dollars rapidly decreased during the survey period, which in turn, might have induced the spread of negative "sentiment".

Table 2 lists the explanatory variables (factors) that are used in this study together with their short characteristics and type of the question from which they were constructed. Variable *fintest* and *overconf* were constructed as the first principal component of the several cross-sectional questions. There are two reasons for applying the principal component analysis (PCA). Firstly,

by employing only one variable instead of four or five, the amount of controls in the regression is reduced; which has in turn positive effects on the estimation properties. Secondly, both financial literacy and over confidence, are latent concepts that could not be directly measured. By observing several manifestations of those behaviors via several well-aimed questions and then by capturing only the common component, construction of more representative measure was available of either financial literacy or overconfidence.

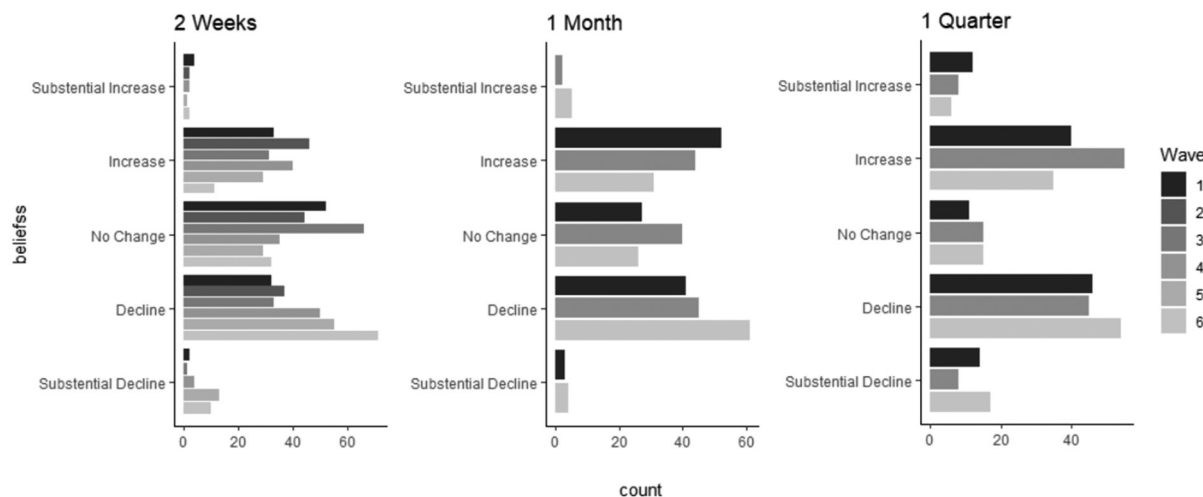


Figure 2. Histogram of Bitcoin price (in US dollars) and the Survey Waves

Source: author

Table 2. Description of Explanatory Variables

| Variable Name | Survey Question | Type | Characteristics |
|------------------------|-----------------------------|------|--|
| <i>male</i> | <i>What is your gender?</i> | CS | Dummy: 1 if male, 0 if female |
| <i>other_than_econ</i> | - | CS | Dummy: 1 if the student studies other programme besides the economics and 0 otherwise |
| <i>fintest</i> | - | CS | index of financial literacy which was created as the first principal component of four dummy variables ³ (1 if the student responded to the financial question correctly and 0 otherwise) |
| <i>overconf</i> | - | CS | index of overconfidence which was created as the first principal component of five dummy variables ⁴ (1 if the student exhibited overconfidence and 0 otherwise) |
| <i>pref_crypto_all</i> | - | CS | Dummy: 1 if the student answered at least once that he/she prefers the investment in cryptocurrencies to other financial and real assets, and 0 otherwise |

³ The first question was aimed at the overall understanding of field of finance (interest rates, inflation, risks), the second question focused on returns in the financial market and the third and fourth questions asked students about the exchange rates.

⁴ Two dummies were created by evaluating students over confidence when answering the question whether they think they would receive the points from the given survey. Two dummies were constructed as the indication of students' over confidence in receiving the concrete grade from the Financial Markets course (the question was asked firstly in the second wave and then in the sixth wave). The last dummy was built from the students' assessment of the overall ability to obtain more points in total than others.

| Variable Name | Survey Question | Type | Characteristics |
|--|--|------|---|
| late_majority, early_majority, early_adopter, technology_ enthusiast | <i>In relation to the adoption of new technologies, I would describe myself as: laggard, late majority, early majority, early adopter or technology enthusiast?</i> ⁵ | CS | Dummy: 1 if the respondent marks the given category and 0 otherwise (base category is laggard) |
| czkeur_neg_2w | <i>How do you expect the exchange rate of the Czech crown (CZK) to the euro (EUR) to develop in the horizon o 2 weeks?</i> | L | Dummy: 1 if the respondent expects decline and 0 otherwise |
| eurusd_neg_2w | <i>How do you expect the exchange rate of the euro (EUR) to the US dollar (USD) to develop in the horizon o 2 weeks?</i> | L | Dummy: 1 if the respondent expects decline and 0 otherwise |
| realest_neq_1q | <i>In your opinion, how will real estate prices in the Czech Republic evolve within one quarter?</i> | L | Dummy: 1 if the respondent expects decline and 0 otherwise |
| btcret_14d | - | - | average returns of Bitcoin price in USD over last 14 days that directly preceded the day when the respondent completed the survey (returns are calculated as simple returns in percent) |

