University of Tuzla
Faculty of Economics

ICEI

Internacional Scientific Conference
"Economy of Integration"

CONFERENCE
PROCEEDINGS

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EKONOMSKI FAKULTET PODGORICA

Univerza v Mariboru

5th International Scientific Conference
"Economy of Integration"

ICEI 2017

"The Role of Economic Thought in Modern Environment"

CONFERENCE PROCEEDINGS

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University of Tuzla
Faculty of Economics
7th-9th December, 2017
Tuzla, Bosnia and Herzegovina

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"The Role of Economic Thought in Modern Environment"

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PREDGOVOR

Od 2009. godine, u dvogodišnjoj vremenskoj dinamici, konferenciju "Ekonomija integracija", poznatiju pod akronimom "ICEI", Ekonomski fakultet Univerziteta u Tuzli organizuje u saradnji sa koorganizatorima iz Hrvatske (Ekonomski fakultet u Osijeku, Sveučilište Josip Juraj Strossmayer), Slovenije (Ekonomsko-poslovna fakulteta, Univerza v Mariboru), Srbije (Beogradska bankarska akademija − Fakultet za bankarstvo, osiguranje i finansije, Beograd), Crne Gore (Ekonomski fakultet u Podgorici) i Makedonije (Ekonomski fakultet Prilep, Univerzitet "Sv. Kliment Ohridski"). Uspješno povezivanje sa ovim visokoškolskim institucijama omogućava Ekonomskom fakultetu u Tuzli poboljšanje performansi vezanih za obrazovni proces i naučno-istraživači rad, osiguravajući tako i pretpostavke za uspješnije integrisanje Univerziteta u Tuzli u evropski prostor visokog obrazovanja.

Na prvoj ICEI konferenciji eminentni stručnjaci iz regiona Jugoistočne Evrope raspravljali na temu "Kako upravljati u vrijeme krize?". Druga konferencija bila je posvećena temi "Izazovi i perspektive integracija zemalja Jugoistočne Evrope", treća konferencija temi "Znanjem od recesije ka prosperitetu", dok se na četvrtoj konferenciji raspravljalo na temu "Izazovi ekonomije u kriznom okruženju". Posljednja konferencija, održana 2017. godine, bila je nova prilika za diskusiju i mjesto ponovnog susreta velikog broja istraživača, praktičara i naučnika s polja ekonomije i biznisa, prije svega, zemalja Jugoistočne Evrope.

ICEI 2017, čija je centralna tema "Uloga ekonomske misli u savremenom okruženju", imala je za cilj da kroz razmjenu ideja, iskustava i kritičkog promišljanja doprinese diseminaciji znanja i poticanju rasprava o mogućnostima ekonomske nauke u rješavanju kompleksnih, socio-ekonomskih problema današnjice. Socio-ekonomsku stvarnost mnogih zemalja, posebno onih iz regiona Jugoistočne Evrope, karakteriše rastući trend nezaposlenosti, pogotovo mladih. Nezaposlenost proističe, između ostalog, iz neusklađenosti sistema obrazovanja s potrebama tržišta rada, a vrlo često rezultira negativnim migracijskim saldom, koji, uz opadajući natalitet i rastuće staro stanovništvo, smanjuje ljudski kapital u zemlji. Pored toga, nakon deset godina od globalnog finansijskog šoka, zemlje u tranziciji još uvijek osjećaju efekte krize (kasnije – recesije) na finansijski sistem, koji se manifestuju kroz likvidnosne poteškoće, otežanu izgradnju i razvoj finansijskih tržišta i, što je jednako važno ili, čak, važnije, na realni sektor, kroz usporene privredne aktivnosti, smanjene (strane direktne) investicije i sl., a sve to dalje biva komplikovano političkom nestabilnošću, povećanim rizikom zemlje, što se odražava na cijenu kapitala, *etc*.

Stoga, Konferencija ICEI 2017 rezultirala je konkretnim prijedlozima vezanim za unapređenje komunikacije i saradnje između donosilaca odluka (vlada, ministarstava, agencija), istraživača (članova akademske zajednice, razvojnih centara, instituta i sl.) te menadžera i vlasnika kompanija, kako bi se sinergetskim djelovanjem kreirao povoljan poslovni ambijent u nacionalnom i regionalnim okvirima. Tim više jer je novum Konferencije bio organizovanje Biznis foruma "Saradnja fakulteta, institucija i privrede – pretpostavka ekonomskog razvoja", što je neizmjeran doprinos Konferenciji. Također, dodatna vrijednost ICEI 2017 bila je Specijalna sesija "Kako danas objaviti izvorni naučni rad?", za koju su ogroman interes iskazali članovi akademske zajednice svih nivoa.

ICEI 2017 potvrdila je sva očekivanja (ko)organizatora, posebno u smislu velikog broja radova koji su prošli dvostruku anonimnu recenziju i koji su tematizirali širok spektrum područja [kao npr. ekonomska nauka versus savremenih socio-ekonomskih izazova, (ne) usklađenost obrazovanja s potrebama tržišta rada, tržišni izazovi pred kompanijama zemalja Jugoistočne Evrope, finansiranje lokalnog razvoja, uloga savremenog menadžmenta u izgradnji konkurentnosti itd.], kao i primijetnog povećanja broja citiranosti radova koji su publikovani u zbornicima ICEI, a pogotovo usljed indeksacije Zbornika ICEI 2015 u bazi "Conference Proceedings Citation Index". Programski i recenzentski odbor svojim sastavom i dignitetom članova (njih ukupno 125) koji dolaze sa ekonomskih fakulteta iz zemalja organizatora konferencije i razvijenih zemalja svijeta, garantuje kvalitet radova koji su prošli serioznu selekciju i dvostruku anonimnu recenziju. U okviru ICEI 2017 konferencije prezentirani su rezultati teorijskih i empirijskih istraživanja sublimiranih u okviru 60 radova, od strane ukupno 115 (ko)autora, iz devet zemalja svijeta, i to: BiH, Slovenije, Hrvatske, Srbije, Makedonije, Italije, Velike Britanije, SAD-a i Australije.

Na kraju, ali ne na posljednjem mjestu po važnosti, poseban doprinos Konferenciji dali su briljantni uvodničari − prof. dr Fikret Čaušević, redovni profesor sa Ekonomskog fakulteta Univerziteta u Sarajevu, koji je održao predavanje na temu "Finansijska globalizacija, ekonomski rast i male otvorene ekonomije", i prof. dr Slavica Singer, profesor emeritus, UNESCO Katedra za poduzetničko obrazovanje, Ekonomski fakultet Sveučilišta Josip Jurja Strossmayer u Osijeku, na temu "Zašto makroekonomska politika ne može bez poduzetništva i managementa, i obrnuto?".

U r e d n i c e

FOREWORD

Since 2009, the biennial scientific conference with international participation named "Economy of Integration" (better known under the acronym "ICEI") has been organized by the Faculty of Economics, University of Tuzla in cooperation with co-organizers from Croatia (Faculty of Economics in Osijek, Josip Juraj Strossmayer University), Slovenia (Economics University of Maribor), Serbia (Belgrade Banking Academy - Faculty of Banking, Insurance and Finance, Belgrade), Montenegro (Faculty of Economics in Podgorica), and Macedonia (Faculty of Economics Prilep, University "St. Kliment Ohridski"). Successful collaboration with these respected institutions has proven highly valuable to the Faculty of Economics in Tuzla, as a good way to improve the overall performance of the educational process and scientific researchers, paving the path for a more successful integration into the European university community.

At the first ICEI Conference, we saw eminent experts from the region of Southeast Europe engage in discussions around "How to Manage in Times of Crisis?". The second conference was dedicated to "Challenges and Perspectives of the Integration of the Southeast European Countries". The third conference focused on "With Knowledge from Recession to Prosperity", while the fourth conference focused on "Challenges of Economy in Environment Under Crisis". The latest conference, held in 2017, provided fresh opportunities for the researchers to meet and engage in various discussions.

The key focus of ICEI 2017 was on "The Role of Economic Thought in Modern Environment". The goal of this conference was to provide opportunities for sharing of ideas, experiences and critical thinking, contributing to rational dissemination of knowledge by encouraging debates about the role of economic science in solving complex, socio-economic problems of today. The socio-economic reality of many countries, especially those from the South East European region, is characterized by a growing trend of unemployment, especially when it comes to young people. Unemployment stems, among other things, from the lack of harmonization between the education system and the needs of the labor market, which very often results in a negative migration balance. This, along with the declining birth rate and the increasing older population, reduces the overall human capital in the country. In addition, ten years after the latest global financial crisis, the developing countries still feel the effects of the crisis and recession on their financial systems, manifested through liquidity difficulties, challenges with financial markets development, slower economic activity, investment reduction, etc. This is further complicated by political instability, increased country risk, which is reflected in the price of capital, etc.

ICEI 2017 Conference resulted in some concrete proposals related to the improvement of communication and cooperation between decision-makers (governments, ministries, agencies), researchers (members of the academic community, development centers, institutes, etc.), and managers and company owners, on how to synergistically create favorable business environment within national and regional frameworks. One of the Conference's innovation was the organization of the Business Forum, named "Collaboration of Faculties, Institutions and Economics - The Premise of Economic Development" as well as the Special Session on "How to Publish Original Scientific Work Today?", both for which the members of the academic community at all levels expressed great interest.

ICEI 2017 fulfilled all organizers' expectations, especially in terms of the number of submitted papers that underwent a double anonymous review, covering a wide range of areas, such as economic science versus contemporary socio-economic challenges, (mis)alignment of education with the needs of the labor market, market challenges for Southeast European companies, local development funding, the role of modern management in competitiveness support, etc. The inclusion of the Proceedings ICEI 2015 in the "Conference Proceedings Citation Index" greatly contributed to the number of paper submissions for ICEI 2017. The program and review committees consist of highly respected members (in total 125) from various economic faculties and guarantees the quality of the works that have passed a serious selection, including a double anonymous review. Within the framework of ICEI 2017 Conference, the results of theoretical and empirical research was presented in over 60 papers were, by a total of 115 (co)authors, originating from nine countries: Bosnia and Herzegovina, Slovenia, Croatia, Serbia, Macedonia, Italy, Great Britain, USA, and Australia.

Last but not least, special contribution to the Conference was given by the brilliant introductory speaker − Fikret Causevic, Full-time Professor at the School of Economics and Business Sarajevo, who gave a lecture on "Financial Globalization, Economic Growth and Small Open Economies", as well as Slavica Singer, Professor Emeritus, UNESCO Chair of Entrepreneurial Education, Faculty of Economics, Josip Juraj Strossmayer University in Osijek, who presented a speech titled "Why Macroeconomic Policy Cannot be Without Entrepreneurship and Management, and Vice Versa?".

The Editors

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IT GOVERNANCE IN THE BANKING SECTOR: EVIDENCE FROM ITALY, GERMANY, FRANCE AND SPAIN[1]

IT UPRAVLJANJE U BANKARSKOM SEKTORU: DOKAZI IZ ITALIJE, NJEMAČKE, FRANCUSKE I ŠPANIJE

Abstract

The paper analyzes Information Technology (IT) governance disclosure on a sample of the major 20 EU banks (from Italy, Germany, France and Spain) to observe if, how and where banks report on their IT governance issues. Since IT governance (like other aspect of banking business) can be influenced by regulatory environment, therefore, we examine whether any differences in supervisor attitude to IT concern will induce differences in IT governance across countries. IT is an intrinsic component of banks' operational functioning; it is a key resource in developing and supporting banking services, enabling institutions' strategies, and it is essential for almost all banking processes and distribution channels. IT and data architectures are also becoming even more necessary to improve banks' risk management process, and support the broad management of financial risks. Due to this increasing relevance

of IT, it is necessary to pay more attention on IT governance as integral part of banking corporate governance, being sure that IT processes are fully integrated into the life cycle of business process, and used as an enhancer of organizational strategy and goals. Recurring to IT governance transparency, as a key mechanism of corporate governance, we: i) elaborate an original IT governance framework; ii) perform a content analysis on banks public disclosure and a selected number of Supervisors' official documents (2008-2015) to build up IT governance indices; iii) run a multidimensional analysis to detect causal relationships between variables. Our analysis indicates that differences in the level of IT governance disclosure are bank specific and not related to country's institutional settings; we also observed an increasing consistent attention of both Supervisors and banks on IT issues starting from 2013.

Sažetak

Rad analizira objelodanjivanje upravljanja informacionom tehnologijom (IT) na uzorku od 20 vodećih EU banaka (iz Italije, Njemačke, Francuske i Španije), da bi se ustanovilo da li, kako i gdje banke izvještavaju o pitanjima njihovog IT upravljanja. Budući da IT upravljanje (kao i drugi aspekti bankarskog poslovanja) može biti pod uticajem regulatornog okruženja, u radu se ispituje da li će razlike u supervizorskom stavu prema IT pitanju uzrokovati razlike u IT upravljanju među odabranim zemljama. IT je intrinzična komponenta operativnog bankarskog funkcionisanja; to je ključni resurs u razvoju i podržavanju bankarskih usluga, nešto što čini mogućim strategije institucija i esencijalna je za gotovo sve bankarske procese i distributivne kanale. IT i podatkovne arhitekture postaju, takođe, sve potrebnije u unapređenju bankarskog upravljanja rizicima i podrška sveopštem upravljanju finansijskim rizicima. Zbog rastućeg značaja IT, neophodno je više pažnje posvetiti IT upravljanju kao sastavnom dijelu bankarskog korporativnog upravljanja, pri čemu IT procesi moraju biti u potpunosti integrisani u životni ciklus poslovnih procesa i korišteni kao "podržavač" organizacione strategije i ciljeva. Podsjećanjem na transparentnost IT upravljanja, kao ključnog mehanizma korporativnog upravljanja, autori: i) elaboriraju originalni okvir IT upravljanja; ii) provode zadovoljavajuću analizu bankarskog javnog objavljivanja i odabranog broja supervizorskih zvaničnih dokumenata (2008-2015), kako bi ustanovili indekse IT upravljanja; iii) provode multidimenzionalnu analizu, kako bi ustanovili kauzalnu vezu između varijabli. Autori su došli do zaključka da razlike u nivou objavljivanja o IT upravljanju ovise o banci i nisu povezane sa instutucionalnim uređenjem zemlje;

također, autori su zapazili rastuću konzistentnu pažnju i supervizora i banaka prema IT pitanjima počevši od 2013. godine.

Ključne riječi: banke, korporativno upravljanje, IT rizik menadžment, regulacija, finansijska kriza

JEL: G21, G30

1. Introduction

Even if first scientific research regarding IT governance was developed in the 60s, only in the late 90s, this topic obtained a systematic attention from scholars and practitioners. From then on, the concept of IT governance has become the object of the greater attention and starts to be analyzed encompassing the mechanisms of corporate governance. Literature provides various definitions and a range of constructs to describe the concept of IT governance in the form of different structures, processes, domains, facets, and elements, in analogy with corporate governance. In fact, the entire corporate governance includes IT governance as well as business and IT are two sides of the same coin. However, IT governance merits a distinct attention within other corporate governance mechanisms for two reasons:
− most organizations in today's complex and competitive business environment relies heavily on IT to improve operating efficiency and sustain competitive advantage (Mata *et al.*, 1995);
− IT governance can help firms to arrange and specify an efficient IT decision-making structure for a range of IT-related topics, such as IT investment, IT principles, and IT infrastructure management (Sambamurthy & Zmud, 1999; Weill & Ross, 2004; Xue *et al.*, 2008 and 2011).

Therefore, the effective governance of IT can support organizations in generating value-added from IT, contributing to the broader objectives of corporate governance (Weill & Ross, 2004). IT, as for other sectors, is an intrinsic component of modern banks' operational functioning too; and has become the backbone of almost all banking processes, considering the growing role assumed in: i) supporting management in strategic decisions; ii) facilitating the automated control environment on which core banking data are based; iii) developing new products and services to compete in the financial markets; iv) the improvement of distribution channels.

While IT has emerged as a strategic resource in today's banking business environment, it can also raise critical issues, such as effective IT decision making and management control, IT investment priorities, and IT risk management. In particular, regarding the latter, one lesson learned from the financial crisis that began in 2008 was that banks' IT and data architectures were, on one hand, necessary to improve banks' efficiency and risk management process, and, on the other hand, deeply inadequate to support the broad management of financial risks. Banks' capacity to capture robust data for timely and automated risk identification increasingly relies on data and technology infrastructures. The lack of the ability of many banks to efficiently and effectively provide Senior Management with a true picture of the risks the organization faces – which was more evident during the global financial crisis - has led to a renewed attention on IT management from regulators. Regulators don't address to banks specific requisites for an effective IT governance and IT risk management, even so these changes may result in strategy overhaul, process review and IT system impact on the banking industry.

In the awareness that the risk management systems have failed in many cases due to inadequate corporate governance mechanism rather than the failures of the IT systems *sensu stricto*, in this paper, we want to highlight if banks have begun to ascribe greater importance to the coordinated management of all IT resources, in other words to IT governance. We explore the attention paid to IT governance in 4 EU countries by analyzing a sample of banks and national Supervisors, to point out if, after the crisis, the interest on this topic.

Differently from previous studies which use case studies and/or questionnaires to deepen IT governance practices, we base our analysis on banks' public disclosure. We rooted our research on the largely shared assumptions that firms with good IT governance tend to disclose more on related mechanisms (*e.g.* Clarkson *et al.*, 2004). To observe if the attention to IT governance has increased in the last years, we have developed an original descriptive framework of IT governance (ITGF) disclosure tailored to the banking sector. Using the ITGF we performed a content analysis to measure the level of attention on IT governance through the years (2008-2015) and cross countries from both banks and Supervisors. This study, to the extent that constitutes a pilot study, provides several insights into the academic debate within the macro strand of literature on the corporate governance mechanisms, and more specifically in the less analyzed strand of IT governance focusing on the banking sector.

The paper is organized as follows: section 2 provides the background of the research, including prior literature and the development of research questions, then section 3 describes the research methodology and the sample and data collection, while main results are presented in section 4. Finally, section 5, summarizes the main conclusion and suggestions for future research.

2. Backgrounds and development of research questions

Traditionally, literature has deepened Information Technology issues relating to the banking sector analysing IT as a key resource in improving operating efficiency in the banking system (Banker *et al.*, 2009; Berger, 2003; Chiasson & Davidson, 2005; Chowdhury, 2003; Fuß *et al.*, 2007; Zhu *et al.*, 2004); only very small strand of the recent literature has started to analyze banks' IT governance (*e.g.* Pardo *et al.*, 2011).

Broadly speaking, IT governance provides structures, processes, and relational mechanisms to control and monitor the effectiveness of IT (Peterson, 2004; De Haes & Van Grembergen, 2009; Willson & Pollard, 2009). IT governance and its mechanisms are conceptualized in the literature following corporate governance principles (Korac-Kakabadse & Kakabadse, 2001; ITGI, 2003; Weill & Ross, 2004; Peterson, 2004; Jordan & Musson, 2004; Mähring, 2006; Raghupathi, 2007; Van Grembergen & De Haes, 2009; Heart *et al.*, 2010); decision rights, accountability, and risk management are some linked mechanisms included in more recent research (Brown, 1997; Sambamurthy & Zmud, 1999; Weill & Ross, 2004; Brown & Grant, 2005; Parent & Reich, 2009; Huang *et al.*, 2010).

In the effort of trying to identify effective IT governance arrangements, scholars have deepened the significance of different mechanisms of IT governance (Sambamurthy & Zmud, 1999; Kambil & Lucas, 2002; Trites, 2004; Weill & Ross, 2004; Andriole, 2009; Huang *et al.*, 2010; Xue *et al.*, 2011), such as the role of the Board of Directors, the effectiveness of the IT steering committee, IT control and firm performance, IT investment performance, and IT audit issues (Trites, 2004; Huff *et al.*, 2006; Mähring, 2006; Boritz & Lim, 2008; Gu *et al.*, 2008; Merhout & Havelka, 2008; Prasad *et al.*, 2009).

While most of the principles of corporate governance are integrated into the major IT governance literature, scholars seem to have paid less attention to IT governance transparency. The last one is defined as the ability of firms to

provide adequate and relevant IT governance information in a timely and effective manner to stakeholders (*i.e.*, investors, policy makers, and regulatory bodies), to enable them to assess management's behavior in using IT (Millar, *et al.*, 2005; Eldomiaty & Choi, 2006; Raghupathi, 2007; Joshi et al, 2013). As demonstrated in the existing literature, firms provide information on IT governance – voluntary – if they obtain benefits such as a reduced cost of capital (Barry & Brown, 1985, 1986; Vanstraelen *et al.*, 2003; Easley & O'Hara, 2004), an improvement in liquidity (Diamond & Verrecchia, 1991; Kim & Verrecchia, 1994), and a better information intermediation (Bhushan, 1989; Lang & Lundholm, 1996).

Based on the study of Lang & Lundholm (1996) and Clarkson *et al.* (2004), we infer that the more firms have good IT governance in place, the more they are incentivated to disclose.

Based on this theoretical premise, the first three research questions that we try to answer are:
- *Q1: Has the level of IT governance disclosure changed after financial turmoil?* We expect an increasing in the level of disclosure of IT governance, considering the growing importance of IT in the banking sector.
- *Q2: What topics of IT governance are publicly disclosed?* Considering the relevance of IT governance as a whole, we do not expect differences among areas of disclosing.