Note: CS – cross-sectional type of question, L – longitudinal type of question

Source: author

2. DRIVERS OF BELIEFS IN BITCOIN - RESULTS

In order to assess the effects of selected explanatory variables on the panel of respondents' beliefs in Bitcoin, it was decided to use ordered probit model for panel data⁶. The choice of model follows the nature of the dependent variable which is in its sense represented by ordered choice between (1) *substantial decline* and (5) *substantial increase*. The description of the model could be found for example in Greene (2012, p. 787), who also states that one needs to be very careful in interpreting the coefficients of this model because the standard interpretation known from OLS models does not apply. The most practical way of interpreting the results is by so called predicted probabilities when the predictor is set to a concrete value and the rest of the variables are in their mean values.

Table 3 reports the estimated coefficients from running three regressions, one for each dependent variable: Bitcoin beliefs in 2-week horizon (*btctrend_2w*), 1-month horizon (*btctrend_1m*) and 1-quarter horizon (*btctrend_1q*). The table lists also the cutpoints (*Cut1* to *Cut4*) on the latent variable that are used to differentiate extreme pessimism from pessimism (*Cut1*), then the pessimism from neutrality (*Cut2*) and so on when values of the predictor variables are evaluated at zero. No measure of R-squared is available after running the ordered probit for panel data, but the value of likelihood ratio chi-square statistics for all the three specifications suggest that the models as a whole are statistically significant, as compared to the null model with no predictors.

⁵ Innovators are characterized by a high level of willingness to invest in new technologies, test and share their experience with other similarly focused people or groups. *Early adopters* differ from innovators by being more cautious about news, but they are one of the first people to adopt new technology and influence others with their opinions. *Early majority* fully embraces innovative technologies after a longer period of time (later than the previous two groups) and he/she rarely affects others. *Late majority* is someone who is conservative and is characterized by a great deal of caution. By adopting technology, late majority is trying to keep up with groups that have already adopted them. *Laggard* is defined as someone who accept innovative technologies at a time when they are already commonplace.

⁶ *xtpoprobit* command in Stata was used to process the estimation.

From the results in Table 3, it can be concluded that the variety of significant factors that impact beliefs in Bitcoin differ for the three horizons. Not surprisingly, the average past returns of Bitcoin represent a significant driver of respondents' expectations, which means that respondents evaluate the historical evolution of this crypto-currency when shaping the beliefs. Students' assessment of the future dynamics of exchange rates (*czkeur_neg_2w* and *eurusd_neg_2w*) as well as their expectations about the future prices of real estate in the Czech Republic (*realest_neg_1q*) turned to be significant drivers as well; however, the effect is not maintained in all three specifications.

Table 3. Ordered Probit for Panel Data – Estimated Coefficients

| | (1) btctrend_2w | | (2) btctrend_1m | | (3) btctrend_1q | |
|------------------------------|--------------------|----------|--------------------|----------|--------------------|----------|
| Explanatory Var. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| <i>male</i> | -0.131 | (0.107) | -0.465*** | (0.161) | -0.472*** | (0.161) |
| <i>other_than_econ</i> | -0.217* | (0.126) | -0.0147 | (0.189) | 0.174 | (0.188) |
| <i>finlit</i> | 0.220** | (0.101) | 0.380** | (0.151) | -0.0798 | (0.150) |
| <i>overconf</i> | 0.0530 | (0.0526) | 0.168** | (0.0787) | 0.0720 | (0.0779) |
| <i>pref_crypto_all</i> | 0.218* | (0.123) | 0.331* | (0.183) | 0.218 | (0.182) |
| <i>late_majority</i> | 0.248 | (0.321) | 0.554 | (0.485) | -0.0483 | (0.478) |
| <i>early_majority</i> | 0.285 | (0.297) | 0.588 | (0.449) | 0.0292 | (0.442) |
| <i>early_adopter</i> | 0.367 | (0.314) | 0.678 | (0.474) | 0.319 | (0.468) |
| <i>technology_enthusiast</i> | 0.398 | (0.456) | 1.265* | (0.712) | 0.166 | (0.702) |
| <i>czkeur_neg_2w</i> | -0.0781 | (0.101) | 0.0713 | (0.166) | -0.130 | (0.160) |
| <i>eurusd_neg_2w</i> | -0.249*** | (0.0950) | -0.274* | (0.145) | -0.194 | (0.141) |
| <i>realest_neg_1q</i> | -0.348** | (0.140) | -0.358 | (0.228) | -0.470** | (0.224) |
| <i>btcret_14d</i> | 0.255*** | (0.0421) | 0.112** | (0.0494) | 0.0960** | (0.0478) |
| <i>Cut1</i> | -1.791*** | (0.334) | -1.878*** | (0.509) | -1.686*** | (0.490) |
| <i>Cut2</i> | -0.0900 | (0.323) | 0.347 | (0.489) | -0.209 | (0.483) |
| <i>Cut3</i> | 0.898*** | (0.324) | 1.101** | (0.491) | 0.116 | (0.483) |
| <i>Cut4</i> | 2.603*** | (0.350) | 3.155*** | (0.535) | 1.603*** | (0.493) |
| <i>N</i> | 767 | | 381 | | 381 | |
| <i>chi2</i> | 65.36 | | 33.40 | | 23.98 | |

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: author's calculations in Stata

Table 4: Predicted Probabilities for *finlit*

| Outcome of <i>btctrend_2w</i> | Pred. Prob. for <i>finlit</i> = 0 | Pred. Prob. for <i>finlit</i> = 1 |
|---------------------------------|-----------------------------------|-----------------------------------|
| <i>Substantial decline (1)</i> | 0.039 | 0.024 |
| <i>Decline (2)</i> | 0.399 | 0.334 |
| <i>No change (3)</i> | 0.343 | 0.358 |
| <i>Increase (4)</i> | 0.210 | 0.270 |
| <i>Substantial increase (5)</i> | 0.008 | 0.015 |

Source: author's calculation using Stata

Table 4 lists the calculated predicted probabilities for one interesting relation found in the first model specification: the effect of *finlit* on *btctrend_2w*. The rest of the predicted probabilities are not reported due to paper-size limitations. For example, the probability of respondents having optimistic beliefs (*Increase (4)*) when the financial literacy score is equal to 1 (all the financial questions were answered correctly) and the rest of the variables are at their means is 27%. Interestingly, the middle three options seems to have similar probability for both extreme *finlit* values (*finlit* = 1 and *finlit* = 0) which corresponds to the way how the responses are structured as demonstrated in Figure 1. Nevertheless, the further examination of the effects is left for the future research.

3. CONCLUSION

This paper examined the factors, both time-variant and time-invariant, that affect overall beliefs about the most popular cryptocurrency – Bitcoin. The data from the unique longitudinal survey were employed and the survey was conducted on the sample of university students in six waves during the last four months of 2018. Respondents' beliefs were measured by ordered-choice variable which manifests the expectation about the dynamics of the investors' interest in Bitcoin. Such a variable could be viewed as a direct measure of sentiment – if the survey participant is optimistic (pessimistic) about the future development of Bitcoin, he/she would probably respond that they expect substantial increase or increase (substantial decline or decline) in investors' demand for Bitcoin.

The results of the ordered probit model for panel data showed that respondents evaluate not only the past returns of Bitcoin when shaping their beliefs but also, the way how they expect the development of the exchange rates of national currencies matters. Several factors have significant effects on Bitcoin beliefs from which the most interesting are financial literacy, degree of preference of Bitcoin to other assets or the respondents' overconfidence. This study represents the first application of the unique panel dataset that results from the subject longitudinal survey and pioneer attempt to analyze the drivers of Bitcoin beliefs of individuals in the Czech Republic environment.

ACKNOWLEDGMENT

The support from Masaryk University under project MUNI/A/1028/2018 is gratefully acknowledged.

REFERENCES

- Bukovina, J., & Martiček, M. (2016). Sentiment and bitcoin volatility (No. 2016-58). Mendel University in Brno, Faculty of Business and Economics.
- Greene, W. (2012). H.(2012): Econometric Analysis.
- Henry, C. S., Huynh, K. P., & Nicholls, G. (2018). Bitcoin awareness and usage in Canada. *Journal of Digital Banking*, 2(4), 311-337.
- Kim, Y. B., Lee, J., Park, N., Choo, J., Kim, J. H., & Kim, C. H. (2017). When Bitcoin encounters information in an online forum: Using text mining to analyse user opinions and predict value fluctuation. *PloS one*, 12(5), e0177630.
- Kristoufek, L. (2013). BitCoin meets Google Trends and Wikipedia: Quantifying the relationship between phenomena of the Internet era. *Scientific reports*, 3, 3415.
- Kristoufek, L. (2015). What are the main drivers of the Bitcoin price? Evidence from wavelet coherence analysis. *PloS one*, 10(4), e0123923.
- Mai, F., Shan, Z., Bai, Q., Wang, X., & Chiang, R. H. (2018). How does social media impact Bitcoin value? A test of the silent majority hypothesis. *Journal of Management Information Systems*, 35(1), 19-52.
- Nicholls, G. (2017, September). Bitcoin awareness and usage in Canada. In *Canadian Stata Users' Group Meetings 2017* (No. 08). Stata Users Group.
- Schuh, S., & Shy, O. (2016). US consumers' adoption and use of Bitcoin and other virtual currencies. In *DeNederlandsche bank*, Conference entitled "Retail payments: mapping out the road ahead.
- Stix, H. (2019). Ownership and purchase intention of crypto-assets—survey results (No. 226).