At our knowledge, there is no specific study on IT governance disclosure in the banking sector, except of the contribute of Joshi *et al.* (2013). Since IT governance - like other aspect of banking business - can be influenced by regulatory environment, is important to understand in which direction Regulators and Supervisors have moved. As mentioned above, the recent financial turmoil started in 2007 has catalyzed the attention, among others, on risk management and on the processes, data management and the new emerging risks, such as IT risk. More specifically, from an IT governance perspective, Parent and Reich (2009) identify several types of IT risks such as IT project risk, IT competence risk, IT infrastructure risk, business continuity, and information risk, which can have adverse impacts on business.

Generally, for the assessment of IT risk all banks have mechanisms and measures in certain forms depending on regulation at the local level. The

renewed interest in risk management has culminated in the necessity to review the regulatory framework. In fact, at international level the BCBS has:

- started a comprehensive review of Basel II, culminated in the release of a reform package known as Basel III Framework (corresponding to Capital Requirements Regulation (CRR) and Capital Requirements Directive (CRD IV) in EU countries) which has affected - albeit indirectly - IT governance, emphasizing that risk management systems should have appropriate Management Information Systems (MIS);
- rolled out a new set of Principles with the aim to develop banks' Risk Data Aggregation and Risk Reporting, requesting banks to comply starting from 2016.

In the renewed Basel framework, there is no specific reference to IT related risk and IT risk management processes, neither in other international regulatory intervention; IT risk is considered as a sub-type of operational risk (see article 85 CRD IV). Furthermore, in Europe, to reinforce the importance of an adequate IT risk management for banks, the EBA Guidelines provide direction to the Supervisors for assessing banks' IT risk (EBA, 2016): one more time, regulators don't address to banks specific requests for an effective IT risk management, but set a framework for Supervisors to monitor this topic at institution level.

Considering that all these changes in the regulatory environment may result in strategy overhaul, process review and IT system impact, we want to examine whether any differences in Supervisors' attitude to IT concern at the national level, will induce differences in banks' IT governance, and level of investments in IT projects to comply with regulatory prescriptions or guidelines, if any. Thus, the last research question is:
Q3: To which extent the Supervisors' behavior – if changed - has affected the attention paid by banks to the theme? We expect that changes in the banks' level of disclosure are highly conditioned by Supervisors' habits.

3. Research methodology

Our analysis is devoted to evaluate the IT governance practices in a sample of EU banks and to observe if the attention to this issue has increased over time (2008-2015) and/or varies across sample countries (Italy, Germany, France and Spain). Geographical differences can be surely influenced by regulatory approach used by Supervisors at national level.

The first three research questions are oriented towards analyzing the level (Q1), the content (Q2) of disclosure on IT governance performed by each institution; to investigate IT governance transparency, we use content analysis to build up the dataset to be employed in the empirical analysis (Weber, 1985) from public disclosure documents of banks included in the sample.

We first identified a set of items related to IT governance grouped in 4 focus areas/categories (IT Role & Responsibility, IT Resources & Plans, IT Risk Management, IT Investment); the resulting original IT governance framework (ITGF) is elaborated by adapting and enriching the Joshi et al (2013) approach to fit our purpose (see section 3.1). For each focus area under ITGF, the items were selected on the base of current literature (see Tables 3-6), including terms which emerged from regulatory environment and practitioners debate and on a pilot study we have conducted on banks' annual reports. Using the selected set of items within the ITGF, we inspect the institutions' documents using the program MAXQDA to verify whether each item is present. Appling dichotomous coding technique (1=present; 0=not present) we build up a unique dataset to be used to measure the level and the content of IT governance disclosure. It was possible to compute:

- *a total IT governance score*, which represents the number of times that each item is disclosed in the reports analyzed. In the impossibility to discriminate if institutions write a short sentence or an entire section regarding IT governance in their reports, we decided to consider not only the presence of each item (0,1), but also the total number of times they are enumerated (item score). The underlying assumption is that the more banks and Supervisors mention ITGF items, the more the level of disclosure is higher. For example, if we find evidence of Internal Audit position 5 times in the Annual report, then it is assigned an item score of 5. By simply changing the level of aggregation considered, we can calculate different IT governance score: Total IGF score, Category and Sub-category score;
- *for banks*, four IT governance indices, one for each focus area within ITGF (ITRR_Index, ITRP_Index, ITRM_Index, ITINV_Index); the indices are obtained dividing the category score by the number of expected items in each category (Bollen *et al.*, 2006; Joshi *et al.* 2013):

$$ITy_{-Index} = \frac{1}{N_y} \sum_{i=1}^{N_y} x_i$$

where: IT$y_{\_Index}$ = IT governance Index related to y category (namely RR: Role and Responsibility; RP: Resources and Plans; RM: Risk Management; INV: Investment); x_i= Sum of the item scores within each category, and N_y number of items included in y category.

We use the sum of the four ITy_index to calculate the total ITGF Index for banks. This index and its components are used to compare the level of IT governance disclosure across time and countries (Q1). From dataset, it is also possible to investigate how banks disclose details on IT governance (Q2).

In order to measure the changes in the attention paid by different Authorities to IT governance, we performed the content analysis on a selected group of Supervisors' documents. We considered items included in the first three categories (ITRR, ITRP, ITRM), verifying whether each item is present (1=present; 0=not present) in the Authorities' Annual reports or national law. The underlying hypothesis is that in this kind of documents is possible to find signals of a greater level of attention to IT governance paid by Supervisors. Starting from the resulting original dataset we build up a comprehensive ITGF_Index for each Authority calculated as the sum of two specific IT governance indices:
−   the index calculated in the Annual Report of Supervisors, which expresses the attention paid on IT governance issues (ITGF_SUP_AR); it is calculated dividing the Annual Report score to the total number of expected items within the ITG framework;
−   the index calculated on the national regulation of the analyzed countries, which means the presence of constrains set by national agencies on the IT Governance related topics.

Aiming at evaluating the influence of Supervisors' attitude on banks' IT governance behavior, we infer the relationship between ITGF_Index_Banks and ITGF_Index_Supervisors (Q3) using an OLS regression and panel data model estimates. The analysis, at this stage, can be considered as a pilot study to test banks' and supervisors' behaviors on IT governance issues, and it is to be enriched in further studies.

The existing IT governance literature does not propose any single standard framework to assess IT governance using disclosure practices: all empirical analysis, except of Joshy *et al*. (2013), are based on surveys and/or single case studies, in other words are based on internal information. Analyzing banks'

from outside, we are aware that banks would not disclose on all aspects of their IT governance, also because they are not forced to describe specific procedures related to their IT strategy and so on. Following Lang & Lundholm (1996) and Clarkson *et al*. (2004), we assume that the more banks have good IT governance in place, the more they are encouraged to disclose.

Considering this theoretical premise, we expect to find some clues of specific structural IT governance mechanisms in place in each institution analyzed. For example, a bank might disclose the presence of Technology Committee to implement IT strategy, or of CIO to support business goals with IT management at the top level. The underlying assumption is that the dissemination of this kind of information makes sure stakeholders that the bank has an IT governance structure and that – probably - IT policies and procedures are in place.

In order to develop content categories, we construct a so-called IT Governance Framework according to previous scholars contributes in assessing IT governance and based on our pilot study conducted on the Annual Reports of banks/Supervisors and on main international regulation; Tables 3-6 provide a brief description and supporting literature for each item included in each of the four focus areas/categories.

According to prevalent literature (Table 1), we suggest that the level of transparency of IT roles and responsibilities (IT Role & Responsibility, ITRR) can be used as a proxy of a good IT governance practices. In our opinion the presence of the following roles is the necessary premise of an effective IT governance: i) IT strategic roles; ii) IT senior management; iii) IT operational roles; iv) IT control roles. The definitions of corporate governance (OECD, 1999; 2004), of which IT governance can be considered a sub-set, present a need for leadership (strategic roles), direction (Senior Management) and control (roles). Therefore, IT governance must be driven from the highest levels within the organization not only from the IT department or business unit levels (operational roles) across the organization (Webb *et al*., 2006). For IT to be effective governed the presence of a variety of roles can be considered a necessary premise. Compared with previous studies, we improved the number of items related to control functions: starting from the main three obligatory control functions in banks defined by Basel documents (risk control, compliance and internal audit), we have considered IT risk control, IT compliance, and IT audit; the underlying assumption is that with

a growing level of complexity and interdependencies of banks' technology and operating structures, IT control roles should be reinforced and, to some extent, performed internally.

With the second focus area (IT Resources & Plans, ITRP) we aimed to investigate the relevance attributed to IT resources/process and infrastructures, in the belief that, due to both competitive and regulatory pressures, the relevance of IT management elements would increase, and consequently, the related information in the public documents.

To capture IT risk management practices (IT Risk Management, ITRM) we constructed an index that considers the main phases of risk management process: identification, evaluation, treatment and monitoring. The basic assumption is that the main constituent of IT risk management should be communicated to all relevant stakeholders. With this indicator, we try to fix if banks disclose regard IT-related risk management policies/processes in place, and if IT risk is treated jointly or independently with respect to the operational risk management framework.

The last focus area ITINV is concentrated on IT budget/investments. In the past two decades, practitioners and scholars (ITGI, 2003; Weill & Ross, 2004) have paid a great attention on this topic, but the major part of these studies is focused on the relationship between disclosure on IT financial matters and economic benefits for firms. In our research, we analyze IT investments as an attribute of IT governance disclosure, since budgeting and investments are the responsibilities of Top Management (ITGI, 2003); and better IT governance practices are based on clear information on IT investments useful to assess the business value of IT.

Table 1. *ITGF indices – items and literature references*

CAT and SUB-CATEGORY		ITEMS	RILEVANT LITERATURE
ITR	A. IT control roles	1. It audit/EDP audit; 2. Information security control function	Sambamurthy, et al., 1993; Karimi et al., 2000; Hadden & Hermanson, 2003; Van Grembergen & De Haes, 2004; Trites, 2004; Peterson, 2004; Nolan & McFarlan, 2005; Premuroso & Bhattacharya, 2007; De Haes & Van Grembergen, 2008; Joshi et al. 2013 Pilot study
	B. IT operational roles	3. Business continuity management; 4. CERT/SOC; 5. Data management office/center; 6. IT service/function	
	C. IT senior management	7. CIO; 8. CISO; 9. IT management	
	D. IT strategic roles	10. Technology committee; 11. Other IT committee	
ITRP	A. IT plans/policy	1. Information security policy; 2. IT plan/s; 3. IT strategy	ITGI, 2003; Trites, 2004; Jordan & Silcock, 2005; De Haes & Van Grembergen, 2008; SSG, 2010; BCBS, 2013; Joshi et al., 2013 Pilot study
	B. IT processes	4. EDP; 5. IT resources governance; 6. IT processes/procedures	
	C. IT resources	7. IT/Data Infrastructure/Architecture; 8. IT resources/solution	
	D. IT standard/ principles	9. ITIL/COBIT/NIST; 10. ISO 27001-5; 11. Other IT governance Standards	
ITRM	A. Identification	1. Cyber Risk/Attack IS Breach; 2. IT Fraud; 3. IT Incident/failure; 4. IT risk	Trites, 2004; Jordan & Silcock, 2005; Li et al., 2007; De Haes & Van Grembergen, 2008; Merhout & Havelka, 2008;Regulatory environment & practitioners debate; Pilot study; Joshi et al., 2013
	B. Evaluation	5. IT risk/Business continuity/Cyber security model; 6. IT risk appetite; 7. IT risk assessment; 8. IT risk report	
	C. Treatment	9. Business continuity plan; 10. Contingency plan; 11. Disaster Recovery plan; 12. Information/Cyber security plan	
	D. Management	13. IT risk management; 14. IT risk regulation/compliance	
ITINV	A. IT information in financial statement	1. Expenses in income statement; 2. Investment in balance sheet	Takemura et al., 2005; De Haes & Van Grembergen, 2008
	B. IT budget	3. IT budget	
	C. IT expenses	4. IT Expenses	
	D. IT hardware/software	5. IT hardware/software	

Source: Authors' research

Countries selected for our analysis are France, Germany, Italy, and Spain due to the dimension of the national banking system in term of total assets, representing together around 73% of total assets of the EU banking sector (ECB, 2016). For each country, we considered the three major banks, being sure to include in the sample at least one G-SIB for each country: the final sample consists of 20 international banking group. As mentioned in the previous pages, to perform the content analysis, we recorded data from different sources of public disclosure of banks included in the sample (398 documents), namely: i) Annual Reports; ii) Corporate Governance reports; iii) Pillar III reports; iv) CSR/Sustainability reports, if any. To calculate ITGF_Index for Supervisors we perform the content analysis on the following types of sources: i) Supervisors' Annual Reports (30 documents in total); ii) Regulations which, during the period 2008-2015 a) put in place the Basel III framework; b) apply EBA Guidelines on internal Governance (GL44); c) specifically refer to the BCBS (2013) Principles of effective Risk Data aggregation and Risk Reporting; d) and any other specific regulation on IT governance, if available in English. Even if we have found other important regulatory provision in the analyzed countries, it was impossible to perform content analysis because of the language.

4. Results and discussion

Table 2 provides descriptive statistics for the variables employed in this study. The mean for the overall IT disclosure index for banks is 2.50, representing that on average, during the period considered, banks disclosed on around 103 items of the 41 within ITGF; however, the variance of the index is broad among the sample. Similar considerations can be done for Supervisors' ITGF index, even if the mean value and the range of variation are smaller than banks' ones. Figure 1 illustrates the evolution of IT Governance Indices calculated for the banks' sample and grouped by country: it is almost evident a generalized increasing of IT governance disclosure through the years with more intensity starting from 2013; ITINV_Index doesn't denote any particular evidence since it shows depressed values cross year and cross country; the only exception is represented by German banks', for which the contribution of ITINV_Index to ITGF_Index is more relevant. It is also possible to highlight some differences deeply analyzing results in different countries for ITRR and ITRP focus area. For instance, Spanish banks in the sample have started to pay greater attention to all items related to ITRR in the 2015 compared to previous years and other countries. Spain differs from other countries also

because of the presence of a larger number of roles and responsibilities related to IT governance. Italian banks recorded a slight upward trend in time for all indices and they distinguished for ITRP. Items included in ITRM, as expected, are the most disclosed even if the phenomenon is more evident starting from 2013. Despite differences recorded among the four analyzed countries, it seems that IT governance disclosure has increasingly changed after financial turmoil and more consistently in the last three years considered in the analysis (Q1).

Table 2. *Descriptive statistics*

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX	VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
BANKS	160			1	20	SUPERVISORS	160			1	4
ITGF_INDEX_BANKS	160	2.50096	1.799731	0	16.95844	ITGF_INDEX_SUPERVISORS	150	.660019	.5637494	.02849	1.823362
ITRR_INDEX	160	.4142045	.6013609	0	6.090909	ITGF_SUP_AR	150	.2640076	.2170656	0	.8262108
ITINV_INDEX	160	.41875	.3523841	0	2	ITGF_SUP_REG	150	.3960114	.4942532	0	1.396011
ITRM_INDEX	160	1.166869	1.02928	0	7.285714						
ITRP_INDEX	160	.5011364	.6338665	0	3.181818						

Source: Authors' research
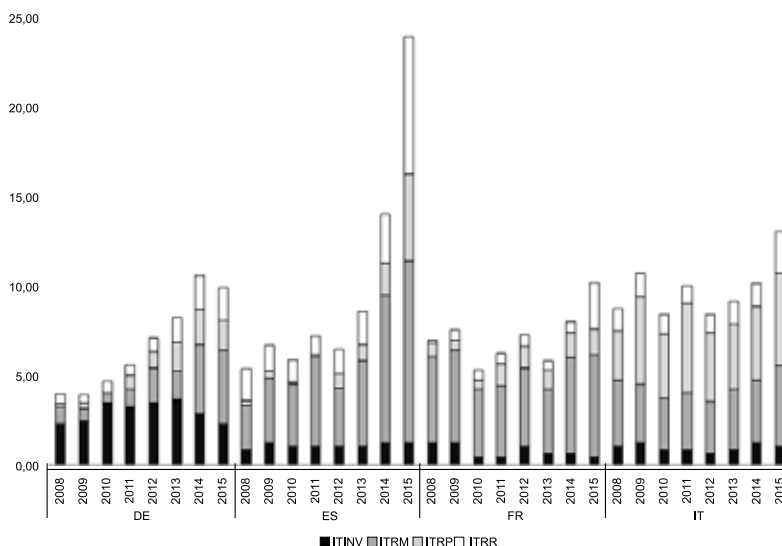
Figure 1. *Evolution of banks' IT governance indices*: distribution by country***

Note: * ITGF_Index is the sum of the indices related to the four categories (ITRR_Index, ITRP_Index, ITRM_Index, ITINV_Index); the level of ITGF_Index corresponds to the height of the bar. ** The value of indices for each country is calculated as the sum of banks' indices, including in the sub-sample.

Source: Authors' research

To answer Q2 we considered the percentage of IT governance items disclosed by banks in the sample (Table 3) grouped by Sub-Categories. In addition, thanks to the way in which the disclosure index is calculated, it was possible to measure the ITGF disclosure at Sub-Categories level. Results highlights:

- a generalized lack of disclosure of organizational positions (see category ITRR); more attention is paid instead to Operational roles related to the insurance of business continuity; surprisingly there isn't an increase in IT control roles as expected;
- ITRP exhibits an increasing number of banks that disclose on IT resources (65%-85%) starting from 2013. While not many banks refer about IT policy and IT plans;
- ITRM is the most reported focus area; an increasing number of banks in the sample (from 50% to 90%) referred directly to IT risk (*et similia*), starting to consider it as a specific category instead of being included under the operational risk. A relevant part of the samples' interest is devoted to the treatment phase of Risk Management, and to Business Continuity plans and to the Information security as an all;
- finally, ITINV, indicate that the most part of banks reported the IT expenditure, but it seems basically related to accounting policies instead of disclosing about investment plans. Maybe this attitude is due to the strategic and competitive relevance to IT investments and the banks' need to preserve the related programs' details.

Table 3. *Level of disclosure (Index*) and percentage** of banks disclosing IT governance items by sub-categories*

CAT SUB_CAT		2008		2009		2010		2011		2012		2013		2014		2015	
		Index	% of banks	Index	% of banks	Index	% of banks	Index	% of banks	Index	% of banks	Index	% of banks	Index	% of banks	Index	% of banks
ITRR	A. IT control roles	0,27	10%	0,27	10%	0,18	10%	0,36	20%	0,27	15%	0,18	10%	0,27	15%	0,91	25%
	B. IT operational roles	3,55	60%	4,27	75%	5,73	80%	5,18	75%	5,09	75%	6,18	70%	7,36	80%	13,18	75%
	C. IT senior management	0,91	35%	0,91	30%	0,45	20%	0,73	25%	0,91	25%	1,00	25%	1,91	40%	2,18	40%
	D. IT strategic roles	0,09	5%	0,09	5%	0,18	10%	0,09	5%	0,09	5%	0,09	5%	0,45	10%	3,18	15%
ITRP	A. IT plans/policy	0,27	15%	0,27	15%	0,45	15%	0,55	20%	0,45	20%	0,82	30%	1,18	40%	2,18	60%
	B. IT processes	2,09	50%	3,73	40%	2,73	35%	4,27	45%	3,27	50%	3,36	55%	4,55	50%	6,82	55%
	C. IT resources	2,09	65%	3,09	70%	1,73	50%	3,55	70%	4,36	60%	4,64	65%	4,09	80%	7,09	85%
	D. IT standard/ principles	1,18	25%	1,64	30%	1,36	25%	1,64	35%	1,27	30%	1,09	35%	1,82	55%	2,27	55%
ITRM	A. Identification	2,50	50%	2,93	60%	2,86	55%	3,79	70%	4,07	75%	5,71	80%	11,43	85%	12,14	90%
	B. Evaluation	0,00	-	0,07	5%	0,00	-	0,00	-	0,00	-	0,00	-	0,14	10%	1,29	30%
	C. Treatment	14,36	80%	16,57	85%	13,07	85%	17,21	95%	16,50	90%	16,57	95%	18,86	100%	25,00	95%
	D. Management	0,07	5%	0,07	5%	0,07	5%	0,07	5%	0,14	10%	0,00	-	0,71	20%	0,43	15%
ITINV	A. IT information in financial statement	4,20	70%	4,60	80%	4,80	80%	4,60	75%	4,80	80%	5,00	85%	5,20	85%	5,20	85%
	B. IT budget	0,00	-	0,20	5%	0,00	-	0,00	-	0,00	-	0,20	5%	0,20	5%	0,20	5%
	C. IT expenses	3,20	55%	3,00	50%	2,20	30%	2,60	35%	3,40	35%	2,60	25%	3,20	45%	1,80	35%
	D. IT hardware/ software	0,20	5%	0,40	10%	1,00	15%	1,00	15%	0,60	15%	0,80	20%	0,80	15%	1,00	25%

Note: * ITGF_Index calculated for each sub-categories in the sample; **Number of banks that disclose the Items by sub-categories within ITGF divided by the number of banks included in the sample.

Source: Authors' research

We than analyzed the percentage of Supervisors that enumerate the items included in ITRR, ITRP, ITRM categories (Table 4); in particular, we notice that starting from 2013, Supervisors has focused on: i) IT operational roles for ITRR; ii) IT plans/policies and IT resources for ITRP; iii) Identification and Treatment for ITRM. Comparing results between banks and Supervisors we notice a homogeneous behavior between the two groups regarding the sub-categories enumerated. This evidence allows us to verify the existence of an effective relationship between Supervisors' attitude and banks' behaviors (Q3).

Table 4. *Percentage* of Supervisors enumerating IT governance keywords*

CAT	SUB_CAT	2008	2009	2010	2011	2012	2013	2014	2015
ITRR	A. IT control roles	-	-	-	25%	-	25%	25%	25%
ITRR	B. IT operational roles	50%	25%	50%	25%	50%	75%	75%	75%
ITRR	C. IT senior management	25%	-	-	25%	50%	25%	25%	25%
ITRR	D. IT strategic roles	-	-	-	-	-	-	-	-
ITRP	A. IT plans/policy	-	-	25%	50%	-	100%	100%	100%
ITRP	B. IT processes	-	-	25%	50%	75%	100%	75%	75%
ITRP	C. IT resources	25%	25%	75%	75%	75%	75%	50%	75%
ITRP	D. IT standard/principles	-	-	-	-	-	-	-	-
ITRM	A. Identification	25%	25%	25%	25%	25%	50%	50%	100%
ITRM	B. Evaluation	-	-	-	-	-	25%	25%	50%
ITRM	C. Treatment	25%	25%	50%	25%	75%	100%	100%	100%
ITRM	D. Management	-	-	-	-	-	50%	25%	25%

Note: * Number of Supervisors, which refer about the Items of each category and sub-categories within ITGF divided by the number of Authorities considered in the study.

Source: Authors' research

To estimate the relationship between ITGF_Index for banks and Supervisors we exploit the wherewithal of panel data models. Table 5 displays the summary of panel data variables; at a first sight, we notice a higher "within" variation of the dependent variable expressed by the Standard Deviation, which means a huge bank' ITGF_Index variation over the 8 years analyzed. In model 1 (Tab. 6) we performed the two-ways panel estimation and tested for significance of individual effects: we notice that the between temporal variability (*sigma_u*) is quite high, while a higher value recorded by *sigma_e* means a great within variability in a model in which both individual and temporal heterogeneity is considered.

Table 5. *"Within" and "between" variation in panel data*

VARIABLE		MEAN	STD. DEV.	MIN	MAX	OBSERVATION	
ITGF_INDEX_BANKS (DEPENDENT VARIABLE)	OVERALL	2.50096	1.799731	0	16.95844	N =	160
	BETWEEN		.4059309	1.893936	2.740455	n =	4
	WITHIN		1.764843	-.1618002	16.79664	T =	40
ITGF_INDEX_SUPERVISORS	OVERALL	.660019	.5637494	.02849	1.823362	N =	150
	BETWEEN		.4843116	.3881766	1.42925	n =	4
	WITHIN		.4076006	-.4843305	1.443495	T =	37.5

Source: Authors' research

Using the two-way model, the causal link between the behavior of supervisors and the banks is further faded: in fact, the independent variable coefficient is not significant in this model.

Table 6. *Model 1 − Panel estimation method, FE two-way*

```
Fixed-effects (within) regression          Number of obs    =    150
Group variable: Year                       Number of groups =      8

R-sq:                                      Obs per group:
     within  = 0.5793                                 min =     15
     between = 0.7377                                 avg =   18.8
     overall = 0.5336                                 max =     20

                                           F(20,122)        =   8.40
corr(u_i, Xb)  = 0.1104                     Prob > F        = 0.0000

------------------------------------------------------------------------------
   ITGF_Index |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   IT_SUP_Tot |   .5042199   .4528599     1.11   0.268    -.3922615    1.400701
       dummy1 |  -2.896654   .5964795    -4.86   0.000    -4.077445   -1.715863
       dummy2 |  -1.828038   .5948705    -3.07   0.003    -3.005644   -.6504325
       dummy3 |  -2.640051   .5948705    -4.44   0.000    -3.817657   -1.462446
       dummy4 |  -1.983526   .7691291    -2.58   0.011    -3.506094   -.4609582
       dummy5 |   -2.35661   .5948705    -3.96   0.000    -3.534215   -1.179004
       dummy6 |  -2.834369   .5948705    -4.76   0.000    -4.011975   -1.656764
       dummy7 |    2.23852   .5948705     3.76   0.000     1.060915    3.416126
       dummy8 |  -3.091318   .7691291    -4.02   0.000    -4.613886    -1.56875
       dummy9 |  -2.351686   .5964795    -3.94   0.000    -3.532477   -1.170896
      dummy10 |  -1.257336   .7691291    -1.63   0.105    -2.779903    .2652323
      dummy11 |  -1.183505   .5964795    -1.98   0.049    -2.364295   -.0027138
      dummy12 |  -.0288961   .5931541    -0.05   0.961    -1.203104    1.145312
      dummy13 |  -2.172918   .5964795    -3.64   0.000    -3.353709    -.9921271
      dummy14 |  -2.304221   .5931541    -3.88   0.000    -3.478428   -1.130013
      dummy15 |  -2.758667   .5964795    -4.62   0.000    -3.939458   -1.577876
      dummy16 |  -1.784175   .7691291    -2.32   0.022    -3.306743   -.2616076
      dummy17 |  -2.353734   .5931541    -3.97   0.000    -3.527941   -1.179526
      dummy18 |  -1.948028   .7691291    -2.53   0.013    -3.470596   -.4254604
      dummy19 |  -2.093831   .5931541    -3.53   0.001    -3.268039    -.9196235
      dummy20 |          0  (omitted)
        _cons |    3.93556    .458944     8.58   0.000     3.027034    4.844086
-------------+----------------------------------------------------------------
      sigma_u |  .69830456
      sigma_e |  1.1863081
          rho |   .2573301   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(7, 122) = 3.75                       Prob > F = 0.0010
```

Note: Dummies correspond to banks including in the sample. Dummy20 is suppressed to avoid collinearity trap. Corr (u_i, Xb) reflects endogeneity of the explanatory variables being not equal to zero; Ftest that all u_i

Source: Authors' research

To deepen the relationship between Banks and Supervisors conduct, we decided to consider the two components of ITGF_INDEX_ SUPERVISOR. In this model (Model 2) we added the following independent variables: LogTa (logarithm of banks' total asset) as a proxy of the dimension of financial intermediaries; this for two reasons: first because in Model 1 we notice the relevance of the idiosyncratic dimension of the phenomenon. And also, because, from an economic point of view, it could be possible that greater banks are more inclined to invest in IT and then to disclose about related issues; i) ITGF_SUP_AR measured in t-1; we decided to consider the time lag 1 assuming this index could be considered as a proxy of Supervisors' moral suasion: the more Supervisors "talk" about IT related issues, the more banks are stimulated to disclose the same topics in the following years; ii) ITGF_ SUP_REG, also measured in t-1; this component may reveal the behavior of banks in response to regulatory requirements in this matter.

Table 7. *Model 2 − ITGF_Bank_Index FE estimates*

```
Fixed-effects (within) regression          Number of obs      =        130
Group variable: Years                      Number of groups   =          7

R-sq:                                      Obs per group:
     within  = 0.2690                                   min =         15
     between = 0.3062                                   avg =       18.6
     overall = 0.2607                                   max =         20

                                           F(3,120)           =      14.72
corr(u_i, Xb)  = 0.0610                     Prob > F           =     0.0000
```

ITGF_Bank	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
LogTa	1.928248	.3300119	5.84	0.000	1.274848	2.581649
ITGF_SUP_REGt_1	−.6876107	.3623297	−1.90	0.060	−1.404998	.0297768
ITGF_SUP_ARt_1	2.824193	.9657071	2.92	0.004	.9121598	4.736226
_cons	−8.523788	1.816785	−4.69	0.000	−12.1209	−4.926681
sigma_u	.73795083					
sigma_e	1.5357701					
rho	.18757878	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(6, 120) = 3.62                Prob > F = 0.0025
```

Source: Authors' research

Looking at the new estimates (Table 7), we can observe a relevant and statistically significant effect of banks' dimension of the dependent variable; and, surprisingly, the moral suasion seems to be more relevant on banks' behavior compared with regulating prescription.

In conclusion, referring to Q3 we recorded a larger dependence of ITGF_BANK_INDEX from idiosyncratic factors' than from Supervisors' attitude. The Model 2 even if characterized by a generalized lower R^2 better specify a minor dependence of ITGF_BANK_INDEX from regulatory provision.

5. Concluding remarks: key findings, limitation and future research

As far as the scope of this study is concerned, we have analyzed public corporate disclosure of IT governance practices across major EU banks. Adopting a revised descriptive framework of IT governance disclosure developed by Joshi et al (2013), we conducted a content analysis to examine the level of attention paid to IT governance issues across the time (2008-2015) and countries (Germany, Spain, France, Italy). One of the questions to which

this study sought to answer is whether this awareness has been reached before by banks or by Supervisors. On this topic seems that banks have started to be "interested" before their "custodies"; even if both have increased their attention. The following further key points arise from the analysis: i) banks, within the IT Governance Framework, seems paying more attention on IT Risk Management; ii) among the others Spanish banks included in the sample have recorded the most evident change in behaviors while Italian ones has demonstrated a more constant attention to the theme. The study contributes to the existing literature in several ways. It is intended to enrich the current understanding of IT governance in banks, focusing on the level and on the content of IT governance disclosure. Secondly, it highlighted the regulatory environment that favored IT governance practice in banks and tried to measure the intensity of this relationship. In doing so, enrich IT governance disclosure literature providing an original methodological framework based on a solid theoretical background.

The theoretical approach used in this study may well serve as a base for further analysis. The study may be replicated across the rest of EU countries using a bigger dataset; it would permit to get more significative, from a statistical point of view, results. Furthermore, regarding the analyzed countries, it would be possible to complete the normative framework with the missing provisions.

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Endnote

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INVESTMENT POLICY AND COMPANIES GROWTH PERFORMANCE IN THE FEDERATION OF BOSNIA AND HERZEGOVINA

POLITIKA INVESTIRANJA I RAST PREDUZEĆA U FEDERACIJI BOSNE I HERCEGOVINE

Abstract

There are various reasons which initiate continual and dynamic scientific research efforts in the area of capital investments on the future company performances. From the theoretical perspective, investing is inevitable process toward companies' development and long-term successful survival. The investment capital cost estimation plays a major role in addressing crucial risk-related issues but its potential provides incomplete framework to capture all challenges of the uncertain future outcomes. Despite consistent theoretical background, comprehensive research base related to this field often provides contradictory and provocative findings.

Our purpose is to investigate all-encompassing database of companies operating in the Federation of Bosnia and Herzegovina during 2008-2016. Our aim is to provide deep insight into investments implications on the representative growth performances over the relevant and extremely turbulent period. We expect to bring unshakable scientific views as the research should be exempted of the sample errors or biases. In addition, we believe that findings shall, beside scientific views enrichment, contribute in at least two other similarly important directions. First, policy makers may benefit by using them to reshape and improve investment incentives legislation and framework. Second, the implications of this research might be very useful guideline for market players in setting up investment policies in specific branches. We use Stata 13 software tool to regress investments on growth performance and apply polled cross-section data base of all companies in the Federation with unbroken operations in the research period.

Keywords: investment policy, growth, company, performance, Federation of BiH

Sažetak

Brojni su razlozi koji inspiriraju kontinuirane i dinamične istraživačke napore u području utjecaja investicija na buduće performanse preduzeća. S teorijskog aspekta investicije su neizbježan proces na putu razvoja kompanija i dugoročnog uspješnog opstanka. Proračun troška kapitala zauzima centralnu poziciju u tretmanu rizika investiranja, ali njegov potencijal ne omogućava obuhvat svih izazova koje donosi neizvjesna budućnost. Stoga, uprkos dosljednom teorijskom okviru, obuhvatna baza istraživanja u ovom području donosi kontradiktorne i provokativne rezultate.
Ovo istraživanje uzima u obzir sveobuhvatnu bazu preduzeća koja posluju u Federaciji Bosne i Hercegovine u periodu 2008-2016. Cilj nam je da omogućimo opsežan uvid u investicijske implikacije na reprezentativne performanse rasta preduzeća tokom relevantnog i veoma turbulentnog perioda. Mi očekujemo čvrste i valjane naučne rezultate s obzirom na izostanak subjektivnih ili grešaka uzorkovanja. Osim toga, vjerujemo da će saznanja, pored obogaćivanja naučnih spoznaja, doprinijeti u još najmanje dva, ništa manje značajna područja. Prvo, kreatori ekonomske politike će ova saznanja moći koristiti u preoblikovanju legislative i opsega investicijskih poticaja. Drugo, implikacije ovog istraživanja bi mogle biti veoma korisna vodilja tržišnim učesnicima u kreiranju investicijskih politika u specifičnim industrijskim granama. U ovom istraživanju, mi ćemo koristiti softverski paket Stata 13 s ciljem izvođenja regresije i utvrđivanje utjecaja investicija na performanse rasta preduzeća, a primijeniti ćemo bazu podataka svih preduzeća koja su poslovala u Federaciji BiH u periodu koji istražujemo i koja omogućava modeliranje zasnovano na složenim vremenskim serijama.

Ključne riječi: politika investiranja, rast, preduzeće, performanse, Federacija BiH

1. Introduction

Company or industry growth rate typically represents the compounded annualized rate of revenues, assets, earnings and employment growth at company or industry level. Consequently, overall economy growth remarkably depends on realized industry growth for a given timespan. Taking into account the crucial pursuit of this research, *i.e.* to investigate the impact of the investments at companies' level to their growth, it is worth pointing out

that the growth yardstick is always under specific review as it is to reflect not only short-term performance effects, but also the increase in the firm's value added in the long-term, which is the outcome of capital budgeting decisions quality.

Capital expenditures refer to important capital budgeting decisions such as land purchase, plan construction or expansion, equipment procurement or replacement, *etc*. These expenditures are in nature strategic company's decisions. Theoretically, companies undertake those investment projects that satisfy positive net present value criteria. If so, capital expenditures in the current period should be positively associated with future corporate earnings. Furthermore, the quality of corporate earnings use should be associated with company's growth.

Of course, the growth of the company is not a goal *per se*. Regardless of the size, expanding and growing companies are indeed the creators of new jobs and sound economy. The need to attract capital today, improve the prospects to attract it in the future and convince potential investors in company's future growth potential, an important implication for companies and the overall economy of the country. Therefore, government may use investment incentives to encourage investments that generate multiplied effects and benefits far beyond the investor expectations. Investment incentives may be applicable to technology improvement, infrastructure projects, job creating investment opportunities in areas with high unemployment, investments in environmentally friendly technology *etc*. Such investments are designed to boost positive, often long-term spillover effects on the economy making it easier to justify spending on investment incentives.

2. Theoretical framework and review of previous research

Company growth is an evidence of the return of the entrepreneur's investment and self-fulfillment for companies. A growth company is any company whose business generates significant positive cash flows or earnings, which increase at significantly faster rates than the overall economy. A growth company tends to have very profitable reinvestment opportunities for its own retained earnings. Company growth has been one of most widely studied topics in economic literature. Several arguments highlight the crucial importance of this field. First of all, it's related very closely to firm survival. Therefore, company growth has consequences for employment. Futhermore, one of

the factores behind the importance of firm growth is its effect on economic growth. Finally, company growth has practical consequences for policy-makers' decisions.

The studies of company growth are heterogeneous in nature. The variation in measures used in organizational growth studies, the variation in growth indicators, the variation in the processes by which company growth occurs (organic *vs.* acquisition), and the variation in the characteristics of companies and their environments are all important features of organizational growth as a phenomenon. Therefore, the choice of absolute or relative growth is important for the relationship between size and anything correlated with size and growth. Absolute measures tend to ascribe higher growth to larger companies whereas smaller companies more easily reach impressive growth in percentage terms.

Based on extensive reviews of the literature Delmar (1997, p. 203) presented lists of possible growth indicators: assets, employment, market share, physical output, profits, and sales. Therefore, Davidsson and Wiklund (2006, p. 54) have argued that sales are a highly suitable indicator across different conceptualizations of the company. The growth of activities, ultimately, may be captured by respective sales increase performance. Sales activities are in the closest connection to the market and their growth reflect an increased demand for the products and services provided to the market. While assets and employment may be valuable inputs to any company operation, sales reflect its ultimate output. For business managers, sales growth has been considered one of the most important goals (Brush, Bromiley & Hendrickx, 2000, p. 456).

Further, Davidsson, Steffens, and Fitzsimmons (2009, p. 339) claimed that companies with high growth and low profit (*i.e.* HG-LP, growth-focused companies, or GROWTH) are more likely to reach a state of low growth and low profit (*i.e.* LG-LP or POOR) when compared to low growth, high profit companies (*i.e.* LG-HP, profit-focused companies or PROFIT). In addition, they stated that profit-focused companies are more likely than growth-focused to transition to a state of high growth and high profit (*i.e.* HG-HP or STAR). Authors claimed that profit-focused companies are in a better position to reach profitable growth in the future than growth-focused companies.

Previous empirical results on the association between current capital expenditures and corporate earnings as potential for corporate growth are

not conclusive. On the one hand, researchers have documented a positive association between capital expenditures and current corporate earnings.

Callen, Livnat, and Rayan (1998, p. 22) find that companies with larger ratios of current capital expenditures to the four-year average capital expenditure are associated with positive current-period abnormal returns. On the other hand, the association between current capital expenditures and future earnings is less conclusive.

Echevarria (1998, p. 23) examines the financial performance of Fortune 500 industrial companies. Although these companies invested millions of dollars to upgrade manufacturing and operating facilities, the financial performance of these companies varies widely across the sample companies. Specifically, only the top 25 per cent of the Fortune 500 industrial companies were able to obtain significantly increased profitability in the performance period.

Kim (2001, p. 54) finds that winner companies exhibit a positive association between capital expenditures and future earnings while loser companies exhibit a negative association between capital expenditures and future earnings. When losers are excluded from the sample, Kim finds that capital expenditures generally provide positive information about future earnings. Furthermore, Ching-Hai, Hsiang-Lan, and Yen-Sheng (2006, p. 859) have grouped companies into eight portfolios ranked by capital investment ratio estimated from the investment period. The sample period of 11 years is divided into capital investment period and performance period. Corporate earnings in the performance period for the eight portfolios are examined to see if any positive association exists. Regressions are then estimated to test the relationship between capital expenditures and corporate earnings. The results indicate a significantly positive association between capital expenditures and future corporate earnings even after controlling for current corporate earnings.

Therefore, Oliveira and Fortunato (2017, p. 626) have studied the effects of R&D activities and investment, both physical and R&D on the growth of Portuguese companies, by considering a dynamic firm growth model with serial correlation. The results indicate that physical investment has a positive effect on the growth of companies. For smaller and high-tech companies this finding is even more noticeable. The investment in physical capital is more relevant for smaller than larger companies.

As well, Lee (2010, p. 288) has focused on the dual role of R&D – knowledge generation and the technological-competence enhancing effect of R&D – and its implication for the endogenous evolution of R&D productivity and the pattern of firm growth. In a negative growth–age relationship is observed for companies with low technological-competence-enhancing capability, while a positive differential effect is observed for companies with high technological-competence-enhancing capability. In addition, the empirical results are supportive of, at least indirectly, the existence of a knowledge threshold by showing that companies facing intense technological competition and thus a high knowledge threshold exhibit a divergent growth pattern.

Vithessonthi (2016, p. 402) has investigated whether companies that invest more have higher degrees of internationalization and whether companies with higher degrees of internationalization perform better than those with lower degrees of internationalization. The resultas indicate that capital investment negatively affects the level of internationalization but has a positive effect on foreign sales growth.

Considering the goal of this research we candidate capital investment proxies to be included in our empirical tests from a list of representative studies in the finance and accounting literature. The list is shown in Table 1.

Table 1. *The list of capital investment proxies and associated studies*

CAPITAL INVESTMET PROXIES	SOURCES
Capital expenditure/PPE	Aggarwal & Samwick, 2006
Capital expenditure/Total Assets	Blanchard, Lopez-de-Silar.es & Shleifer, 1994
Capital expenditure/Sales	Anderson & Garcia-Feijoo, 2005; Titman *et al.*, 2004
R&D/Total Assets	Gaver & Gaver, 1993
Growth in inventory	Kashyap, Lamont & Stein, 1994
Growth in capital expenditure	Lev & Thiagarajan, 1993; Callen *et al.*, 1996
Change in long-term assets deflated by average total assets	Hsiao & Li, 2011

Source: Hsiao & Li, 2013, p. 102

In relation to the main focus of this research and considering the previous research options and findings we hypothesize the relation between capital investments and company growth. Theoretically certain positive relation between these variables is expected, but earlier findings reveal no consistent conclusions thereof. This implies further researches of the subject and opposing theoretical expectations to the real life findings. Consequently, we have developed hypothesis about company growth and capital expenditures over time:

There is a significantly positive association between capital expenditures in curent period and future companies growth.

3. Research methodology and empirical results

In order to conduct a comprehensive approach, we use the entire population of the companies whose financial reports were delivered to the tax authorities, thus companies with unbroken business activities. Companies went bankrupt or otherwise not delivering respective financial reports were excluded of the research. Therefore, our data base is strongly balanced and structured for all encompassing panel structure regression.

In relation to the subject matter, we deploy dependent variable as a company growth, indicated by logarithmic value of sales which reflects percentage differences of sales in consecutive years under consideration. Sales income is a typical yardstick of the company growth used in many researches.

$$LogPoP = log(PoP)$$

As already pointed out our major focus is on the relation between investment and company growth. In this regard the variable of investments into the company is represented as logarithmic value of capital expenditures, *i.e.*

$$LogCPX = log(CAPEX)$$

Capital expenditure is calculated as the difference between fixed assets at the end of two consecutive years corrected by the depreciation being reported during the period.

In both cases, zero values are omitted to match real percentage relation between capital expenditures and level of sales as well as negative values of capital expenditures calculation throughout the entire population of the companies in the period 2008-2016.

Several variables are involved in the model to be controlled for such as profitability (represented by ROI and EBITDA/Sales), liquidity (current ratio), leverage (equity/Assets), company size (dummy variable) and profit/loss classification (dummy variable). The model specification is as follows:

$$LogPoP = \beta\_0 + \beta\_1 \; LogCPX + \beta\_2 \; ROI + \beta\_3 \; DummyVel +$$
$$\beta\_4 \; DummyProf + \beta\_5 \; Lev + \beta\_6 \; TO + \beta\_7 \; EBITDAPoP + \mathcal{E}$$

Whereby:

LogPoP – logarithmic value of sales income;
LogCPX – logarithmic value of capital expenditures;
ROI – return on investment;
DummyVel – dummy variable representing larger (1) and small (0) companies;
DummyProf – dummy variable, representing companies with profit (1) and loss (0) generation;
Lev – leverage measured as the ration of equity over company assets;
TO – current ratio measured as the ratio of current assets over short-term liabilities;
EBITDAPoP – expresses the ratio of EBITDA over sales income and;
E – error term (other variables influencing company sales growth not specified in the model).

We used fixed affects regression of the panel data structure as Hausman test suggested this choice. In addition, the result of the F-test conclusively suggests the validity of the model specified and the structure of the variables used for the relation and controlling purpose. The results of our multi variant regression are presented in the following table:

Table 2. *Fixed affect model regression output*