HEALTH MANAGEMENT IN THE 21ST CENTRY

Zdravko Petković¹

Zdravka Petković²

Tijana Milanović³

DOI:

Abstract: *An integrated management system is a comprehensive management tool that integrates all elements of the business system into a single system, that is, to manage the processes in the organization, all to meet the requirements of stakeholders and achieve business goals. In the field of health, the management system also presents a wide range of activities and knowledge that must be taken to provide the highest quality health services. Management quality is a complex process, especially in the field of healthcare. In today's environment, managers need more than just understanding the concepts of quality as well as how management is managed. They need to understand how to achieve quality in the structure and relationships of a complex healthcare organization system. The challenges of managing the health system itself, are at increasing costs, both for performing operational activities and for constantly investing in the acquisition of different knowledge of health care data through subsequent operational use of the knowledge acquired, to obtain a set of strategic rules for health decision support that can influence strategic decision making, planning and management of healthcare organizations.*

Keywords: *Management, Health, Management in Health, Health Organization, Ethics.*

1. INTRODUCTION

Managing and steadily placing management within healthcare is a major challenge for all countries, especially in the 21st century. The concept of healthcare management includes the roles, functions and responsibilities of the healthcare manager. These aspects are the focus of many organizations as well as healthcare institutions as healthcare is a diverse field with increasing opportunities. Management issues in health research provide an optimistic message: improving management practices is a way to increase quality and productivity [3]. Therefore, adopting better governance practices within health care could be a key part of addressing the various challenges in the 21st century. The fact is that people's general health and well-being are health management programs, which are often not optimally managed, and the reason is not only technical incompetence but also the results of inadequate management expertise.

Health professionals are often required and implied to have a significant amount of responsibility in management, that is, to have a managerial role in some way, and to connect their role as a health worker through good practice, with effective health management. Healthcare training should be restructured to include a new set of core competencies (knowledge, skills, abilities, personal qualities, experience or other characteristics) - new „tricks” that prepare 21st century healthcare professionals to manage today's most common health problems. The overall purpose of this paper relates to the analysis of health management in the context of the roles, responsibilities and functions involved in health management.

¹ Clinical Centre Belgrade, Serbia

² Academy of Business Professional Studies in Belgrade, Kraljice Marije no. 73, Belgrade, Serbia

³ Academy of Business Professional Studies in Belgrade, Kraljice Marije no. 73, Belgrade, Serbia

2. THE CONCEPT OF HEALTH MANAGEMENT SYSTEM

Improving population health is a challenge that all countries in both, developed and developing, countries face. As healthcare has become more complex and specialized, a parallel has emerged between health professionals and health care executives. While public health professionals generally look beyond the organization, that is, to society and the health needs of the population, health care managers, on the other hand, tend to focus on the interior of the organization and especially on the financially demanding sectors of secondary and tertiary care. In these sectors that inevitably absorb the time and effort of managers and on the basis of which their performance is evaluated [8].

One definition of management is that „management refers to the efficient use of resources and enables people to work together to achieve specific goals” [6]. However, due to the specific nature of the health care system, especially as it, along with other sectors, work with specialized staff with patients to improve the quality of living and working conditions, it is not easy to define healthcare management. After many attempts to define health management, the most commonly used definition has emerged, which reads: *Health management can be the sum of all measures taken to plan, organize, implement and evaluate many elements related to health care system* [15]. These measures are necessary to translate health policies into strategies, further translate strategies into plans, plans into actions, and actions into decision-making on the implementation of health programs and to enable health infrastructure to be developed, in such a way as to ensure effective and efficient implementation health program [15]. Health management manages the overall management of a healthcare facility, such as clinic or hospital. The healthcare manager is responsible for ensuring that the healthcare facility functions as it should in terms of the institution’s budget, goals, and community needs [5].

The person in charge of health care management also collaborates with medical staff executives on issues such as medical equipment, budgets, planning ways to ensure the facility meets its goals, and maintains good relationships with physicians, nurses, and all department heads. The health care manager also makes decisions about performance appraisal, staff expectations, budgeting, social media updates, and billing [5]. Working in healthcare can be very rewarding; especially when a person plays a role in helping others feel better. Health care management may not be directly related to patient care, but patient care is only effective when there is a healthcare facility management team. [5]

3. KEY AREAS OF HEALTH MANAGEMENT IN THE 21ST CENTURY

Across Europe, health policy decisions are increasingly influenced or accepted by those with managerial responsibilities and professional management skills. The situation in public health is different. In healthcare, roles within managerial responsibilities cannot be excluded. They cannot afford to ignore or exclude an obligation if they want to make an impact by providing a multifaceted strategy for improving health without becoming preoccupied with any of its health components. Health system managers need to broaden their horizons in terms of the public health perspective that it has to offer, and public health professionals, regardless of disciplinary background, should accept management as a necessary skill. [14]

Health management is considered as an important area of public health skills and as such, it covers three key areas of health management: people management, planning and resource manage-

ment. By exploring these areas, the goal is achieved in terms of providing information as well as practical assistance [12]. Each of these areas is in itself a large area of study, and accordingly, three vital topics are highlighted [12]: the importance of people, the importance of planning, and the importance of systems. As primary care systems become more complex, more complex forms of management become necessary. At the same time, patients' and policy makers' concerns about quality of care have fueled the development of quality improvement policies [1].

4. CHARACTERISTICS OF HEALTH MANAGEMENT

Health management differs from general management in several important features. It should be noted that the health system in particular is different from other systems. The main objective of the health system is to work with other systems and sectors to promote health development and better human health [13]. It is staffed by healthcare professionals and its primary goal is not to make profit, but also to improve the quality of service provided to sick people. Health management is an organized system of agreed rules, functions and tasks, implemented by responsible and organized individuals at different levels of health care, all with the aim of improving human health [13].