```
Fixed-effects (within) regression          Number of obs      =      64738
Group variable: Rbrpr                      Number of groups   =      16965

R-sq:  within  = 0.1571                     Obs per group: min =          1
       between = 0.5691                                    avg =        3.8
       overall = 0.5203                                    max =          6

                                            F(7,47766)         =    1271.45
corr(u_i, Xb)  = 0.6093                     Prob > F           =     0.0000

-------------------------------------------------------------------------------
     LogPoP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
------------+------------------------------------------------------------------
     LogCPX |   .0334423   .0009854    33.94   0.000     .0315109    .0353737
        ROI |   .0028512   .0000793    35.97   0.000     .0026958    .0030066
   DummyVel |   .2695618   .0057198    47.13   0.000     .2583509    .2807727
  DummyProf |   .1285607   .0037348    34.42   0.000     .1212405    .1358809
        Lev |   .0049116   .0082962     0.59   0.554    -.011349     .0211723
         TO |  -.0000235   .0000214    -1.10   0.273    -.0000655    .0000185
  EBITDAPoP |  -3.97e-09   3.10e-09   -12.81   0.000    -4.58e-08   -3.36e-08
      _cons |   5.422935   .0061644   879.72   0.000     5.410852    5.435017
------------+------------------------------------------------------------------
    sigma_u |  .67488543
    sigma_e |  .20190751
        rho |  .91784844   (fraction of variance due to u_i)
-------------------------------------------------------------------------------
F test that all u_i=0:     F(16964, 47766) =    21.04         Prob > F = 0.0000
```

Source: Authors' calculation/ Stata 13 dynamic panel linear model fixed affect calculation

Model explains respectable 52.03% overall variations among the population members with strong emphasis on between variations. It does not reveal sound explanation of within variations (only 15.7%) and this finding looks attractive for further research of the topic.

Coefficient rho does reveal highly remarkable intra-class correlation and significant correlation of the error terms to the predictors. Both findings are to be attributed to the fact that in this case it is a population used instead of samples and findings are exempted of any sampling errors and associated risks.

In order to confirm the validity of fixed affects model applied here, we use the direct test of its necessity. This is done by testing the null hypothesis of all time dummy variables.

```
      (1)   2009.year = 0
      (2)   2010.year = 0
      (3)   2011.year = 0
      (4)   2012.year = 0
      (5)   2013.year = 0
      (6)   2014.year = 0
      (7)   2015.year = 0
      (8)   2016.year = 0

    F(5,47761) = 87.52
     Prob > F =0.0000
```

Since Prob>F is less than 0.05 this infers the application of the time fixed effect as inevitable. As Hausman test indicated clearly the preference of the fixed effects over the random effects model, we need no further testing of the random effects application in this case.

The outcome of the fixed effects application does infer the significance of the capital expenditures on the sales growth. Specifically, 1% change of the capital expenditures implies 3.3% change on the sales growth. The percentage change relation arises from the use of logarithmic values of both dependent and focused independent variable.

All other controlled variables, other than leverage and liquidity, express strong statistical significance in relation to the sales growth in percentage changes. More specifically, dummy variables related to the size and profit/ loss classification of the companies are with stronger essential influence than profitability ratio indicators (EBITDA/Sales and ROI).

The findings of this research are provocative. On one hand, we have almost 65 thousand observations, thus very powerful base to infer. On the other, the findings reveal statistically valid and very convincing impact of the investments on the companies and industries growth. This further requires active support of the investment policies across companies and industries to underpin the growth as it consequently creates larger GDP and reduce the unemployment rate.

4. Conclusions and recommendations

The findings of this research reveal statistically valid and very convincing impact of the investments on the companies and industries growth. Specifically 1% change of the capital expenditures implies 3.3% change on the sales growth. Model explains respectable 52.03% overall variations among the population members with strong emphasis on between variations with almost 17 thousand companies under research.

Furthermore, it is logical that companies and industries growth lead to larger GDP and reduce the unemployment rate. Considering the findings, it is necessary for governments to create the comprehensive and sound basis for investment incentives. Investment incentives policy should balance the higher revenues and social benefits from possibly increased investments with the indirect costs of incentives and the revenue losses from incentives allocated for incentive purposes.

Investment incentive measures for investment projects need to be regulated by the certain acts on investment or capital projects promotions. This regulation refers to investment projects in manufacturing and processing activities, development and innovation activities, business support activities, high added value services.

Therefore, we emphasize the need to create a very attractive legal environment for investments, including tax release of reinvested profits in activities that create added value, technology import duty, reinvestment profits incentives for additional employment in a specific industries such as the production and processing, *etc*. General guide for policymakers is strong relation between incentives and revenue rises *i.e.* added value increase. This can be arranged by strict and comprehensive tax reduction and exemption procedures pertaining to the specific adding value industries and clear conditions to be met in each considered case.

Finally, for further research cases we recommend a more detailed review of industry specifics as well as more variables added to the model in an attempt to increase the model determination and explanation of growth out of current error term component.

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THE ROLE OF CANDIDATE RECRUITMENT IN THE PROCESS OF HUMAN RESOURCE MANAGEMENT IN THE MICROCREDIT SECTOR OF THE FEDERATION OF BOSNIA AND HERZEGOVINA

ULOGA REGRUTOVANJA KANDIDATA U PROCESU MENADŽMENTA LJUDSKIH RESURSA U MIKROKREDITNOM SEKTORU FEDERACIJE BOSNE I HERCEGOVINE

Abstract

Considering the modern business orientation that regards human resources as one of the key driving forces of microcredit institutions, attracting, recruiting and selecting candidates for vacant positions is becoming one of the most important functions of human resource management in these institutions. These contemporary trends and the fact that they operate in a highly changing social, economic, and political environment, have encouraged microcredit organizations in the Federation of Bosnia and Herzegovina to give greater importance to human resources in the process of overcoming the challenges they face. The aim of this paper is to investigate the role of recruitment in the human resources management process in the field of microcredit sector in the Federation of

Bosnia and Herzegovina and which approaches of recruitment of candidates to the full extent ensure the success of this process. A survey questionnaire was used as the basic instrument to collect data for purpose of the empirical part of the research. Empirical research included three microcredit foundations with headquarters in the Federation of Bosnia and Herzegovina (the first three by the value of assets and gross portfolios), which involves 54 surveyed managers and employees in the human resources department, who have experience in the process of recruiting candidates as well as monitoring and evaluating their work performance after employment. Based on the obtained results, it was concluded that the recruitment of candidates (especially if appropriate approaches are applied) takes an important role in the process of managing human resources in microcredit institutions.

Keywords: process of human resource management, employee recruitment, microcredit institutions, Federation of Bosnia and Herzegovina

JEL: G21, M50

Sažetak

S obzirom na savremenu poslovnu orijentaciju prema kojoj se na ljudske resurse gleda kao na jednu od ključnih pokretačkih snaga mikrokreditnih institucija, privlačenje, regrutovanje i izbor kandidata za slobodna radna mjesta postaje jedno od ključnih područja menadžmenta ljudskih resursa u ovim institucijama. Ove savremene tendencije te činjenica da djeluju u izrazito promjenljivom društvenom, ekonomskom i političkom okruženju, podstakle su i mikrokreditne organizacije u Federaciji Bosne i Hercegovine da pridaju veći značaj ljudskim resursima u procesu savladavanja izazova s kojima se susreću. Cilj ovog rada je da se istraži kakva je uloga regrutovanja u procesu menadžmenta ljudskih resursa u oblasti mikrokreditnog sektora u Federaciji Bosne i Hercegovine te koji pristupi regrutovanju kandidata u najvećoj mjeri osiguravaju uspješnost ovog procesa. Anketni upitnik je korišten kao osnovni instrument za prikupljanje podataka za potrebe empirijskog dijela istraživanja. Empirijskim istraživanjem obuhvaćene su tri mikrokreditne fondacije sa sjedištem u Federaciji Bosne i Hercegovine (prve tri po iznosu aktive i bruto portfolija), pri čemu je anketiranjem obuhvaćeno 54 menadžera i zaposlenika u odjelu za ljudske resurse, koji imaju iskustvo u procesu regrutovanja kandidata, ali i u praćenju i ocjenjivanju njihove radne uspješnosti nakon zapošljavanja. Na osnovu dobivenih rezultata, došlo se do zaključka da regrutovanje kandidata (posebno ako se primjenjuju odgovarajući pristupi) zauzima značajnu ulogu u procesu menadžmenta ljudskih resursa u mikrokreditnim institucijama.

Ključne riječi: proces menadžmenta ljudskih resursa, regrutovanje kandidata, mikrokreditne institucije, Federacija Bosne i Hercegovine

JEL: G21, M50

1. Introduction

Human resource development and management is the area that has undergone significant evolution over the past few decades. The human factor ceases to be a marginalized resource, as it did during the 20th century, and becomes the main source of new value. This new business orientation is based on the assumption that at the time of hyper-competitiveness, the only possession of unique knowledge and specific skills is not something that can be easily copied or imitated by competitors; therefore, it represents substantial support for building competitive advantages in the global marketplace (Buchholtz, Ribbens & Houle, 2003; Hatch & Dyer, 2004; Kor & Leblebici, 2005).

In line with modern business orientation, in which the employees are the main resource and essential power of the organization, candidate attracting, recruiting, and selecting becomes one of the key areas of human resource management. As success of modern companies depends largely on the competencies, knowledge and skills of employees, attracting high-quality and capable people at least possible costs, is one of the primary goals of managers. Acquisition/recruitment is the process of attracting candidates for vacancies that have the knowledge, abilities, skills, and qualities needed for successful performance and goal achievement (Bahtijarević-Šiber, 1999). This phase of the human resource management process is closely related to all other and, to a large extent, the success of the overall human resource management process in an enterprise depends on it.

Namely, the recruitment of candidates is preceded by job analysis and human resource planning and, hence, the recruitment of candidates must be carried out in accordance with the results, requirements, and objectives that represent the outcomes of these previously implemented activities. On the other hand, the implementation of the recruitment process is a significant determinant for implementation success of next stages in the human resource management process, i.e. candidate selection (efficient and effective candidate recruitment process reduces costs and fosters the candidate selection process), employee training and development (if candidates are recruited according to their company's requirements in terms of their knowledge, competencies, and skills, the training and development costs of employees will be lower and the success of this process will be at a higher level), job performance management (if the recruitment process is adequately carried out, the employee's performance will be at a higher level), employee retention (adequate implementation of

the recruitment process reduces fluctuation of employees to an optimal level, which is positively reflected on the business performance of the company), *etc*.

Modern theory and practice of human resource management distinguishes two orientations when it comes to the recruitment process − traditional recruitment of candidates and recruitment of candidates based on realistic job description. The first orientation is based on the assumption that the recruitment process will be more successful if it ensures the attractiveness of as many candidates as possible, while the other orientation is founded on the assumption that the recruitment process based on planned and realistic job description is significantly more efficient and effective (taking into account the impact on other phases and the final outcome of the human resource management process). In addition, modern companies apply internal and external approaches to recruitment of candidates. An internal approach is based on the acquisition of candidates from internal sources, and its purpose is to provide the opportunity for existing employees to change a job or come to jobs for which they are considered to be qualified and interested. An external approach is based on the assumption that high quality candidates are found outside of the company and the company needs to attract them. This approach implies a search for candidates on the external labour market (Bogićević Milikić, 2011).

The rapid growth and development of the financial market as well as the turbulent social, economic, and political environment in which they operate, imposes on the microcredit organizations in the Federation of Bosnia and Herzegovina (BiH Federation) the need to seek new ways to achieve a competitive advantage. These organizations are increasingly recognizing the importance of human resources in the process of overcoming the challenges they face, which is manifested in the organization of human resource departments and the increasing attention to the process of human resource management. Business practice, however, shows that creation of an approach to recruitment of candidates is not in a planned way and, therefore, it does not adequately address the vision, mission, strategy, and business policy of a microcredit organization as well as the advantages, disadvantages, and appropriateness of individual approaches to recruiting candidates in the context of organizational needs and specificity. All this results in an inadequate selection of employees, which has multiple negative repercussions on the different business dimensions of microcredit organizations.

Considering the contemporary business conditions and the specific challenges faced by microcredit organizations of the BiH Federation and the importance of recruiting candidates in the process of human resource management and, therefore, the business performance of these organizations, it seems justifiable to ask the following research question: "What are the dominant approaches to recruitment in microcredit institutions in the BiH Federation and what is their role in the process of human resource management?"

2. Literature review

Hulme and Mosley (1997) described the principle of microfinance focussing on equipping the poor people to take an active role in their lives economically. This is accomplished by microfinance institutions through providing financial and technical support to poor people, in the form of products and services that encourage enterprise development. While these offered products and services meet the evolving needs of clients and can be life altering for the under-privileged or poor clients, sustainability and profitability of the microcredit institutions depends on providing quality customers service, which builds client loyalty and increases profits (Toindepi, 2016).

Despite the fact that personnel of poverty oriented microfinance institutions play an important role, in the microfinance literature little is known about its staff recruiting processes and studies associated with human resources management in the institutions are rather scarce (Pinz & Helming, 2015). Additionally, specific information regarding the preferences of microfinance institutions in their recruitment process, whether they prefer internal or external recruitment of personnel to enhance customer service and build client loyalty, was not found in the related literature.

Similar to customers service and client loyalty impacting the profits (Toindepi, 2016), the few studies concerned with human resources management in microfinance institutions revealed that well-trained, dedicated staff and a good incentive system contribute to the success of microfinance institutions (Churchill, 1997; Bhatt & Thorat, 2001; Hartungi, 2007), while other studies emphasized that financial performance is influenced by staff costs (Chaves & Gonzalez-Vega, 1996; Hamed, 2007). In addition, studies examining performance of microcredit institutions highlighted the need for careful staff recruitment and training to reach the poor (Buechler, 1993; Copestake, 2007; Seibel & Torres, 1999). The noteworthy study on thiss topic by Chirwa *et*

al. (1999) elucidated the importance of qualified personnel. However, as indicated previously, these studies do not analyze the recruitment process and personnel layoffs were not carried out.

Siwale's study (2016) of the factors which contribute to the loan officers' effectiveness as key actors in the field of microfinance had implications for delivery of financial services at the "bottom of the Pyramid" (Prahalad, 2005) and for policies towards loan officers' recruitment and retention. In that regard, microfinance itself has been promoted as a tool to empower female clients; yet, the presence of women in staff and management positions is not reflective of the client base. Some microcredit institutions in Pakistan and South Asia have, however, had an explicit recruitment policy for greater female representation in their workforces and empowerment of women clients. Moreover, microcredit institutions' managers need to recognise that sustainable success depends upon careful attention to employee retention and capability. Marginalising loan officers' experiences could stifle their tacit knowledge, resulting in reduced numbers of poor people accessing credit and other financial services. The findings of the study also pointed to the need for management to be socially responsible to their employees and consider work policies that are sensitive to specific work environments to partly address the issue of female underrepresentation.

Furthermore, Nwachukwu and Chladková (2017) have examined the association between selected human resource management practices and employee satisfaction in microfinance banks, which contribute to the growth and development of businesses in both developed and emerging markets. The results have revealed that human resource management practices have positive impact on employee satisfaction in the banks operating in Nigeria. This means that, training and development, employee compensation, human resource planning, and work environment are all greatly contributing to employees' job satisfaction and happiness, which in turn improves productivity and profitability as well as minimizes employee turnover.

3. Theoretical background and hypothesis

Recruitment of candidates is the process of attracting qualified candidates in such numbers that will enable the organization with successful personnel staffing. This human resource management activity links human resources planning, on the one hand, and selection of candidates, on the other. The three

ways to obtain candidates from the inside are advertising, recommendations by direct managers, and information and suggestions by the human resource department (Bahtijarević-Šiber, 1999). Internal advertising is one of the most common ways of securing employment within an enterprise and can be done in a variety of ways, from a more classic advertising model through a bulletin board or an internal bulletin to some more modern ways based on information-communication technologies. Since managers provide meaningful information about the employees they directly manage, they play an important role in the internal recruitment process, as they, on the one hand, can direct employees to new jobs, and, on the other hand, give recommendation when choosing candidates. The role of the human resource department is very important when it comes to internal recruitment of personnel, considering that on the basis of monitoring and planning of individual career development of employees', future personnel staffing can be planned. The external recruitment approach is conducted through advertising (daily, weekly, and specialized newspapers and magazines, television, radio, Internet, *etc*.), employment agencies (state employment agencies, private consulting agencies for recruitment and selection/head hunters, temporary employment agencies, agencies for recruiting mangers, *etc*.), schools and colleges (scholarships and/or temporary engagement of pupils and students), affirmative recruitment, informal methods (recommendations of existing employees, recruitment of former employees, self-initiated reporting of candidate, *etc*.).

In most BiH companies, the human resource function is still underdeveloped and is often identifiable with administrative and technical tasks performed within personnel services. The microcredit sector of the BiH Federation consists of microcredit organizations that operate as microcredit foundations or microcredit companies. It is about organizations that were formed at the end of the 90s of the 20th century and experienced their full development only in the last ten years. The fact that microcredit organizations were founded by foreign humanitarian organizations and they were not faced with the problems generated by the process of ownership change, influenced it, so that from the very beginning of its development, human resource management was treated as one of the key managerial functions. This was especially reflected in the orientation towards continuous education of staff and employment of candidates with different knowledge and skills (*e.g.* lawyers, economists, psychologists, *etc*.). The microcredit sector in the BiH Federation has 12 microcredit organizations, 11 of which perform their activity as microcredit foundations and one as a microcredit company. Total number of employees

in the microcredit sector as at 31/12/2016 was 1,251. Considering the series of specificities of this sector, it is important to identify the methods and ways used to conduct recruitment of personnel as well as to examine the management's stances on the strengths and weaknesses of the methods used with regard to performance of the candidates who are employed. Recent trends in the reorganization of the microcredit sector have been noted through the establishment of commercial banks and insurance companies, which places microcredit organizations before serious challenges.

Taking all of the previously stated into consideration, it is clear that significant attention must be paid to human resource management, especially to recruitment of quality candidates, in these organizations, which also determines the following hypothesis of research: "Recruitment of candidates has an important role in the process of human resource management in the field of microcredit sector in the BiH Federation, where the application of appropriate approaches to recruitment of candidates significantly influences the success of this process".

4. Methodology of the empirical research

The overall goal of the empirical research, whose results will be presented, interpreted and analyzed in the continuation of this paper, concerned with the identification of the role of recruitment of candidates in the entire process of human resource management in the microcredit sector of the BiH Federation. In doing so, a special research focus was on identifying recruitment approaches and methods that ensure success to the fullest extent of the process in managing human resources, when it comes to this type of financial institution. As the basic instrument for collecting data for the purpose of the empirical part of research (field research), a survey questionnaire was used. The questionnaire is divided into logical units, which are compatible with the content elements of the subject research. Empirical research included three microcredit foundations based in the BiH Federation, which, according to the data available in the Report of the Banking Agency of the BiH on 31/12/2016 take the first three places when it comes to the value of assets and gross portfolios. The survey included 54 managers and employees in the human resource department, who have experience in the recruitment of candidate process, as well as in monitoring and evaluating their post-employment performance. The data collected were processed using a software package for statistical processing of quantitative data in social research (SPSS).

5. Results and discussion

The results of empirical research have shown that microcredit organizations recruit candidates for vacant posts, both internally and externally. Attitudes of the respondents are divided when it comes to the advantages and disadvantages of the internal recruitment process of the candidates and their importance in the overall human resource management process (see Chart 1). Respondents assessed that by using internal recruitment sources builds employer's image/reputation, which enables the promotion of employees and takes care of their needs, as well as that internal recruitment positively impacts motivation and job satisfaction, given that employees are provided the opportunity for promotion. By their agreement, the respondents confirmed that internal recruitment ensures effects of previous investments in training and employee development, which is more efficient for the organization as it, at the same time, has a positive impact on the performance of employees, but also ensures the success of the entire human resources management process. Interestingly, the largest percentage of respondents somewhat agreed with the claim that internal recruitment ensures quality filling of vacancies because the organization is better acquainted with the knowledge, competencies, and skills of internal candidates, and that employee's perception that the organization takes care of their needs is ensured by affirmation of internal recruitment.

The results of the conducted empirical research showed existence of negative characteristics of internal recruitment – internal recruitment creates conflicts that may arise due to competitive interests and unfulfilled expectations of employees in internal recruitment, and which can certainly be negatively reflected on the motivation of employees and the social atmosphere at work. It is also to an extent confirmed that the use of internal recruitment can lead to prevention of positive changes in the organization as well as "chocking" of new ideas and closeness of the organization. In line with expectations, it has been confirmed that internal advertising for vacant posts is considered a more transparent and equitable way of conducting internal recruitment than the recommendation of the competent manager or the proposal of the human resource department.
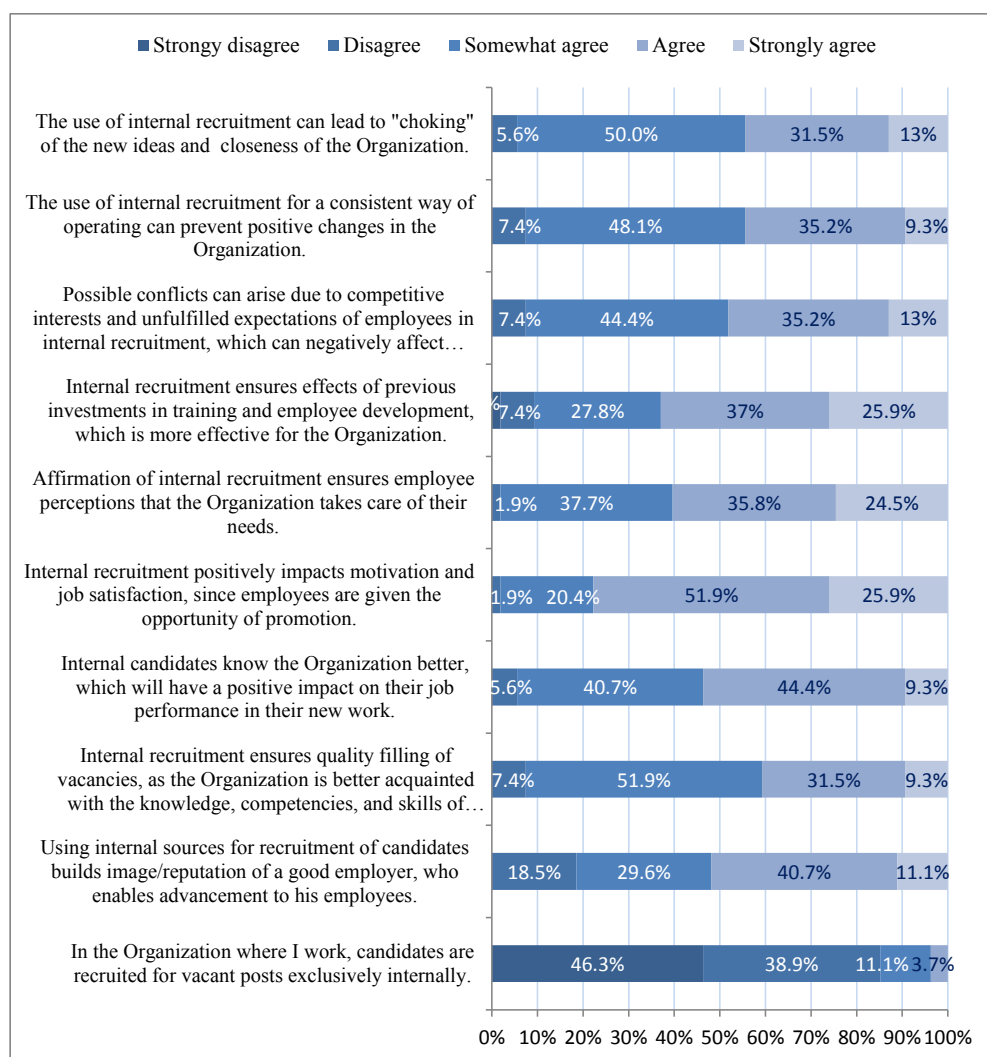
Chart 1. *Characteristics of internal recruitment of candidates in the microcredit sector of the BiH Federation*

Source: Authors' research

The results of empirical research also have shown that the practice of microcredit organizations is to recruit external candidates only if it is not possible to obtain an internally appropriate person for a vacant post (see Chart 2). Respondents confirmed that the key advantage of external recruitment is access a much larger talent pool, bringing new ideas and innovations into the organization. On the basis of empirical research, what is recognized in microcredit organizations as a negative characteristic of external recruitment concerns extremely high costs of

recruiting new employees by external approach, and the longer period required for socialization and orientation of new employees.
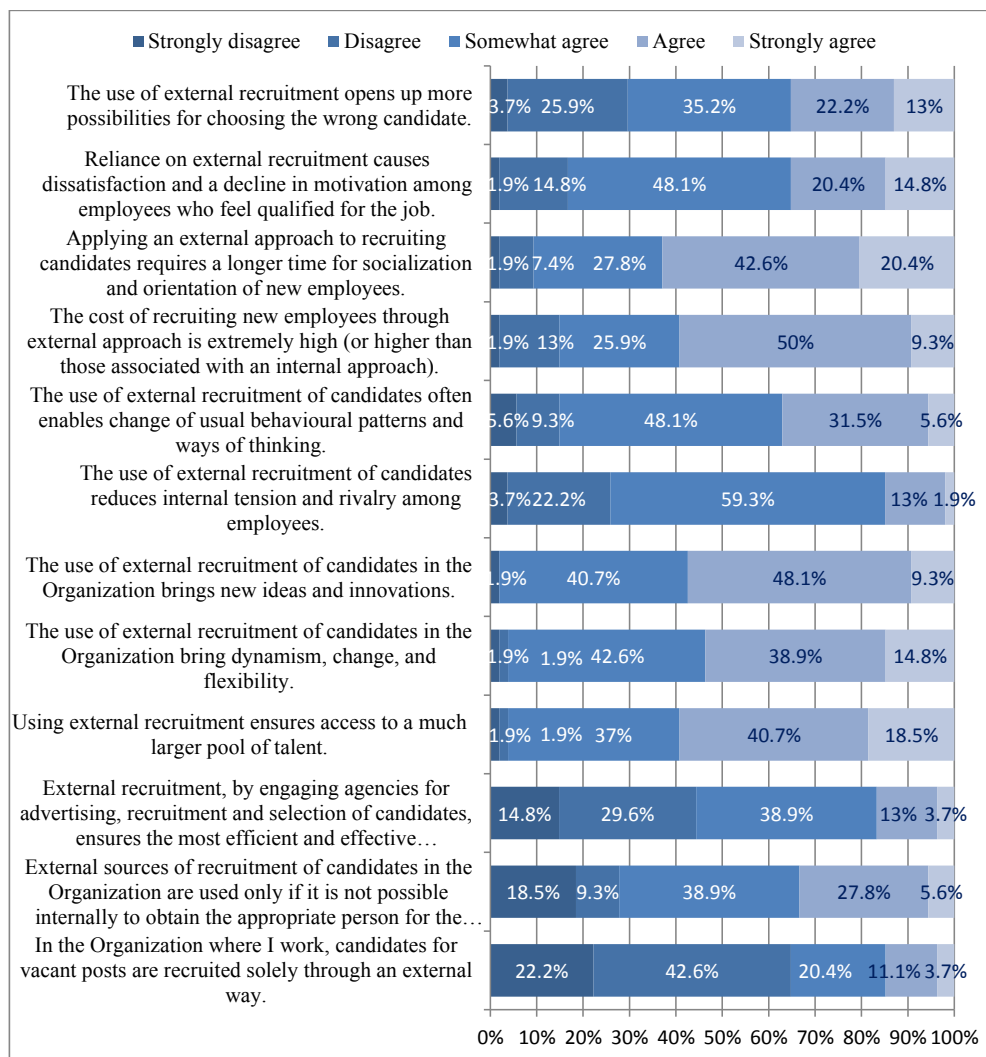
Chart 2. *Characteristics of external recruitment of candidates in the microcredit sector of the BiH Federation*

Source: Authors' research

It is important to emphasize that the majority of respondents have somewhat agreed that through the engagement of advertising agencies recruitment and selection of candidates, the most efficient and effective human resource management is ensured, and that the use of external recruitment of candidates

into the organization brings in dynamism, change, and flexibility, which reduces internal tension and rivalries (see Table 1).

Table 1. *Impact of candidate recruitment on other human resource management activities*

	Strongly disagree	Dis-agree	Some-what agree	Agree	Strongly agree		
	%	%	%	%	%	χ^2	p*
Recruitment of candidates in the Organization is always based on a previously defined human resource plan.	0%	1.9%	40.7%	46.3%	11.1%	30.89	0
The success of selection of a candidate directly depends on the quality of the candidate's recruitment process.	0%	3.7%	22.2%	51.9%	22.2%	25.70	0
Recruitment through advertising facilitates and fosters to the fullest extent the selection process of candidates.	0%	5.6%	25.9%	63%	5.6%	47.48	0
Recruitment through state employment agencies facilitates and fosters to the fullest extent the selection process of candidates.	5.6%	46.3%	35.2%	13%	0%	23.33	0
Recruitment through private employment agencies facilitates and fosters to the fullest extent the selection process of candidates.	5.6%	38.9%	40.7%	14.8%	0%	19.93	0
Recruiting through educational institutions facilitates and fosters to the fullest extent the selection process of candidates.	1.9%	33.3%	48.1%	16.7%	0%	26.15	0
Internal recruiting of candidates facilitates and fosters to the fullest extent the selection process of candidates.	1.9%	7.4%	50%	33.3%	7.4%	46.56	0
The process of socialization and orientation of the newly employed is more lengthy and complex when candidates are acquired through an external way.	0%	7.4%	31.5%	50%	11.1%	25.26	0
The process of training and development of employees is more time-consuming and cost-demanding when candidates are acquired through an external way.	0%	11.1%	31.5%	42.6%	14.8%	14	0.003
Work performance of employees is at a higher level if they are recruited through an external way.	5.6%	38.9%	44.4%	11.1%	0%	24.67	0
The degree of employee retention (leaving employment - voluntary or dismissal) is at a lower level if internal recruitment is done.	0%	20.4%	31.5%	42.6%	5.6%	16.22	0.001
The degree of absenteeism (absence from work-sick leave, job marking, *etc.*) is higher if external candidates are recruited.	9.3%	48.1%	33.3%	7.4%	1.9%	42.48	0

Note: Statistically significant at risk of 5%

Source: Authors' research