Health care management basically means to satisfy and balance the interests of all participants in the healthcare system, that is, in the healthcare organization. This applies to: clients - patients, workers, institution and environment, the community in which the organization itself is located. However, it can be said that the management of health system and health institutions, did not fully follow or accept the ideas, all principles and theories, which were developed during the XIX and XX centuries. This difference is a consequence of the specificity of the health system in relation to classic large corporations and commercial enterprises [11].

Among the features in the development of the health care system, the most significant are [11]:

- • The health system did not have its „industrial revolution”.
- • Significant medical discoveries began to occur only at the end of the 19th and beginning of the 20th centuries.
- • This system became a significant subsystem of the social system only after the First World War, and especially after the Second World War (40s and 50s).
- • At the beginning of its development, the health care system was neither complicated nor complex.
- • He was not adaptable to management development, due to his predominantly social rather than commercial value.
- • The health system today is one of the complicated “subsystems” that has evolved over the decades with the contributions of people, science, beliefs, commercial factors and other social forces, but usually and most often without detailed study and systematic planning.

Generally speaking, the health system must be one coherent whole, consisting of many interconnected parts, components (sectoral and intersectoral), as well as the community itself. It must be created so that all its parts work together and adapt to each other, all through communication and division of labor. Evaluation of the health process and program is part of the process of managing health development. In fact, the complexity of healthcare systems cannot be solved by one profession. Better management is a long-term strategy that is considered a long-term and constant process for improving the quality of healthcare and improving organizational processes [4].

5. HEALTH MANAGEMENT QUALITY IN 21ST CENTURY

Today, many point out that quality is a key success factor in the global market and, as such, is proportional to the satisfaction of users of certain products or services. The successful business of every company or organization cannot be imagined without an adequate quality system. Depending on the degree of social development, quality has always been more or less concerned [9]. Health care quality is a multidimensional and multilayered concept intertwined with value parameters about what constitutes good quality [2]. Quality management in a healthcare facility should be addressed by staff, in addition to their core profession. If quality management is limited to only one organizational unit or one person in an institution, it cannot be presented as quality management, because all healthcare professionals must be involved in the process and implemented through all activities. Given that quality is emerging as a novelty in healthcare settings, it is desirable to define a description of tasks and responsibilities for all levels of management, as well as to provide appropriate training to managers in quality management [7].

According to the World Health Organization (WHO) [14] high hospital performance is dependent on the professional management provided by competent teams covering a wide range of skills. The scope and content of hospital management, financial management and various forms of administrative functions depend on the context and country [14]. Human resource workload indicators are one of the parameters, which provide healthcare managers with a wide range of options, how to systematically make personnel decisions, in order to further manage their valuable human resources [14]. Quality hospital services are efficient and human-centered. Related to this, health services should be timely, equitable, integrated and efficient. Hospitals are reorganizing processes and refocusing their logistical efforts to make care affordable, acceptable and continuous from a patient perspective. High quality care also means that people are informed and empowered to make decisions regarding their own healthcare [10]. Improving the quality of services provided in hospitals can potentially improve the operation of hospitals and increase customer demand from users, as well as improve patients' overall confidence in healthcare facilities.

Quality management wants to improve treatment efficiency and increase patient satisfaction with the service. Care quality is an important factor that increases patient's satisfaction. Good quality care is also one of the essential parameters that is critical to achieving the Millennium Development Goals [10]. However, quality is differently seen across communities. There is much to be done to improve quality in health care programs. Health care managers need a thorough understanding of not only the concepts but also the practical ways to improve the quality of care within healthcare settings. [10].

6. CONCLUSION

Health is probably the highest priority for most citizens in a country. There is no doubt that health management has influenced the development and improvement of the health system, its organized, efficient and effective operation. At first, its impact was not particularly large, but as the health system became more complex and complicated, so did the importance of management within management. The degree of health care provision in each health care facility depends on the level of management professionalism provided.

Health care management is very important, so functionalities, roles and responsibilities are only effective if adhered to by health care management. Today, when the health care system is quite

complex, especially in the developed countries of the world, when it is necessary for society for its social and economic development, when it is increasingly complicated and developed, and when a large number of highly skilled personnel work in it, it cannot be managed. It must not be neglected or implemented in any way without a clear concept of the development of appropriate principles and good management, especially in the 21st century. Currently, there is a lack of leadership and management capacity is a limitation, especially in operational terms of private and public health levels. It is therefore clear that these efforts must be improved. Competencies, roles and responsibilities should be clearly defined and performance measured.

Progress requires systematic work to identify needs and effective interventions; then implement countries' overall plan for developing leadership and management capacity; and that international assistance be coherent in support of national plans. The work on recognition, promotion of health management is of great importance. By focusing attention on building professional capacities, strengthening managerial skills and abilities, as well as using positive examples and experiences, so-called best practices, especially from developed countries, the entire healthcare system is being given the opportunity to modernize and improve. The global healthcare industry is at a central position to lead the integration of social, economic, environmental, health and resource-balanced practices of the 21st century in the service of renewal and healing.

In order for the future to be better than the present, it is necessary to use various experiences, both positive and negative, in order to achieve the goals. The development of health management should be based on health development and on general development. 21st Century health management should be one of the main prerequisites for furthering the health of a country.