The results of the empirical research show that advertising for vacant positions is most often used to recruit candidates, since through advertisement information about the organization and workplace becomes available to a wide target group as well as that the selection of appropriate media for advertising significantly affects the success of candidate recruitment. Based on the examination of the respondents' attitudes, we have come to the conclusion that besides advertising for recruitment of candidates, the services of state employment agencies are often used as well as that participation in a state program for subsidizing employment ensures benefits to the organization. Recruitment of candidates for vacant positions through private employment agencies is not represented in the recruitment process in microcredit organizations, as they generate high costs for the organization. Based on the conducted research we have come to the conclusion that cooperation with educational institutions is not sufficiently represented when it comes to recruiting candidates for vacancies in microcredit organizations, and that respondents consider recruitment of trainees only as a somewhat effective and efficient way of acquiring personnel.

6. Concluding remarks

The emergence of microcredit organizations in the BiH Federation relates to the post-war period and was closely linked to international humanitarian programs designed to support war-affected populations. Considering the specific nature of the microcredit sector in this area as well as the more present tendencies towards its reorganization, we have come to the conclusion that considerable attention has to be paid to the management of human resources as well as the recruitment of quality candidates. Namely, when we take into consideration the numerous challenges that the microcredit sector faces, investment in human capital and employees becomes one of the key strategic priorities, which implementation contributes to building and advancing competitive advantages of organizations in the sector.

The primary focus of the research was on the recruitment of candidates as one of the phases of human resource management process, which largely depends on the success of the overall human resource management process, which is confirmed by the results of the conducted empirical research. Based on the interpretation of the obtained results of the empirical research, it can be concluded that the research hypothesis is accepted, that is, recruitment of candidates has an important role in the process of human resource management

in the field of microcredit sector in the BiH Federation, where the application of appropriate approaches to recruitment of candidates significantly influences the success of this process. The results of the empirical research show that microcredit organizations in the BiH Federation, when recruiting candidates, rely on internal and external approaches depending on the necessary competencies of knowledge and skills as well as on the nature of the job for which the recruitment is performed. When analyzing the relationship and the mutual impact recruitment has on other human resource management activities, the results of the research have confirmed that recruitment of candidates in the organization is always based on the previously defined human resource plan, and that the subsequent success of selection of candidates directly depends on the quality of performed recruitment of candidates. The results of the empirical research have confirmed that in microcredit organizations, recruitment through advertising facilitates and fosters to the fullest extent the process of selection of candidates, which cannot be said for recruitment through state employment agencies. Expectedly, respondents stated that the process of socialization and orientation of new employees is more lengthy and more complex when candidates are acquired externally, and that the process of training and development of employees is time-consuming and cost-demanding when candidates are acquired in this way. Moreover, the results of the conducted research have shown that the degree of employee retention (leaving the job, voluntary or dismissal) is lower if the internal recruitment is performed. Also, based on the results of the conducted research, it can be concluded that the respondents disagree with the assertion that the increase in the degree of absenteeism (absent from work-sickness, marking from work, *etc.*) is related to the use of external recruitment of candidates, although in the theory of human resource management, which addresses this issue, this connection, in the context of considerations of negative sides of the recruitment process, is emphasized.

Finally, it is necessary to highlight certain limitations of the research carried out: (a) given that the survey was conducted on a sample of employees in microcredit organizations with headquarters in the BiH Federation, there is a possibility that the results obtained cannot be generalized to the extent it would have been possible in the situation, where the researcher included a larger number of respondents from the whole territory of BiH; (b) the survey did not include all microcredit organizations in the BiH Federation, but the subject research was conducted in three microcredit organizations with headquarters in the BiH Federation; (c) there is a risk of dishonest responses

from the respondents about agree/disagree offered claims, which can be associated with the desire to present the organization, in which they work, in a better or worse light.

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INVESTMENT PROJECT FINANCING VIA MUNICIPAL BONDS: THE CASE OF BOSNIA AND HERZEGOVINA

FINANSIRANJE INVESTICIONIH PROJEKATA EMISIJOM MUNICIPALNIH OBVEZNICA: SLUČAJ BOSNE I HERCEGOVINE

Abstract

Municipal bonds are a very common way of financing investment projects in developed countries. For countries in transition, such projects are primarily financed through bank loans, mainly due to the nature of the bank-oriented financial system and poorly developed capital markets. Municipal bonds have many advantages over bank loans for both the issuer and investors. From the issuer perspective, the advantages are mainly reflected through lower interest rates when compared to bank loans, creation of own repayment plans in accordance with the estimated possibilities, process transparency, community participation in the development of local government policies, etc. These advantages over traditional bank loans should stimulate and encourage local governments to consider municipal bonds as their preferred finance method for investment projects. The main purpose of this paper is to examine the preferences of local governments in Bosnia and Herzegovina (BiH) when selecting the method of financing investment projects, with special focus on municipal bonds. The study was conducted on a basic dataset, consisting of local governments in BiH, with an expert sample consisting of 41 local government units. The research showed that the majority of respondents preferred municipal bonds over bank loans as a way of borrowing and financing. However, due to poorly developed capital market conditions, bank loans still continue to be the backbone of investment financing for local governments.

Sažetak

U razvijenim zemljama, emisija municipalnih obveznica predstavlja veoma čest način finansiranja investicionih projekata. U zemljama u tranziciji, ove investicione aktivnosti pretežno se realizuju putem bankarskih kredita, kako zbog bankarski orijentisanog finansijskog sistema tako i zbog slabo razvijenog tržišta kapitala. Međutim, emisija municipalnih obveznica ima niz pogodnosti u odnosu na bankarske kredite, posmatrajući s aspekta emitenta, kao i investitora. Iz ugla emitenta, prednosti se u najvećoj mjeri ogledaju kroz niže kamatne stope u odnosu bankarske kredite, sopstveno kreiranje dinamike otplate u skladu sa procijenjenim mogućnostima, potpunu transparentnost postupka, učešće lokalne zajednice u razvojnoj politici jedinice lokalne samouprave i sl. Zbog brojnih prednosti emisije municipalnih obveznica u odnosu na zaduženje putem bankarskih kredita, trebalo bi stimulisati i potaknuti jedinice lokalne samouprave da ih kod finansiranja investicionih projekata koriste kao dominantni način zaduženja. Glavna svrha ovog rada jeste ispitati preferencije jedinica lokalne samouprave u Bosni i Hercegovini kod odabira načina finansiranja investicionih projekata te zastupljenost emisije municipalnih obveznica. Istraživanje je provedeno na osnovnom skupu, kojeg čine jedinice lokalne samouprave u Bosni i Hercegovini, dok ekspertni uzorak čini 41 jedinica lokalne samouprave. Provedeno istraživanje pokazalo je da većina ispitanika de facto daje prednost emisiji municipalnih obveznica, kao načinu zaduženja i finansiranja, u više elemenata u odnosu na bankarske kredite. Međutim, slabo razvijeno tržište kapitala uvjetuje da banke i dalje predstavljaju glavni oslonac za jedinice lokalne samouprave kod obezbjeđenja nedostajućih finansijskih sredstava.

Ključne riječi: municipalne obveznice, bankarski krediti, investicioni projekti, jedinice lokalne samouprave, Bosna i Hercegovina

JEL: G19, G23, G29, H74

1. Introduction

In order to finance and implement investment activities of the local government, which are in the focus of their development programmes and policies, local government units (LGUs), *i.e.* municipalities, cities, *etc.*, are mostly forced to use some of the available sources of debt financing. Bank loans are seen as a

more traditional form of debt financing and as such they mainly prevail in less developed countries with less developed capital markets. On the other hand, LGUs also have the option to finance debt by issuing municipal bonds that are often used in developed countries with developed capital markets as the form of financing development policies and investment activities of the local government. Apart from the obvious disadvantages in comparison to bank loans, municipal bonds certainly have a series of positive effects reflecting the issuer and the wider community. These positive effects are precisely the reason why this type of LGU debt financing should be promoted on the territory of Bosnia and Herzegovina (BiH), the country with many specific features when it comes to capital market and the presence of municipal bonds.

2. Theoretical development and hypothesis

Bond is a debt security and an instrument of capital market. On the one hand, it is a written document by which its issuer is obliged to fulfil the obligation written on the document given to its legal owner. On the other hand, it is quality instrument by which its issuer raises the necessary funds in order to satisfy its own economic needs (Grubišić, 2008, p. 166). Municipal bonds, as a special type of bonds, are one of the two most widely used forms of financing investment activities of the local community. They were first used in the 16th century in Italy, while in the USA they were first issed in 1812 by New York City for the purpose of building a canal. Issuing and resorting to municipal bonds as the type of financing large investment projects are characteristic of the countries with developed market economy and capital market.

Both, bank loans and municipal bonds, as the dominant forms of LGU debt financing, have certain advantages and disadvantages, with municipal bonds generating a series of positive effects not only for the issuer that provides funds but also for the entire local community and the whole capital market of a country. Table 1 summarizes the advantages and disadvantages of municipal bond issuance when compared to debt financing by bank loans.

Table 1. *Municipal bonds versus bank loans*

Municipal bonds	Bank loans
Advantages	Disadvantages
Cheaper debt financing – lower interest rate	More expensive debt financing – higher interest rate
Rather wide and diverse base of investors – opportunity for competition and interest rate reduction	Rather "poor" pool of investors – only a certain number of banks interested in financing – lack of competitors for reducing interest rates
The issuer dictates debt financing terms – according to the existing situation, debt, and one's own projections	Debtor adapts to the offered terms of debt financing
Option for long term debt financing at a fixed interest rate	Risk of change in bank's business policy
Option for raising larger funds due to a wider pool of investors	Limitations in terms of the amount of funds that can be raised
Public assessment of local government creditworthiness	Creditworthiness is assessed by the bank-creditor only
More transparent procedure	Less transparent procedure
Successful issuance – citizens' approval of investment and debt financing	Procedure is carried out between the bank and the LGU only
Issuance need not be guaranteed by mortgage	Loans are mainly approved with mortgage as guarantee
Investors may trade bonds on the secondary market	Loan cannot be the subject to trade transactions or loan is more difficult to be traded
Financial and other benefits for investors and other participants in the municipal bond issuance procedure	Only banks as creditors benefit
Opportunity for attracting foreign capital by issuing bonds on the international market	Debt financing via loans by no means improves attracting foreign investment
Disadvantages	Advantages
More complex procedure for preparing issuance and carrying out debt financing	Simpler application and carrying out debt financing
Potential additional personnel resources needed	Debt financing is mostly carried out by the available personnel resources
Additional costs during preparing and carrying out issuance	Bank procedure does not require special costs
Additional knowledge required in the field of finance	No need for additional knowledge in order to carry out the debt financing procedure
Longer period until the moment when funds are available	Shorter period for approval and the moment when funds are available
Higher uncertainty regarding the success of the emission (and obtaining funds after debt financing) – risk of emission failure	Application and carrying out of debt financing are relatively safe

Source: Authors' research

Municipal bonds, especially on the capital market of transition countries, "freshen" and diversify the market, increase competitiveness of financial instruments, provide a series of benefits for the local community and consequently the country, which results in the synergy effect created by the issuance of such type of bonds. This is why all the actors should act so as to provide the easiest possible realization and the most intensive application of municipal bonds issuance. For example, as of 1995, more than 200 LGUs in Poland issued municipal bonds. The local authorities in Poland may issue general bonds and revenue municipal bonds, with payment guaranteed by the total assets of the issuer (Grujić, 2012, p. 339). It should be noted that the Warsaw Stock Exchange is the most vibrant capital market in the Central and Eastern Europe.

When it comes to the capital market in BiH, municipal bonds are still seen as a sort of a novelty. The way in which the BiH capital market has been established, referring primarily to its institutional and legal-regulation framework, does not act as a stimulating factor of its development which would consequently lead to stronger presence of municipal bond issuance. The BiH capital market is relatively young and mainly used for the trading of common stocks coming from the process of mass privatisation and, to a lesser extent, of bonds. A low level of the general knowledge of capital market instruments is also evident. By analyzing the volume and trade of the municipal bond issue in the region, primarily in the countries that were once the members of the former state, the Socialist Federal Republic of Yugoslavia, one can notice the tendency towards debt financing by municipal bond issuance but also the fact that BiH lags behind other countries (except the Republic of Macedonia). For example, six municipalities in Slovenia have so far financed their debt by municipal bond issue with seven public offerings. In Croatia, municipal bond issuance was made by eight municipalities in the total value of BAM 148,959,228. In terms of Serbia, it is important to mention that LGUs have been given the ability to finance their debt by municipal bond issuance only from 2011, since when four municipalities started the realization of municipal bond issuance in the total value of BAM 80,717,945.

With all this said, the main research hypothesis in this article is postulated as follows: "In BiH, LGUs mainly finance their debt by bank loans, but with better conditions on the capital market LGUs would largely opt for debt financing by municipal bond issue".

3. Review of previous research

In the USA, for more than 200 years, state and local governments and governmental entities have relied on municipal bonds to finance infrastructure investments. These bonds finance roads, bridges, sewers, hospitals, libraries, schools, town halls, police stations, infrastructure for public power utilities, and other governmental investments. Nearly three quarters of core infrastructure investment in the USA is financed by municipal bonds (Godfrey & Currie, 2013, p. 66). However, the global financial crisis in 2008 had negative implications on the municipal bond market. While some parts of the market are returning to normal, other parts are still under pressure in the aftermath of the crisis. By comparing the yields on municipal bonds and comparable corporate bonds, Peng, Kriz, and Wang (2014, pp. 18-38) found that since the crisis, municipal bonds of lower investment grade ratings, those rated A and BBB, are now paying a significantly higher risk premium than their corporate counterparts as seen in light of the traditional yield spread between these two bond markets.

Investors in public offerings of municipal bonds pay different prices for their bonds. Prices are higher for small purchases. Prices are typically lowest on the offering date and increase over the next few days. Even for similar size purchases of the same bond on the same day, however, investors can pay significantly different prices. Schultz (2012, pp. 492-512) examined how these patterns in bond prices are affected by the increase in post-trade transparency and concluded that small purchasers continue to pay higher prices than large purchasers. Prices continue to rise relative to the reoffering price in the days after the offering date. Mark-ups for small purchases do decline somewhat with the increase in post-trade transparency, but prices for large trades actually increase relative to the reoffering price. Furthermore, Wang, Wu, and Zhang (2008, pp. 1133-1149) examined the effects of liquidity, default, and personal taxes on the relative yields of municipal bonds using a generalized model with liquidity risk. The municipal yield model includes liquidity as a state factor. Using a unique transaction dataset, they estimated the liquidity risk of municipal bonds and its effect on bond yields. Empirical evidence revealed that municipal bond yields are strongly affected by all three factors.

Until 2004, Indian cities (especially few large) have taken the route of using municipal bonds to finance their development and infrastructure. But the interest in bonds then went on a decline onward. There were very few bond

issues during 2005-2014. With the National Democratic Alliance government coming back into power in 2014, it is hoped there will be scope for their re-introduction (Nallathiga, 2015, pp. 57-72).

Examining the Romanian municipal bond market, which emerged in 2001, in the light of the global financial crisis, Vasile and Matei (2010, pp. 110-126) concluded that the market is highly concentrated. Another drawback of the market is a lack of transparency. Compared with other markets, the Romanian one has small dimensions and the interest of investors is decreasing.

Local governments in China are facing heavy debt burdens, a low level of fiscal transparency and a lack of constraints by local democracy. Since 2008, local government debts have skyrocketed. Feng (2013, pp. 23-53) investigated the current state and features of local government debts and the two kinds of "*quasi* municipal bonds" in China − urban investment bonds and local government bonds − along with their problems and risks. Among other things, he highlighted that most problems of local government debt are connected to the following: the lack of constitutional and fiscal rules constraining the central government and local governments; the absence of local democracy; the pressure of fiscal competition and economic performance in individual regions; the over-investment and excessive construction connected with it; the repercussions of fiscal reforms since 1994 that resulted in the centralization of fiscal revenue; and the haphazard changes in the terms of officials at higher levels of government. None of these problems can be resolved by simply issuing municipal bonds. Allowing the issuance of municipal bonds is an opportunity that could bring these problems to the debate table and see resolution as the framework that manages municipal bonds is perfected.

Analysing the Mexico municipal bond market, founded in December 2001, Leigland (2004, pp. 155-174) came to several lessons for emerging countries. First of all, the use of municipal future-flow bonds in Mexico is probably more a result of political will than the structuring innovations of legal and financial experts. Secondly, in addition to political will, Mexico displays another quality that is often a key missing ingredient in efforts to kick-start municipal bond markets − a willingness to give local government officials the benefit of the doubt in an effort to promote innovative financing of municipal infrastructure. Thirdly, the structuring techniques involved in Mexico's municipal future-flow deals are mostly mechanisms for achieving in a nascent municipal bond market the kinds of minimally acceptable deal characteristics

that are often taken for granted in more developed markets. Finding short cuts or proxies to achieve these kinds of characteristics, sometimes at significant risk and cost, is a common strategy in efforts to develop municipal bond markets in emerging economies. Fourthly, municipalities must have revenue streams that are large and reliable enough to repay investors, and must be able to demonstrate convincingly to prospective investors that those revenue streams are thoroughly predictable, *etc*.

According to Milosevic, Meceski, and Srbinoski (2012, pp. 184-192), in the Republic of Macedonia, with a complete absence of municipal bonds, this financial instrument would be appropriate for life insurance companies, as significant institutional investors in the capital market, in terms of their investment policy and for managing the risks that occur during the maturity mismatch between assets and liabilities. Besides this, examining the same market, with a special focus on the Municipality of Stip, Gogova Samonikov *et al*. (2017, pp. 155-174) highlighted that the creation of an active municipal bond market in the transitional economies is largely dependent on the capital markets development. The development of capital market institutions such as investment and pension funds has to come first as well as of life insurance institutions since these investors are interested in this kind of long-term investment in the first place. Municipal bonds should primarily be used by the local governments at the capital market for financing capital projects. In that way, a local self-government obtains a cost-effective source of funding in comparison with a bank loan, and on the other hand, the investors get a more conservative *i.e.* less risky investment.

4. Empirical research methodology

When it comes to the capital market in BiH, a total of 19 municipalities (three in BiH Federation and 16 in Republic of Srpska, out of which two municipalities had two public offerings of municipal bonds each) realized the public offering of municipal bonds. The total value of the realized public offerings is BAM 63,700,000. In terms of the length of time and issuance value, it can be observed that BiH executed public offerings of a significantly lower value over a longer period of time when compared to other countries of the region.

Table 2. *Scope of executed public offerings of municipal bonds in BiH Federation and Republic of Srpska*

BiH Federation (2011-2016)	Republic of Srpska (2008-2016)
BAM 2,500,000	BAM 61,200,000

Source: Authors' research

In this context, it should be noted that only after the amendments to the Law on Borrowing, Debt, and Guarantees in 2010, were LGUs in BiH Federation allowed to finance their debt by security issuance while the Law on Borrowing, Debt, and Guarantees of Republic of Srpska allowed LGUs as early as in 2007 to finance their debt in this way. Consequently, the Municipality of Laktaši, as the first issuer in Republic of Srpska and BiH, issued in 2008 municipal bonds worth BAM 10,000,000 for the construction of their sports hall. As we have already stated, the capital market in BiH is rather underdeveloped, especially in terms of the scope of municipal bond public offerings and the reasons for this are manifold. First, the fact that the capital market, divided into two stock exchanges (Sarajevo and Banjaluka) on a very small territory, is an obstacle to drawing significant foreign investment. The union of these two stock exchanges would represent the first step to strengthen and develop the capital market in BiH. Complex political situation and economic environment along with the high unemployment rate and a very low level of economy income are also some of the key factors affecting the (under)development of the capital market in BiH.

The empirical research presented here is based on the data obtained through the application of the survey method by means of a questionnaire as a form for data collection. The following part of the paper presents a part of the research conducted via questionnaire disseminated to LGUs. In mid-2016, the questionnaires were distributed to 144 LGUs via e-mail, following the data base on LGUs in BiH as received from the Council of municipalities and cities of BiH Federation and Republic of Srpska (the two entities of BiH).

5. Results and discussion

The questionnaires were filled in by a total of 41 LGUs, making it 28.47% of the total set, meaning a large sample. As concluded from the results, the LGUs

that were mostly represented in the research, on the territory of both entities, were the LGUs with the population of up to 25,000. They are followed by the LGUs with the population between 25,000 and 50,000 (see Graph 1).
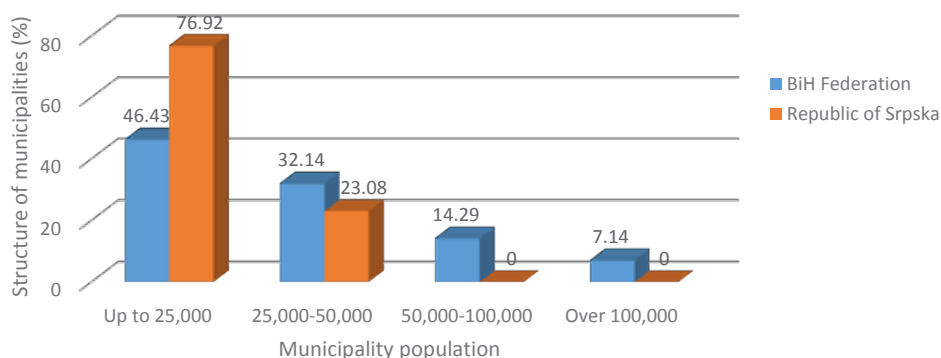
Graph 1. *Structure of the surveyed LGUs by population*

Source: Authors' research

Table 3 shows whether there are certain investment activities in the previous period realized on the territory of the surveyed LGUs.

Table 3. *Frequency of realized investment activities on the territory of LGUs*

Has your LGU so far realized certain investment activities?	BiH Federation		Republic of Srpska		Total	
	f	%	f	%	f	%
No	2	7.14	0	0.00	2	4.88
Yes	26	92.86	13	100.00	39	95.12
Total	28	100.00	13	100.00	41	100.00

Source: Authors' research

Out of the total of 41 LGUs surveyed in both entities, 39 of them (95.12%) confirmed the realization of certain investment projects on their territory, 26 of them in BiH Federation and 13 in Republic of Srpska. Graph 2 shows the research results referring to the number of the realized investment activities of a certain type. In BiH Federation, the highest share refers to the LGUs where two types of investment activities were realized. In Republic of Srpska, the highest share belongs to the LGUs where two or three types of investment activities were realized. The calculated value of the *chi-square* test and its *p*-value (over 0.05) indicate that there is no relation between the number of

the realized investment activities of a certain type and the position within a certain territory (in this case entity). Hence, in both entities municipalities prevail with two or three types of the realized investment activities.
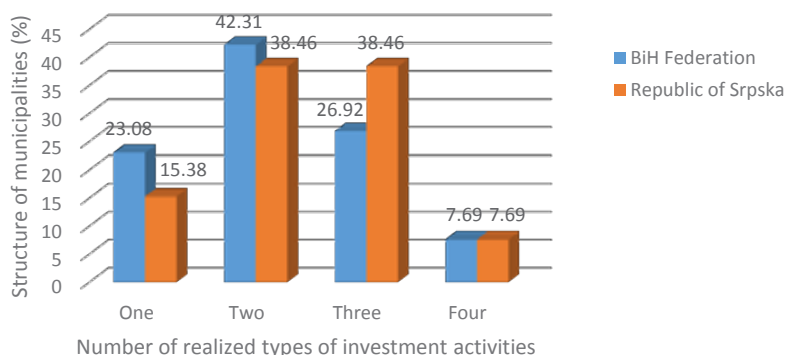
Graph 2. *Structure of the surveyed LGUs by the number of realized investment activities*

Source: Authors' research

Table 4 presents the types of the realized investment projects on the territories of 39 LGUs that confirmed the realization of investment activities.

Table 4. *Structure of realized investment activities by type*

Types of investment activities reaalized	BiH territory (39 LGUs)	
	f	%
Facilities of economic infrastructure	19	48.72
Road infrastructure	35	89.74
Culturally significant facilities	17	43.59
Other	16	41.03
$\chi2 = 10.977; \ df = 3; P = 0.0118$		

Source: Authors' research

It is evident that in BiH, LGUs predominantly realized investment activities related to road infrastructure (89.74%), followed by investment activities related to the construction of the facilities of economic infrastructure (48.72%), culturally significant facilities (43.59%), and others (41.03%). Whether the realization of investment activities required additional financial resources can be seen in Table 5.

Table 5. *Need for additional funds*

Were additional funds needed?	BiH Federation		Republic of Srpska		Total	
	f	%	f	%	f	%
No	2	7.69	0	0.00	2	5.13
Yes	24	92.31	13	100.00	37	94.87
Total	26	100.00	13	100.00	39	100.00

Source: Authors' research