REFERENCES

- [1] Baker, R. (2000). *Managing quality in primary health care: the need for valid information about performance*, Quality in Health Care.
- [2] De Geyndt, W. (1995). *Managing the quality of health care in developing countries (English)*. World Bank technical paper ; no. WTP 258. Washington, D.C.: The World Bank.
- [3] Dorgan, S., Layton, D., Bloom, N., Homkes, R., Sadun, R., & Van Reenen, J. (2010). *Management in healthcare: why good practice really matters*. London: McKinsey and Company/London School of Economics.
- [4] Hartley, J., & Benington, J. (2010). *Leadership for healthcare*. Policy Press.
- [5] Healthcare Management Degree Guide (2019). *What is Healthcare Management* Available at <https://www.healthcare-management-degree.net/faq/what-is-healthcare-management/>
- [6] Parker, L. D. (1984). *Control in organizational life: the contribution of Mary Parker Follett*. Academy of Management Review, 9(4), 736-745.
- [7] Pavlović, K. (2016). *Model sistema menadžmenta kvaliteta zasnovan na teoriji kompleksnosti*, Univerzitet u Beogradu, Fakultet organizacionih nauka, Beograd.
- [8] Pruitt, S. D., & Epping-Jordan, J. E. (2005). *Preparing the 21st century global healthcare workforce*. Bmj, 330(7492), 637-639.
- [9] Savović, I. (2006) *Integrirani sistemi menadžmenta kvalitetom i bezbednost hrane integracijom procesa projektovanja razvoja*, Akcija za kvalitet i standardizaciju Srbije.
- [10] Sharma, K. (2012). *Managing quality in health care*, Institute of Health Management Research, Jaipur 302011 India.
- [11] Stoner, J., & Wanklen, C. (1986) *Management*, 3rd Edition, PHI, USA.

- [12] Venter, W., Rendall-Mkosi, K., & Alexander, L. (2011). *Health Management I Module Guide*, School of Public Health University of the Western Cape.
- [13] Wexley, K. N., & Yukl, G. A. (1984). *Organizational behavior and personnel psychology*. Richard D. Irwin.
- [14] World Health Organization – WHO (2019). *Management and Quality*. Available at: <https://www.who.int/hospitals/management-and-quality/en/>.
- [15] Zečević, M. (1994) *Menadžment*, Fakultet za internacionalni menadžment, Beograd.

THEORETICAL AND PRACTICAL CONSIDERATIONS REGARDING THE CONTESTING PROCEDURE IN THE FIELD OF PUBLIC PROCUREMENT

Diana Gorun¹

DOI:

Abstract: *In the case of the tenderers who took part in the procedure for awarding by public procurement the framework agreement for service contracts whose tender has been declared incomplete or losing, there is the possibility provided by the law to challenge the outcome of the procedure, according to the provisions of the Law no. 101/2016 on remedies and remedies in respect of the award of public procurement contracts, sectoral contracts and concession contracts for works and concessions of services, as well as for the organization and functioning of the National Council for Solving Complaints.*

Thus, the tenderers who consider themselves wronged in a law or in a legitimate interest by an act of a contracting authority or by failure to resolve an application within the legal time limit, may request the annulment of the act by obliging the contracting authority to issue an act or to adopt remedial measures, recognition of the alleged right or legitimate interest, using a administrative-judicial or a judicial way, with the purpose of declaring the offer submitted or the contestant to be winner.

The competent authority at first instance in resolving these complaints is the National Council for Solving Complaints.

Against the rulings issued by the National Council for Solving Complaints, a complaint may be filed, the resolution of which is within the competence of the Administrative and Fiscal Appeal Section of the Court of Appeal in whose territorial jurisdiction the headquarters of the contracting authority is located, according to the provisions of art. 32 par. 1 of the Law no. 101/2016, the decision of the Court of Appeal being final.

Keywords: *Offer, Award Procedure, Contestation, Right, Legitimate Interest, National Council for Solving Complaints.*

1. PRESENTING THE CASES

In the first presented case, the appellant S.C. CVT SRL filed an appeal against the act (decision) by which, following the re-evaluation of the offers by the evaluation commission of the contracting authority, the Academy of Economic Studies of Bucharest, it was ordered to restart the final phase of electronic auction in SEAP, having as service object for promotion for projects funded from non-reimbursable community funds, national scientific research projects, organizational structures of ASE Bucharest, COD CPV

It was requested that by the decision that will be pronounced the cancellation of the contested act would be canceled as unlawful and illegal and consequently the winning declaration of the offer submitted by S.C. CVT SRL, as well as obliging the contracting authority the Academy of Economic Studies of Bucharest at the conclusion of the award contract (framework agreement) with S.C. CVT SRL.

¹ Romanian-American University, Bd. Expozitiei No.1B, District 1, code 01210, Bucharest, Romania

In motivating the appeal, it was shown that the company CVT participated as a bidder in the procedure for awarding by public procurement the framework agreement for “Promotion services for Lot 2, namely promotion services for:

- a) projects funded from non-reimbursable community funds;
- b) national projects of scientific research;
- c) organizational structures of ASE Bucharest, COD CPV ..., the contracting authority being the Academy of Economic Studies Bucharest.