These results clearly indicate that the highest number of LGUs (as many as 98.47%) stated that additional funds were needed for the realization of their investment activities. The sources for these funds are presented in Table 6. They subjects were given several options to choose from: commercial bank loan, public offering of municipal bonds, development bank loan, and "other sources", whereby each of the subjects was able to state one or more used sources of funding.

Table 6. *Sources of additional funds*

Sources of raising additional funds	BiH territory (37 LGUs)	
	f	%
Commercial bank loan	18	48.65
Public offering of municipal bonds	8	21.62
Development bank loan	10	27.03
Other sources	23	62.16
$\chi 2 = 9.949$; $df = 3$; $P = 0.0190$		

Source: Authors' research

Out of 37 LGUs in both entities that confirmed to have needed the additional financial resources to realize their investment activities, the highest share, 62.16% stated that they provided the resources from other source, by grants, donations (domestic and foreign), and transfers from higher government bodies. They are followed by the LGUs that provided their funds through commercial bank loans (48.65%) and through development bank loans (27.03%). The lowest percent of the LGUs surveyed provided the funds through municipal bonds, only 21.62% (Table 7).

Table 7. *Ways of providing additional funds by entities*

Ways of providing additional funds	BiH Federation (24)		Republic of Srpska (13)		Total (37)	
	f	*%*	*f*	*%*	*f*	*%*
Commercial bank loan	8	33.33	10	76.92	18	48.65
Public offering of municipal bonds	3	12.50	5	38.46	8	21.62
Development bank loan	5	20.83	5	38.46	10	27.03
Other sources	18	75.00	5	38.46	23	62.16

Source: Authors' research

Table 8 presents the reasons why additional funds were provided through commercial bank loans rather than through public offering of municipal bonds.

Table 8. *Reasons for choosing to finance debt through commercial bank loans rather than public offering of bonds*

	BiH Federation (8)		Republic of Srpska (10)		Total (18)	
	f	%	f	%	f	%
Simple procedure	4	50.00	7	70,00	11	61,11
Insufficient knowledge on other sources of fund raising	3	37.50	2	20.00	5	27.78
Citizens will not be sufficiently interested in public offering of bonds	2	25.00	5	50.00	7	38.89
Insufficient number of personnel in the process of preparation and realization of public offering of bonds	2	25.00	1	10.00	3	16.67
Insufficient training of personnel in the process of preparation and realization of public offering of bonds	0	0.00	1	10.00	1	5.56
Other reasons	1	12.50	2	20.00	3	16.67

Source: Authors' research

Table 8 clearly indicates that the key reasons why LGUs in both entities choose to finance their debt through commercial bank loans rather than the public offering of municipal bonds are related to a simpler procedure for getting commercial bank loans (the time period until the financial resources are available is measured in weeks compared to months for public offerings).

The second most frequent reason stated in BiH Federation is the insufficient knowledge on other sources of fund raising while in Republic of Srpska it is the possibility that citizens will not be sufficiently interested in the public offering of bonds.

The ways have been analyzed of additional fund provision that would be preferred by the subjects, in terms of the level and variability of interest rate, repayment term, and positive effects on the LGU population and the results are presented in Table 9.

Table 9. *Determinants of the selection of the ways of additional fund provision*

Factors of preference of the types of investment projects	Commercial bank loan		Public offering of municipal bonds		Total		p
	f	*%*	*f*	*%*	*f*	*%*	
Interest rate level	22	53.66	19	46.34	41	100.00	0.639
Interest rate variability	16	39.02	25	60.98	41	100.00	0.160
Repayment term	19	46.34	22	53.66	41	100.00	0.639
More positive effects on LGU population	18	43.90	23	56.10	41	100.00	0.435

Source: Authors' research

Referring to the results presented in Table 9, it can be concluded that the highest number of LGUs choose to finance their debt by commercial bank loans due to the level of interest rate, while LGUs mainly prefer the public offering of municipal bonds due to the variability of interest rate and stronger positive effect on the LGU population. Hence, LGUs find the public offering of municipal bonds to have a stronger positive effect on their population than commercial bank loans.

Table 10. *LGUs attitude towards the development of the capital market in BiH*

Do you consider the capital market in BiH to be insufficiently developed?	BiH Federation		Republic of Srpska		Total	
	f	*%*	*f*	*%*	*f*	*%*
No	1	3.57	1	7.69	2	4.88
Yes	27	96.43	12	92.31	39	95.12
Total	28	100.00	13	100.00	41	100.00

Source: Authors' research

In terms of the attitude of LGUs in both entities in BiH regarding the development of the domestic capital market, the highest number of municipalities/cities (95.12%) gave an affirmative answer, thus stating that the capital market in BiH is insufficiently developed. Table 11 presents the possible reasons and the extent of their influence.

Table 11. *Reasons and their influence on the underdevelopment of the capital market in BiH*

	Strong		Extremely strong	
	f	%	f	%
Lack of a unique trading institution	11	28.21	4	10,26
Lack of unique legal and regulatory framework for the functioning of the capital market	12	30.77	3	7.69
Inadequate political environment for business and investment	13	33.33	15	38.46
Insufficient knowledge on the way and effects of the public offering of municipal bonds from the point of view of local self-governments as potential issuers	9	23.08	6	15.38
Insufficient trust by the citizens and other potential investors in the state or LGUs as the guarantors for the issued municipal bonds	16	41.03	6	15.38

Source: Authors' research

Out of the total number of the surveyed LGUs, the highest number (41.03%) stated that insufficient trust of the citizens and other potential investors in the state and LGUs as the guarantors for the issued municipal bonds has a strong influence on the insufficient development of the capital market. Some 33.33% of the LGUs surveyed stated that inadequate political environment has a strong influence on business and investment while 38.46% of them believe that this reason has an extremely strong effect. Table 12 presents the research into the extent to which LGUs and employees in charge (of municipal bond issuance) are familiar with the way and procedure of the public offering of municipal bonds.

Table 12. *Knowledge of the way and procedures of the public offering of municipal bonds*

Knowledge of the way and procedures of the public offering of municipal bonds	BiH Federation		Republic of Srpska		Total	
	f	%	f	%	f	%
Fully informed	4	14.29	5	38.46	9	21.95
Partially informed	16	57.14	7	53.85	23	56.10
Not informed	8	28.57	1	7.69	9	21.95
Total	28	100.00	13	100.00	41	100.00

Source: Authors' research

In both BiH entities dominate the LGUs in which the employees in charge stated that they are partially familiar with the way and procedure of the public offering of municipal bonds. The number of the LGUs in which the employees in charge stated that they are not familiar with the way and the procedure is the lowest in both entities. Table 13 shows the sources from which the LGU employees in charge gather the information regarding the public offering of municipal bonds.

Table13. *Used sources of information on the public offering of municipal bonds*

Sources of information regarding the public offering of municipal bonds	BiH Federation (28)		Republic of Srpska (13)		Total (41)	
	f	%	f	%	f	%
Legal regulations	9	32.14	10	76.92	19	46.34
Attending seminars and trainings	7	25.00	1	7.69	8	19.51
General education in the field of finance	16	57.14	4	30.77	20	48.78
Other	1	3.57	1	7.69	2	4.88

Source: Authors' research

Table 13 indicates that in BiH Federation, the highest number of the LGU employees in charge gather the information on the public offering of municipal bonds from their general education in the field of finance (57.14%). Unlike them, the LGU employees in Republic of Srpska gather such information from the legal regulations related to that field (76.92%).

In addition, the highest number of LGUs in BiH (over 92.00%) intend to realize certain investment activities in the near future (Table 14).

Table 14. *Number and structure of the surveyed LGUs*
in terms of their planned investment activities

Does your LGU intend to realize any investment activities in the near future?	BiH Federation		Republic of Srpska		Total	
	f	%	f	%	f	%
No	2	7.14	1	7.69	3	7.32
Yes	26	92.86	12	92.31	38	92.68
Total	28	100.00	13	100.00	41	105.13

Source: Authors' research

Starting from all the advantages and disadvantages of the public offering of municipal bonds compared to commercial bank loans, the research was aimed at establishing whether LGUs would realize the public offering of municipal bonds as the way of raising funds. Table 15 brings the results obtained.

Table 15. *Number and structure of the surveyed LGUs in terms*
of the future public offerings of municipal bonds

Would you realize the public offering of municipal bonds?	BiH Federation		Republic of Srpska		Total	
	f	%	f	%	f	%
No	5	17.86	4	30.77	9	21.95
Yes	23	82.14	9	69.23	32	78.05
Total	28	100.00	13	100.00	41	105.13

Source: Authors' research

The obtained results suggest that in BiH dominate the LGUs with the affirmative statements when it comes to their realization of the public offering of municipal bonds as the way of raising funds, although their number is somewhat lower in Republic of Srpska (69.23%) than in BiH Federation (82.14%). All things considered, it can be stated that the main research hypothesis of this paper is accepted that in BiH LGUs mainly finance their debt by bank loans but with better conditions on the capital market LGUs would largely opt for debt financing by municipal bond issue.

6. Conclusion and recommendations

The public offering of municipal bonds is a very convenient way for LGUs to provide financial resources in order to finance their investment activities.

In developed countries with developed capital markets, this type of financing is largely used. This research, however, has clearly indicated that financing debt by the public offering of municipal bonds in BiH is used on a small scale and that BiH Federation lags behind Republic of Srpska in this matter. This is significantly caused by the legal framework that until 2010 prevented the LGUs in BiH Federation from financing their debt by issuing this type of securities. In this research, LGUs also identified a series of factors having a non-stimulating effect on the usage of municipal bond mechanism. In the future, a significant number of LGUs plan to realize some type of investment activities. The research showed that most LGUs opt for bank loans but that with the correction of the factors perceived by LGUs to prevent the development of the capital market, more favourable business conditions on the capital market would be created. Consequently, a higher number of LGUs would opt for finance their planned investment activities through the public offering of municipal bonds rather than through commercial banks.

Recommendations for furher research relate to the analysis of the demand market for municipal bonds that would primarily include: the attitudes of institutional investors towards investment into municipal bonds; a detailed analysis of readiness (in the widest sense of this word) of LGU officials in BiH for the public offering of municipal bonds; comparative analysis of supply and demand market for municipal bonds in BiH and other countries of the Southeast or Eastern Europe; *etc*.

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RISKS IN DEVELOPMENT OF ENERGY SECTOR: CASE STUDY OF BOSNIA AND HERZEGOVINA

RIZICI U RAZVOJU ENERGETSKOG SEKTORA: PRIMJER BOSNE I HERCEGOVINE

Abstract

The paper systematically emphasizes the need for risk management in energy sector, which becomes even more obvious after the initialization of deregulation processes in energy markets. Deregulation started in early 1990s, which led to new emerging possibilities in the energy markets, by also changing risks exposure within the energy sector. Moreover, the global climate changes created an additional pressure on business activities, which greatly changed the level of risk exposure. Those changes triggered new trends - implementation of risk management within the energy sector, more and more becoming companies recognized need for "Enterprise Risk Management" or ERM. The ERM is representing thorough methods of managing all risks that the company might be exposed to, by inherently requiring alignment of risk management with corporate governance and strategy. Risk management is comprehensive process tangling multiple phases, thus for this study chosen phase includes; Risk identification and evaluation. In addition, goal of this study is identification and evaluation of risks in development of energy sector, specifically in Bosnia and Herzegovina (BiH). Therefore, during the process of identification of risks, several groups of risks have been identified and classified, thus authors have selected main four risks due to their intensity and frequency. Also, the evaluation has been conducted for those selected risks by applying relevant statistical methods. During the course of this study, the secondary data has been used and statistical methods used are correlation, regression and factor analysis. The research results accentuate that the four groups of risks fall into category of high-frequency and high-intensity risks. Therefore, it is essential to adequately implement the ERM in the energy sector

of BiH, ultimately decreasing their influence on the company's performance. Finally, future studies can be focused on importance of implementation of EMR (and ISO 31000:2009) to improve business performance within energy sector.

Keywords: energy sector, risks, BiH, risk management

JEL: Q49, Q43, G32, O13

Sažetak

Rad na sistematičan način ukazuje na potrebu za upravljanjem rizicima u energetskom sektoru koja sa početkom procesa deregulacije energetskih tržišta postaje sve očitija. Deregulacija u energetskom sektoru je započela tokom 1990-ih godina deregulacijom tržišta prirodnog gasa, nakon kojeg započinje proces deregulacije tržišta električne energije, koja otvara nove mogućnosti na energetskim tržištima, ali i mijenja izloženost preduzeća rizicima unutar energetskog sektora. Osim toga, globalne klimatske promjene i povećanje svijesti o ekološkom uticaju energetskog sektora stvaraju dodatni pritisak na poslovanje preduzeća, što uveliko mijenja i stepen izloženosti rizicima. Navedene promjene u energetskom sektoru dovele su do pojave trenda implementacije procesa upravljanja rizicima u energetskom sektoru, koji veoma često poprima formu "enterprise risk management" (upravljanje rizicima kompanije - ERM). ERM predstavlja sveobuhvatan princip upravljanja svim rizicima kojim je izloženo preduzeće, koji je usklađen sa strategijom i korporativnim upravljanjem unutar preduzeća. Mnogi autori ga nazivaju novom paradigmom rizik menadžmenta. Upravljanje rizicima je proces koji obuhvata više faza, a za predmetno istraživanje su odabrane faze: identifikacija i evaluacija rizika. Shodno navedenom, cilj rada je identifikacija i evaluacija rizika razvoja energetskog sektora u Bosni i Hercegovini. Tokom identifikacije rizika definisano je više skupina rizika od kojih su autori izdvojili četiri zbog njihovog intenziteta i frekvencije. Za izdvojene rizike je izvršena evaluacija primjenom relevantnih statističkih metoda. U kontekstu predmetnog istraživanja korišteni su sekundarni podaci, a primijenjene su statističke metode korelacije, regresije i faktorska analiza. Rezultati istraživanja ukazuju na činjenicu da posmatrane četiri skupine rizika predstavljaju rizike visoke frekvencije i intenziteta, te da je neophodno na adekvatan način izvršiti implementaciju ERM u energetskom sektoru BiH s ciljem smanjenja njihovog uticaja na performanse uspješnosti preduzeća. Shodno tome, buduća istraživanja mogu biti usmjerena ka načinu uspostave sistema ERM, odnosno na implikacije uvođenja standarda ISO 31000:2009 na poboljšanje performansi uspješnosti poslovanja preduzeća unutar energetskog sektora.

Ključne riječi: energetski sektor, rizici, BiH, upravljanje rizicima

JEL: Q49, Q43, G32, O13

1. Introduction

The need for risk management in the energy sectors has come in the forefront along with the process of energy market deregulation. Deregulation in the energy sector started in the 1990s in the natural gas market. After this, deregulation of the electric energy market started in the Scandinavian countries, consequently contributing to lower wholesale prices of electric energy. The deregulation has opened up new possibilities on the markets of energy products but it has also brought new risks. Today, the policy of the energy sector includes providing sufficient quantities of energy characterized as "pure" energy in terms of its environmentally friendly status. The development of the European Union (EU) energy sector follows this path through market integration and liberalization implemented in parallel. The first EU directives brought in the mid 1990s and the EU legal regulations were mapped onto the national ones in different ways, depending on the very structure of the national energy industry in terms of its regulation, historical changes and the energy product markets. These changes within the EU have a direct effect on the energy sector in Bosnia and Herzegovina (BiH). Following the years of business activities on a regulated market, the energy companies in BiH have become the actors in market activities. They face new risks on the open market but the existing risks also change. This is particularly evident on the power market.

The diapason of risks in the energy industry is rather broad with the tendency of rapid and intensive changes (emerging risks), including political and legal risks, economic shocks, destruction risks, huge accidents during production processes, systemic risks and business risks or natural disaster risk, as was the case in Japan at the beginning of 2011. Although the topic of risk management and its advantages is rather popular, it is still dominant in the finance sector while other types of companies, including those active in the energy sector, do not have sufficient numbers of employees with skills necessary to obtain risk management function within company. The companies doing business in the energy sector face various types of risks varying in their intensity and frequency, depending on the market position of a business subject. The instability of this complex system would involve deviations in the energy supply in BiH. Even a brief collapse of the system would cause a huge shock for the economy and the citizens. Hence, risk management needs to be appropriately incorporated in the business but also in the government development strategies.

2. Literature review

Enterprise risk management (ERM) is relatively new concept and now corporate activity in the company; it is also yet to be fully implemented in most organizations globally. COSO (2004) defines enterprise risk management as "process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives". ERM is an instrument aiming at protecting the employees, assets and income of a company. It is proactive as it identifies and deals with potential losses before their occurrence and prepares certain specific financial and organisational solution plans meant to counteract and minimise these losses (Regina, 2010). Mosly (2012) divides risks into financial and market risks, technical risks, political and cultural risks, environmental, health and safety risks.

Energy sector restructuring and introduction of market economy principles have increased the importance attached to risk management by the companies in this sector. The energy sector of BiH basically includes coal industry and electric energy sector. BiH is completely dependent on the import of natural gas. The coal industry is traditionally given the primary status in BiH. Although it has a negative financial position, the level of state owned capital provides a certain amount of optimism due to potential state intervention. Accumulated problems need to be solved systematically and according to priorities so as to provide sound basis for the continuation of further business activities. The investment cycle going on as planned along with the appropriate management of capital and human potentials would enable coal mines to build solid foundations for successful business and constant income generation (Kozarević *et al*., 2012). Past restructuring of mines was not on track. Namely, there are still problems such as: too many employees, inappropriate personnel, outdated equipment, insufficient investment, *etc*. In order to increase the competitiveness of the coal industry and integrate it into European and global tendencies, *huge energy cleaning* is needed. It is an integral part of the transition plan in the energy sector dominated by development-organizational and financial restructuring with the evident social dimension (Ibreljić, 2005).

The team of the Faculty of Economics in Tuzla have been assessed risk management function within the coal industry in Federation of Bosnia and

Herzegovina (FBiH). The study revealed that risk management in the coal industry is far from the concept of enterprise risk management (ERM). This is best evident in the stages of risk identification and evaluation for which coal mines use rather simple methods such as balance analysis (Kozarević *et al*., 2012).

Furthermore, the power sector, based on hydroelectric power and coal power plants, undergoes the changes of regulatory framework and market positions, which makes the business activities within the sector more difficult. Electric energy companies respond to these changes in different ways, but they lack organizational culture that might facilitate transition. One of the ways to overcome the problems inherent in liberalization and deregulation is ERM implementation. A case study of the Public Enterprise "Elektroprivreda BiH" Inc. Sarajevo[1] conducted in the mid 2010 showed the following disadvantages of company's risk management (Šiljegović, 2010):

■ The survey showed that the Public Enterprise "Elektroprivreda BiH" Inc. Sarajevo is way below the European practice of risk management. However, insurance of all the employees needs to be emphasized as a positive example. The company uses insurance for the protection against property risks but only the most important facilities for business activities are insured. Consequently, the company uses risk retention as a method of risk management but it also retains the risks it should manage in some other way.

■ The situation related to the organization of risk management in the company is particularly negative (several employees within different services are involved in a small part of risk management activities), very few methods are used for risk identification and evaluation.

■ Treatment of business risks was better rated by the respondents.

■ Company's management only considers a portion of risks when making their strategic decisions, which is in accordance to the fact that the company does not have the risk management department.

■ Risk management resources are scarce concerning the reputation of the company.

■ Communication channel formally exists but it is not efficient and the employees lack sufficient information needed for evaluation, analysis and monitoring the risk directly related to them.

■ The study showed that the employees have very little knowledge of risk management and even if they use the techniques of risk management they are not aware of them. It was only after seeing the statements and

requesting additional explanations that most respondents became aware that they participate in the risk management process.

3. Methodology

The analysis was conducted based on the secondary data, collected from the relevant institutions such as the Hungarian Power Exchange, World Bank, Agency for Statistics of BiH, State Electricity Regulatory Commission, *etc*. The collected data were processed by the statistical method of correlation and regression, while the assessment of the macroeconomic position of the country, as the risk in development of the energy sector, was made by calculating the coefficients of descriptive statistics and factor analysis, the method of extracting the factors of principal components, used as the basis for regression analysis.

4. Results

4.1. Identification of risks of development of the energy sector in Bosnia and Herzegovina

Due to the characteristics of the activities, the risks within the coal industry and the power sector of BiH can be specified individually. The mining sector highlights the following:
■ safety risks (significant risk of explosion blast, landslides, operating heavy machinery, *etc*.);
■ environmental risks (environment pollution during exploitation, transport, *etc*.);
■ management risks (mines are often inadequately managed, which leads to business instability),
■ price risk (mines have high production price and depend on the contracted price primarily arranged with power plants);
■ political and legal risks (country's policy regarding energy sources directly affects the position of coal in the energy mix and consequently mine business activities);
■ social risks (strikes, protests, stoppages, *etc*.).

The situation in the power sector is rather similar. The risks present in the past development of the power sector can be summarized as follows:

- Market risks:
  - Large market concentration
  - Production price is often higher than selling price.

- Political and legal risks:

- Macroeconomic risk:
  - Low rate of GDP growth,
  - Large budget deficit,
  - High level of country's debt.

- Technical risks:
  - Outdated facilities for generating electricity,
  - Insufficient investment,
  - Inadequate know-how.

- Environmental risks:

- Electric utility companies are mainly state owned and political changes in the country directly
- Environmental protection laws directly affect the business activities of the companies.

- Air pollution,
- Water pollution,
- Soil pollution.

- Managerial risks:
  - Inadequate organizational structure,
  - Inadequate control system,
  - Lack of risk management.

Strategic risks and inadequate risk management strategy in particular, is often a significant obstacle to the development of energy companies and the energy sector as a whole. Energy companies, still burdened with the postulates of the planned economy, give little or no attention to risk management. Consequently, the measures they take are usually imposed by laws or previous high-intensity losses.

The risks on oil and natural gas markets are directly related to country's dependence on the import of these energy products. International events directly influence the stability of natural gas and/or oil supply. BiH is not able to absorb that kind of shocks on oil and natural gas markets since it does not have sufficient storage capacities, diversified supply, and the ability to quickly replace energy products. For example, the stoppage of gas supply from Russia through the Ukraine would mean that BiH would run out of gas within one to three months.

4.2. Evaluation of risks in development of the energy sector in Bosnia and Herzegovina

Market risks are important for all the energy activities, but recently the most significance is given to the change of intensity and frequency of market risks in the electric energy sector. With the liberalization of the electric energy sector, the price of electricity on regional stock exchanges becomes the measure of competitiveness of domestic electric utility companies. As presented in Table 1, it is evident that the price of electricity on the Hungarian Power Exchange (HUPX) is highly changeable. This consequently implies high risks of placement of electricity on the regional and domestic market open to foreign suppliers. That is why the liberalization of the electricity market is followed by increased competitiveness on the domestic market caused by the entrance of foreign suppliers of electricity. The price of electricity in the observed period of the last three years varied ±43% on average when compared to two-year average.

Table 1. *Descriptive statistics for the price of electricity at HUPX*

Country	N[2]	Minimum (EUR/MWh)	Maximum (EUR/MWh)	Mean (EUR/MWh)	Standard deviation	Variation coefficient
Hungary	29,065	-30.09	250.01	40.1484	18.05254	0.4496449
Slovakia	29,065	-55.00	150.00	33.9848	14.78708	0.4351092
Czech Republic	29,015	-55.00	120.98	33.2340	13.85065	0.4167608

Source: HUPX, Authors' calculation, May 2016

On the other hand, production prices of electricity in BiH are mainly higher than selling prices. On BiH power market there is three power companies: Public Enterprise "Elektroprivreda Bosnia and Herzegovina" (EPBiH) in Sarajevo, "MH Elektroprivreda Republike Srpske a.d." (EPRS) in Trebinje, and "JP Elektroprivreda Hrvatske Zajednice Herceg Bosne d.d." (EPHZHB) in Mostar. For example, the average price of electricity production at the Public Enterprise Elektroprivreda BiH (with production units: Coal power plant Tuzla, Coal power plant Kakanj, and hydropower plant "Jablanica", Hydropower plant "Grabovica", Hydropower plant "Salakovac" all on Neretva river) was (Elektroprivreda BiH, 2016):