By letter of introduction, S.C. CVT expressed its agreement to participate in the auction, following the invitation to participate published in the SEAP. At the same time, the technical offer and the financial offer for Lot 2 were sent to the contracting authority, as well as the related documents.

Regarding the qualification documents requested from the bidders, only CVT SRL made them available to the contracting authority, while the counter-bidder S.C. GA SRL did not present them.

Subsequently, by the address issued by the contracting authority, the Evaluation Commission within it requested clarifications and possibly edifying documents in complement, regarding the following aspects:

- statement regarding subcontractors;
- which is the document under which Mrs. FG was authorized by the legal representative of the company to sign the documents submitted to the public procurement procedure.

In the opinion of the contesting company, the declaration regarding the subcontractors according to form 14 was not completed because in the procurement sheet it was stated that there is the obligation to complete only in case of the subcontracting intention. Therefore, if the tenderer does not intend to subcontract - as is the case here, he was not required to complete form 14. Therefore, the request of the contracting authority in this respect appears to be unjustified.

Regarding the document attesting the capacity of empowerment of Mrs. FG, it was revealed that the empowerment was drawn up and signed according to the model given by the contracting authority, a certified copy for conformity with the original being submitted with the award documentation.

By the address issued by the contracting authority it was communicated that the offer of the CVT company is acceptable and compliant, therefore admissible and declared qualified for the final stage of electronic auction for Lot 2, the same aspects being communicated by e-mail by SEAP.

After the expiration of the duration of the electronic auction, following the accession of SEAP, it was visualized that CVT SRL's offer took the 1st place in the ranking, therefore it is winning, being both technically and financially compliant.

Surprisingly, although the next step should have been the conclusion of the framework agreement, the contracting authority requested by a new address the written agreement regarding the extension of the term of validity of the offer for another 30 days, reasoning that there are “objective needs for the extension. the period of evaluation of the offers submitted by the economic operators participating in the procedure ,’.

Subsequently, although the framework agreement should have been concluded, this did not happen, the company concerned being informed that following the process of re-evaluating the

offers by the evaluation commission of the contracting authority, on Lot 2 of the procedure the authority the contracting party is to restart the final phase of electronic tendering in SEAP.

In the opinion of the contestant, the extension of the evaluation period of the offers submitted by the economic operators participating in the procurement procedure, invoking 'objective needs' is totally unjustified and illegal.

Thus, under the conditions in which it was established that CVT's offer is a winner (according to SEAP), the contracting authority could not return to the decision even invoking the so-called 'objective needs'. Basically, the decision to return to the initial decision by which the winning bid was declared is unmotivated, invoking the 'objective needs' being only a general argument, which is not capable of justifying the decision to resume the final phase of electronic auction.

Moreover, the contracting authority proceeded in an unfounded manner when it decided to re-evaluate the tenders, following the initial evaluation and the SEAP communication of the auction result.

Under the conditions in which a compliant and admissible offer was ranked on the 1st place, the contracting authority could no longer return on the decision, because the return can no longer intervene after the auction result is established. Thus, through the practice of re-evaluation, the right to conclude the framework agreement is violated, as a right gained after completing all the stages of the tender procedure, which is why S.C. CVT SRL, injured in a legitimate interest, understood to file an appeal, based on the provisions of art. 255, 256, 270 et seq. from O.G. no. 34/2006.

The practice of re-evaluating the contestant violated the right to conclude the framework agreement, a right that he won after completing the tender procedure.

As it is considered damaged in a legitimate interest, the contestant requested the admission of the contestation, the annulment of the annulment of the contested act as being unlawful and illegal and as a consequence the winning declaration of the offer submitted by CVT SRL, as well as the contracting authority ASE Bucharest at the conclusion of the contract award (framework agreement) with SC CVT SRL.

In another case, S.C. IGFP SRL filed an appeal against the act establishing and recording the result of the procedure for awarding the public procurement contract for the security service - COD CPV..... of the Military Unit Bucharest. It was requested that by decision to order:

- annulment of the public procurement procedure as being unreasonable and illegal and as a consequence;
- obliging the contracting authority to resume the procedure under legal conditions and to issue a new act respecting the award procedure.

It turned out that S.C. IGFP SRL participated in the award procedure by public procurement of the contract of services COD CPV of the contracting authority Military Unit Bucharest, having as object service of guard and intervention to military objectives with specialized companies for 1 objective with 3 positions of 24 hours and 1 position of 12 hours (at the headquarters of the contracting unit) and 1 objective with 3 positions of 24 hours (at point of work from Olt county).

Through the communication address they were informed that the company's offer was not declared a winner because the offered price was the highest. At the same time, it was communicat-

ed that the winning bid belongs to another company, because this one “is appropriate in terms of the requirements of the documentation for awarding the offer” and having a lower price.

In fact, in the case of the company declared a winner, only one of the two requirements that had to be met cumulatively is fulfilled, namely the lowest price. But the second condition, considered essential, is by no means fulfilled because the winning bid does not correspond in terms of the requirements of the award documentation.

Thus, according to the attribution documentation elaborated by the contracting authority, the participation criteria and implicitly of eligibility of the economic operators registered in the auction are the following:

- be registered with a competent authority;
- to have as field of activity the provision of security and intervention services;
- to hold the operating license issued by the General Inspectorate of the Romanian Police;
- to hold the emission license issued by the General Inspectorate for Communications and Information Technology (I.G.C.T.I.);
- to have a security notice secret service level, issued by the security authority of the Ministry of Defense.

Of all these conditions, that of holding the emission license issued by I.G.C.T.I. it was only fulfilled by the IGFP company, the holder of its own emission license both in Bucharest and the surrounding areas, as well as in the Olt area. The other two participating companies do not hold such licenses, the holders of licenses for the use of the respective radio frequencies being other companies, providers of public communications networks in the land mobile service. Or according to the chapter „Required documents”, one of the 5 compulsory points is the holding of the operating authorization and the emission license for the frequencies used issued by I.G.C.T.I. This requirement implies implicitly owning a license, on behalf of the company participating in the auction, and not on behalf of another economic operator. Moreover, even if it is admitted that such a license can be rented, the condition is still not fulfilled because the two network providers do not have licenses to use the frequencies for Olt County.

Therefore, the only company participating in the auction that fulfilled all the conditions of demand was S.C. IGFP.

Compared to the ones shown and because they are considered to be injured in a legitimate interest, they request the admission of the present contestation, the cancellation of the public procurement procedure as being unlawful and illegal and as a consequence the contracting authority is obliged to resume the procedure under legal conditions and at issuing a new act respecting the award procedure.

In the third case, SC RPTC SRL filed an appeal against the act establishing and recording the result of the procedure for awarding the public procurement contract for the cleaning services for the Emergency Institute for Cardiovascular DiseasesCOD CPV and it was requested that the decision be ordered:

- mainly, the cancellation of the procedure for awarding the public procurement contract for reasons of illegality of the procedure in relation to the requirements provided in the specifications;

- in the alternative, annul the result of the procedure for awarding the public procurement contract to S.C. SS S.R.L. and obliging the contracting authority to re-evaluate the offers and, consequently, to issue a new act declaring the subscriber's offer a winner, and the S.C. offer. SS S.R.L. as inadequate.

Along with the company RPTC SRL, at the auction were registered and participated other four companies cleaning services, among which S.C. SS SRL. As a result of the tender, the commission for evaluating the offers from the contracting authority, following the analysis of the offers through the award procedure, has designated our offer as a reform, and the winning one as belonging to S.C. Septiclean Service SRL, the following were contested:

Mainly, it was considered that the contracting authority did not comply with the legal provisions regarding the procedure for organizing the open tender.

Thus, regarding the personnel who were to serve for the fulfillment of the object of the public procurement contract, there is only one mandatory requirement related to the minimum number of requested personnel, respectively 75 persons. However, although the specifications were drafted within the deadline stipulated by the law, after the opening of the procedure, the contracting authority posted on SEAP, among other clarifications and one regarding „the personnel responsible for performing the subsequent contracts”, respectively: „you must present, for the personnel you will make available to the institute, documents, proving that you have it, respectively copies (signed and stamped in accordance with the original) after workbooks, flatbeds, etc.”.

Regarding this „clarification”, it was considered that this is clearly a new requirement and not a simple clarification. In the case of new documents that are required to be submitted within a so-called clarification, which is closely linked to a requirement of the specification, it is obvious that it is qualified as a new requirement.

Regarding the circumstance that the auction was to take place on 14.12.2017, and the contracting authority introduced a new requirement in the specifications on 08.12.2017, it is necessary to cancel the procedure for organizing the auction.

Moreover, even if it is assumed that the request for new documents would not be a new requirement and would be a simple clarification, it does not comply with the provisions of the specifications adapted to the legal provisions regarding the deadline for its adoption and publication. Thus, the alleged clarification, as defined and regulated both by the specifications, and by law, had to be submitted by the contracting authority at least 6 days before the deadline for submission of tenders.

As this clarification was made on 08.12.2017, 08.49 a.m. and the deadline for submission of the offer was on 14.12.2017, 10.00 a.m., the contestant considered that the legal term provided by the law was not respected.

Moreover, the legal term established by the normative act is at least 6 days before the deadline for submission of tenders. This term, following the legal interpretation according to the Civil Procedure Code (general law whose provisions supplement the special provisions of Law no. 101/2016) must be calculated on free days, the first and last days not being taken into account. In this sense, between the day of publication of the alleged clarification and the deadline for

submitting tenders, there are no six full days, which again leads to the non-observance of the tendering procedure.

For all the considerations mentioned above, the appellant requested the cancellation of the procedure for awarding the public procurement contract for reasons of illegality of the procedure in relation to the requirements stipulated in the specifications.

Subsequently, in the event that the main reason for the appeal would be overlooked, it was requested to cancel the result of the procedure for awarding the public procurement contract to S.C. SS S.R.L. and obliging the contracting authority to re-evaluate the offers and, consequently, to issue a new act declaring the contestant's offer as winner.

In conclusion, the only bidder participating in the auction that met all the eligibility conditions was S.C. RPTC SRL.

Compared to the ones shown and because they are considered to be injured in a legitimate interest, they requested the admission of the present challenge and consequently the contracting authority is obliged to award the contract to the company that meets all the requirements in the specifications and implicitly the disqualification of the company that did not submit at the right time all the necessary documents.