■ The production price of electricity in 2014 was 8.59 pf/kWh,[3] with the price for hydroelectric power plants 4.68 pf/kWh, coal power plants 9.61 pf/kWh and small hydro plants 3.54 pf/kWh.

- The production price of electricity in 2013 was 8.34 pf/kWh, with the price for hydroelectric power plants 3.78 pf/kWh, coal power plants 9.85 pf/kWh and small hydro plants 3.92 pf/kWh.

The average price of electricity production at the "MH Elektroprivreda Republike Srpske a.d." - EPRS (with production units: Coal power plant Gacko, Coal power plant Ugljevik, Hydropower plant on river Trebišnjica at Trebinje, Hydropower plant on river Drina at Višegrad, Hydropower plant on river Vrbas at Mrkonjić Grad) was:
- The production price of electricity in 2014 was 4.18 pf/kWh for hydroelectric power plants, 10.40 pf/kWh for small hydro plants, and 9.07 pf/kWh for coal power plants. This means that the average price of production for hydroelectric power plants and coal power plants was 6.91 pf/kWh.
- The production price of electricity in 2013 was 6.21 pf/kWh (without small hydro plants).

Since the average selling price of electricity in 2014 and 2015 at HUPX was 7.85 pf/kWh, the data presented indicate the fact that among the existing capacities, only hydroelectric power plants can be competitive on the regional market. Statistically observed, according to the Rule 68-95-99.7 or the empirical rule, +/-3 of the standard deviation cover for 99.7% of the data, so it can be states that per hour prices in the observed 29,065 hours (until 25/04/2016) ranged from 7.30 pf/kWh to 8.39 pf/kWh. This leads us to the conclusion with 99% certainty that the two leading electric utilities in BiH are uncompetitive on the regional market. A large-intensity market risk in the power sector can transpose to the coal industry. Decreased share of electricity generated in coal power plants in the mix of electricity production that comes as a consequence of high prices results in decreased demand for coal.

Political and legal risks are often the subject matters at international institutions. That is why the evaluation of political risk is constantly made in all the countries of the world, including BiH, which can be summarized as follows:
- The Organization for Economic Co-operation and Development (OECD) ranked BiH seventh, which places it in the group of countries with the highest risk;
- *Moody`s* downgraded the credit rating of BiH to B3 and *S&P* rated it with B, which shows speculative credit ability or high credit risk (CBBiH, 2016);

- The indicators of government efficiency announced by the World Bank show low efficiency, followed by deteriorated rule of law and human freedoms, which registered mild improvement in the period 1999-2014;
- *Doing Business* data show that BiH is rather far from the best world business practices,
- *UNDP* Human Development Index (HDI) for BiH in the last five years is slightly higher than 0.7 (the index gets closer to 1 with the country's development increase). In 2014 it was 0.733 while HDI for highly developed countries is above 0.744.

When the results of these studies are summed up, it can be concluded that BiH belongs to a group of risky countries. Such assessment may directly affect foreign investment necessary for the development of the energy sector. As previously mentioned, the political and legal situation of the countries in the world is monitored by the World Bank through its indicators of the quality of the political and legal system of a country. The statistical analysis of the indicators of the political and legal situation was conducted for period 1999-2014 and the results are presented in Table 2.

Table 2. *Descriptive statistics for the governance indicators for BiH*

Description	Minimum	Maximum	Mean	Std. deviation	Variation coefficient
Political stability and absence of violence	-0.8399	-0.0314	-0.4726	0.21747	0.4602
Control of corruption	-0.4870	-0.1989	-0.3173	0.06637	0.2092
Regulatory quality	-0.8219	-0.0377	-0.2896	0.22967	0.7932
Government effectiveness	-1.0815	-0.4524	-0.7029	0.17895	0.2546
Rule of law	-0.6872	-0.1654	-0.4497	0.16601	0.3691

Source: Authors' calculation based on the World Bank data

Governance indicators range from -2.5 to 2.5, where -2.5 represents the worst and 2.5 stands for the best political and legal system. Therefore, the analysis indicated a rather low level of country's governance (as maximum indicator values are below 0), with slight changes (low standard deviation and variation coefficient).

To evaluate *macroeconomic risk* macroeconomics indicators for BiH can be correlated to the energy indicators as the two observed categories are in a causal relation. This is further supported by the correlation coefficients calculated for the selected indicators and given in the following table.

Table 3. *Correlation between the development of the energy sector and the macroeconomic development of the country*

Indicator		GDP pc (EUR)	Real GDP growth (%)	Average inflation rate (%)	Unemployment rate (%)	Investments (mil. EUR)
Primary production	Pearson correlation	0.947**	-0.617*	-0.11	-0.836**	0.528*
	p-value	0.00	0.01	0.70	0.00	0.04
Net export (export-import)	Pearson correlation	0.714**	-0.695**	-0.38	-0.545*	0.06
	p-value	0.00	0.00	0.16	0.04	0.84
Transformation at power plants	Pearson correlation	-0.908**	0.529*	0.09	0.804**	-0.524*
	p-value	0.00	0.04	0.75	0.00	0.04
Transformation at heating plants	Pearson correlation	-0.723**	0.569*	-0.10	0.764**	-0.46
	p-value	0.00	0.03	0.71	0.00	0.08
Oil refineries	Pearson correlation	-0.46	0.766**	0.20	0.45	0.15
	p-value	0.09	0.00	0.47	0.09	0.59
Energy consumption in transformation	Pearson correlation	-0.880**	0.51	0.21	0.711**	-0.35
	p-value	0.00	0.05	0.44	0.00	0.21
Distribution losses	Pearson correlation	0.31	-0.45	-0.43	-0.19	-0.22
	p-value	0.26	0.09	0.11	0.49	0.43
Total final energy consumption	Pearson correlation	0.948**	-0.50	0.12	-0.897**	0.669**
	p-value	0.00	0.06	0.66	0.00	0.01

** - Correlation is significance with the significance level of 0.01 (2-sides).

* - Correlation is significance with the significance level of 0.05 (2-sides).

The determined correlation indicated the causality between the selected macroeconomic indicators and the development energy sector, except for the average rate of inflation.

After the analysis of correlation, in order to evaluate the macroeconomic state of the country as a risk to the development of the energy sector, the coefficients of descriptive statistics were calculated as well as factor analysis. The method of extracting principal component factors, which served as the basis of the regression analysis, resulted in the risk factors presented in the following table.

Table 4. *Evaluation of the influence of the macroeconomic development on the state of the energy sector in BiH*

Description	Mean	Std. deviation	Variation coefficient	Factor load	Risk factor[4]
DTF[5]	55.23	4.251	0.0770	0.797	0.5523
GDP – current prices (mil. EUR)	10,106.70	3,075.31	0.3043	0.980	0.2983
GDP *p.c.* (EUR)	2,637.18	794.80	0.3014	0.981	0.2956
HDI[6]	0.724271	0.0077784	0.0107	0.939	0.9392
Public debt (mil.EUR)	3,410.91	1,433.64	0.4203	0.962	0.4045
Real GDP growth (%)	3.48	3.12	0.8972	0.630	0.5650
Current account balance (% GDP)	-12.45	6.51	0.5226	0.876	0.4577
Unemployment rate (%)	33.30	7.13	0.2143	0.889	0.1904
Foreign trade balance (% GDP)	-39.57	7.97	0.2014	0.824	0.1660

Source: Authors' calculation

The significance of the factor analysis was confirmed by the Kaiser-Meyer-Olkin measure of adequacy which was 0.814 with the significance level of 95%. Therefore, it can be concluded that the highest risks are the results of the factors of society development and business environment.

Environmental risk can be quantified by the correlation between the energy factors and the level of environmental impact. The environmental impact may relate to pollution of air, water and soil, but concerning the limited availability of the data for evaluation, air pollution was selected through the greenhouse gas emission. The analysis showed that there is a significant causal relation between the energy indicators in BiH and the level of greenhouse gas (GHG) emission. This causal relation was tested for the data over the period 2000-2004 and the results are given in the following Table 5.

Table 5. *Correlation between energy indicators and pollution in BiH*

Description	Emission GHG (Mt CO$_2$)
Primary energy production	0.938*
Net imports	0.726*
Energy consumption due to production	-0.877*
Total final consumption	0.822*
GDP *p.c.* (EUR)	0.978*
Electrical power production (TWh)	0.799*

* = Correlation is significance with the significance level of 0.01 (2-sides).
Source: Authors' calculation

Due to a significant correlation between transformation/consumed energy and GHG, the changes in the energy sector directly influence the level of GHG emission in BiH. The regression model in which GHG is a dependent variable and energy indicators are the independent variable is given in Table 6. The trend of the GHG emission can also be determined by the regression model, which is presented in the following table.

Table 6. *Regression analyses: energy indicators and GHG emission*
Depended variable: GHG emission (Mt CO2)

Equation	Model					Estimated parameters	
	R^2	F	df1	df2	Significance level	Constant	b1
1. Independent variable: Primary energy production							
Linear model	0.881	95.830	1	13	0.000	-1.590	0.007
2. Independent variable: Total final energy consumption							
Linear model	0.675	26.986	1	13	0.000	3.049	0.008
3. Independent variable: Net export							
Linear model	0.528	14.515	1	13	0.002	15.673	0.006
4. Independent variable: Power generation (TWh)							
Linear model	0.639	22.991	1	13	0.000	0.399	1.868

Source: Authors' calculations

Table 7. *Linear regression model and regression equation estimate*
for dependent variable: GHG emission

R	R²		Adjusted R²	Standard error of estimate	
0.980	0.961		0.958	0.805	
Regression equation elements	Unstandardized coefficient		Standardised coefficient	t	p
	B	Standard error	Beta		
b	0.857	0.048	0.980	17.809	0.000
Constant	17.801	0.438		40.686	0.000

Source: Authors' calculations

The obtained values show that the trend in the increase of GHG emission in BiH can be presented as Y=17.801+ 0.857X, where Y is the GHG emission given in millions of tons of the equivalent CO_2, and X is time (year). The given equation also indicated that every year the GHG emission in BiH grew by 857 000 tons of equivalent CO_2 on average.

The presented data lead to the conclusion that the GHG emission is on the increase and has a significant causal relation to energy, which further indicates that there is a high environmental risk in BiH. It is particularly important to mention that the world witnessed the trend of decreased investment into environmental energy projects after the liberalization of the power sector caused by low price of electricity and it is only rational to expect such situation to happen in BiH.

5. Conclusion

The dominant risk in the development of the energy sector in BiH is the political risk reflected in failure of the state to bring appropriate regulations such as:
■ There is not energy sector development strategy on the state level,
■ There are no appropriate regulations for environmental protection.

Other identified risks can be descriptively elaborated due to their characteristics, which were made in the section about risk evaluation. REACCESS can be taken as the measure for the total exposure to the risk in the energy sector. REACCESS is the project in which the factor analysis was used for the

assessment of the influence of risks on energy supply in Europe. The project results are presented in the format from 0% to 100%, where higher percentage indicates higher risk. The total risk related to energy supply in BiH was estimated at 49.75%. Risk evaluation was made based on three factors that influence energy supply:

■ Economic risk (BiH value 29%),
■ Energy induced risk (BiH value 77%),
■ Social-political risk (BiH value 43%).

It can be concluded that business activities within the energy sector in BiH is highly risky. The exposure to risk within the energy sector in BiH is on average twice the size of other European countries.

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Endnotes

1   Public Enterprise "Elektroprivreda BiH" Inc. Sarajevo operates on Federation of Bosnia and Herzegovina territory. Company's core businesses are generation, distribution, and transmission of electrical energy. It is also affiliated for trade, representation, and mediation on domestic power market, international trade, power system management, *etc*. Company is mainly in government ownership and only 10% of it stocks is in own by small investors. Public Enterprise "Elektroprivreda BiH" Inc. Sarajevo have installed power capacity of 1.682 MW, 31% in hydropower plants and 69% in coal power plants.

2   Prices in the period 01/01/2013-25/04/2016

3   pf – hundredth of convertible mark (BAM), the currency of BiH

4   The evaluated risk factor ranges in value from 0 to 1, where 0 is the lowest and 1 is the highest intensity.

5   Distance from good business practice benchmark

6   HDI

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THE CONCEPT OF TRANSDISCIPLINARITY IN ECONOMICS AND FINANCE

KONCEPT TRANSDISCIPLINARNOSTI U EKONOMIJI I FINANSIJAMA

Abstract

The concept of transdisciplinarity is becoming very popular with the increased complexity of problems and solutions that require strong collaboration and expertise across different sciences and disciplines. We can see strong integration trends between various areas of science, arts, technology, and humanities, building up new areas of research and practice in the process. Powerful benefits of the transdisciplinary approach to problem solving are giving us a glimpse into a possible future where an enduring and systematic scientific order will be challenged, blurring the lines between traditionally perceived subjects, sciences, and disciplines. It is evident that with strong development of information and technology and their application, transdisciplinarity is a logical answer to problems that cannot be directly attributed to any particular discipline or field.
The main purpose of this paper is to analyse and discuss the latest transdisciplinary trends and offer a perspective on their impact on scientific research in a rapidly changing world. Special focus is given to the areas of economics and finance and the way the transdisciplinary approach is changing the traditional perception of theory and practice, decision making, and problem solving.
Transdisciplinary solution-oriented approach can benefit many areas of theory and practice as well as provide a new perspective on business structure and dynamics, decision making, communication, and scientific development and collaboration. Transdisciplinarity prompts for the new ways of thinking, motivates the innovative approach to individual and group learning and the exchange of ideas, challenging

traditional schools of thought that support specialisation and development within a single discipline.

Keywords: multi-, inter-, transdisciplinarity, economics and finance

JEL: A19, G00, O30, O31

Sažetak

Koncept transdisciplinarnosti postaje veoma popularan s rastućom kompleksnošću problema i rješenjima koja zahtijevaju snažnu saradnju i ekspertizu (između) različitih nauka i disciplina. Možemo primijetiti jaku integraciju između različitih područja nauke, umjetnosti, tehnologije i humanistike, gradeći time nova područja istraživanja i praksu koja se tek razvija. Moćne koristi pristupa transdisciplinarnosti prema rješavanju problema su "pogled" u moguću budućnost, gdje će rigidni i sistematski red biti izmijenjen, a granice između tradicionalno opserviranih objekata, nauka i disciplina dokinute. Evidentno je da je sa snažnim razvojem informacija i tehnologije i njihovom aplikacijom, transdisciplinarnost logičan odgovor na probleme koji se ne mogu neposredno adresirati ni na jednu posebnu disciplinu ili područje.

Glavna svrha ovog rada je da analizira i diskutuje o posljednjim trendovima transdisciplinarnosti i da ponudi perspektivu o njenom uticaju na naučno istraživanje u svijetu koji se rapidno mijenja. U specijalan fokus bit će stavljena područja ekonomije i finansija i način na koji pristup transdisciplinarnosti mijenja tradicionalnu percepciju teorije i prakse, donošenja odluka i rješavanja problema.

Pristup orijentisan prema transdiciplinarnim rješenjima može donijeti koristi i teoriji i praksi, kao što može obezbijediti novu perspektivu na poslovnu strukturu i dinamiku, donošenje odluka, komunikaciju i naučni razvoj i saradnju. Transdisciplinarnost podstiče nove načine razmišljanja, motiviše inovativan pristup individualnom i grupnom učenju i razmjeni ideja te mijenja tradicionalne škole učenja koje podupiru specijalizaciju i razvoj unutar pojedinih disciplina.

Ključne riječi: multi-, inter-, transdisciplinarnost, ekonomija i finansije

JEL: A19, G00, O30, O31

1. Introduction

Real-life thinking and reasoning is largely transdisciplinary. Business decision-making in today's highly competitive global environment requires strong understanding of several disciplines as well as the ability to integrate highly diverse information into meaningful and useful conclusions. However,

we find that the traditional academic world is still mainly organised and defined by individual, isolated disciplines. Within those isolated academic environments, we see strong silos of discipline-specific processes, practices, and behaviours. Highly specialised scientific research can make this division between individual sciences and disciplines even wider – making it that much more difficult to consider and integrate valuable components of knowledge that might be found outside our usual field of expertise. *While the specialisation gives us confidence that we know a lot about a specific topic, do we truly understand how to apply and integrate this specific in-depth knowledge in the real world? How can we translate this knowledge and speciality into an effective competence?* **They answer is in transdisciplinarity.**

While the concept of transdisciplinarity might be as old as human civilisation, it became an interesting research topic only a few decades ago, with the recognition of the value of multidisciplinary approaches problem-solving when facing scientific and industrial challenges. Still, we continue to impose the traditional subject-based learning to students, starting from an early age and continuing with similar methods of teaching and learning throughout university and postgraduate study. Making fundamental changes to all levels of education will be a very difficult task – considering the mindset-altering goal associated with such a radical shift in our overall approach to education. However, we are more open-minded when it comes to postgraduate and even undergraduate education levels, which should be further explored and encouraged. For example, a postgraduate programme covering financial markets concepts could take on transdisciplinary dimension by integrating strengths across economy, mathematics, technology, physics, psychology, law and finance. The result would not necessarily fall within any of these individual areas, but rather present an integrated "slice" of relevant knowledge needed to maximise learning about the topic of financial markets.

The main purpose of this paper is to analyse and discuss a transdisciplinary perspective in selected fields of economics and finance. More broadly, the paper will emphasize the increasing transdisciplinary quality of scientific research in a rapidly changing world, arising in response to some global challenges associated with information, environmental crises, global trade, migration, poverty, sustainability *etc*. The paper also emphasises the necessity of the transdisciplinary, solution-oriented approach in delivering results that are relevant to academia, science, and industry practice. The transdisciplinary approaches represent a rapidly dominant trend in problem-solving, emerging

as a new school of thought where single-disciplinary or even inter-disciplinary thinking is no longer sufficient. The educators have the primary responsibility in establishing the new approaches to teaching and learning that will embrace and capitalise on the new thinking and decision-making trends, setting the transdisciplinarity as a standard, rather than exception.

2. Theoretical framework

Before we focus on the transdisciplinary transformation in the areas of economics and finance, it is important to note and clarify some important terminology associated with this topic, namely the definitions of disciplinary, multidisciplinary, interdisciplinary, and transdisciplinary terms. **Disciplinary approach**, according to Collins Dictionary (2017), relates to a specific branch of learning. In academic context, this approach relates to traditional subject-based learning and teaching. Disciplinarity is about operating within one discipline, which represents specialisation in isolation. One person may focus their study or activity within one discipline (*e.g.* economics) and handle it successfully within the same area, without the need for knowledge or information from other disciplines (*e.g.* mathematics or psychology).

Many researches tend to give the same meaning to terms such as multidisciplinarity, interdisciplinarity, and transdisciplinarity. Klein (2010) and Gibbs (2015) provide interesting definitions and distinction between those terms. They define **multidisciplinarity** as an approach where information from various disciplines is utilised in order to foster wider knowledge, while keeping each discipline separate in terms of structure, knowledge, and identity (Klein, 2010, p. 17). Multidisciplinarity implies that a person studies, simultaneously or in sequence, more than one area of knowledge (*e.g.* economics and psychology), without making any connections between them.

Interdisciplinarity involves blending of ideas and knowledge from different (often related) disciplines, with an aim of linking different disciplines and topics, while **transdisciplinarity** goes beyond each involved discipline into an overarching synthesis and new unity of knowledge not specific to any individual discipline (Gibbs, 2015, p. 2). Interdisciplinarity implies cooperation between disciplines or compatible areas of knowledge on a common hierarchical level (*e.g.* economics, sociology, and mathematics). Scientific cooperation involves the readiness to engage in cooperation in science, and interdisciplinarity means concrete cooperation with a finite duration. As a consequence of the

concept of interdisciplinarity, transdisciplinarity is intended to suggest that cooperation will lead to an enduring and systematic scientific order that will change the outlook of subject matters and disciplines. It addresses a range of issues (and solutions) which could not sensibly be attributed to any particular academic discipline or field.
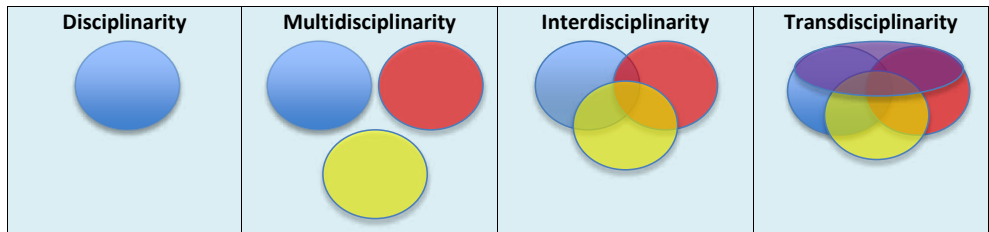
Figure 1. *Disciplinary, multi-, inter-, and transdisciplinary approaches*

Source: Authors' creation

The key element of transdisciplinarity is in the innovative approach to generating new ideas and creating new knowledge. Individual disciplines are no longer seen as sufficiently comprehensive platforms for learning and discovery of all information needed to provide solutions and ideas (see Figure 2). For example, the way in which economics have traditionally been taught at the universities and practiced in real life might not be the most effective way in addressing new contemporary issues and challenges. The key for success is in collaboration with other disciplines and sciences and in innovative generation of new ideas and solutions (Schinckus, 2017, p. 125). Only transdisciplinary approach can penetrate and transform the economistic visions of the world, helping us find solutions, especially for global challenges such as poverty, unemployment or sustainable economic development.
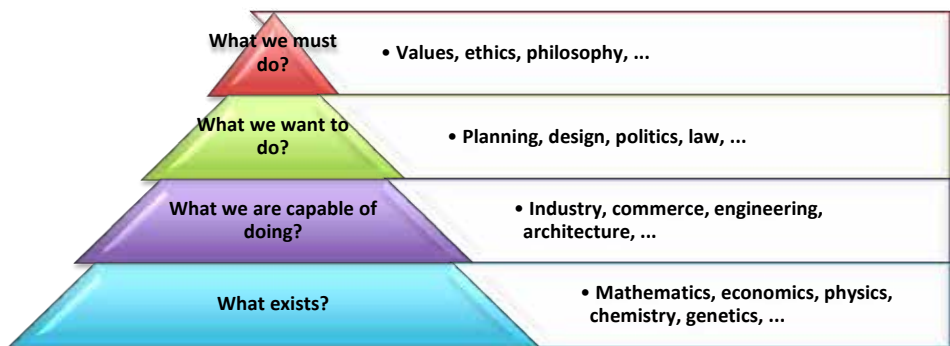
Figure 2. *The transdisciplinary pyramid*

Source: Adapted from (Max-Neef, 2005, p. 9)

3. Literature review

The term "transdisciplinarity" (in French: "transdisciplinaire") was first mentioned by Jean Piaget in 1972, who asked of others to think about its meaning. He described transdisciplinarity as a higher stage *"succeeding interdisciplinarity relationships… which would not only cover interactions or reciprocities between specialized research projects, but would place these relationships within a total system without any firm boundaries between disciplines"* (Piaget, 1972, p. 138).

Many years later, Mittelstraß (2011, pp. 329-338) stated that, within the boundaries of transdisciplinary developments, the individual disciplines do not remain what they were, they at least change their methodical and theoretical perspectives. This definition did not only cover the theories in the narrow sense, it also related to overall disciplines themselves and the idea that they get pulled into the process of research and science in a systematic manner. The transdisciplinarity associated with problems foreign to science (*e.g.* ecological problems), Mittelstraß called "practical" transdisciplinarity, while transdisciplinarity related to strictly scientific problems (*e.g.* nanostructures), was seen as "theoretical" transdisciplinarity.

Max-Neef (2005, pp. 5-16) distinguishes weak and strong transdisciplinarity — weak transdisciplinarity could be applied by following traditional methods and logic, and is essentially practical, while strong transdisciplinarity (which is still in the making) represents an epistemological challenge that introduces quantum logic as a substitute for linear logic, breaking the assumption of a single reality. This particular theory is based on the following fundamental pillars:
- Levels of reality (at least two worlds coexist, quantum and macro-physical);
- The principle of the "included middle" (discipline and transdiscipline not as dichotomies, but as complements that converge and merge without losing their identities), and
- Complexity (the last century has witnessed the appearance of complexity, of chaos, and of non-linear processes in many areas of science).

Augsburg and Henry (2016) suggested a "web of knowledge" approach to transdisciplinarity as a framework for intersectional and integrative knowledge pluralism. They emphasized the following dimensions of transdisciplinarity:
- A process of synthesis of disciplinary concepts, theories, and propositions that results in a broad and reflexive (subject-object) framework for analysis;

- A collaborative process for solving large-scale complex problems within teams, made up from different disciplines and non-academic realm, and
- Inclusion and acknowledgement of the value of shareholders, policymakers, the community, the public and society.

According to Darbellay (2015, pp. 163-174), the inter- and transdisciplinary approaches have certainly experienced and still experience promising advances in education and research, but they also at the same time face institutional, epistemological, and methodological barriers. These obstacles cannot be removed as long as inter- and transdisciplinarity are taken for granted. In the same way, inter- and transdisciplinary research efforts are probably not a form of research in addition to more conventional forms (fundamental, applied, *etc.* research). Instead, they can be seen as a form of research in their own right and should be recognised and valued as such; it must be negotiated and shared among everyone in the higher education system. This initiative can also be seen in the researchers' transformed and hybrid identities that lie between and beyond disciplinary boundaries and participate in the development of a new style of thought.

Simon and Schiemer (2015, pp. 6-11) explored the complexities associated with multi-country, socio-ecological research, and addressed the challenges of moving beyond pure research to engage with the science-policy-practice interfaces (such as inclusive and collaborative research). Growing demand for such applied research by official funding agencies is linked to the requirements of policy relevance and "research impact". Successfully applied research requires an ongoing user engagement throughout a project, which is often hard to achieve, especially when diverse stakeholders have sharply different power, knowledge, and interests. Clear impact agendas could be useful for strengthening efforts to achieve transdisciplinarity, but research applications should not be penalised because of the inherent risks and uncertainties.

In support of the thesis statement that in practice transdisciplinarity is still considered ambiguous, Thomson *et al.* (2017, pp. 30-39) presented their findings of qualitative surveys and group interviews that investigate stakeholder and scientist perspectives on transdisciplinary or collaborative research. The study revealed the first stage of longitudinal research that would continue over the course of the project. Results showed that early actors in the project often maintain the same overall understanding of co-created research. This collaborative process integrated not only diverse people

and their knowledge, it also created benefits on both a social and personal level, while fostering clear, two-way dialogue and overcoming pragmatic and intrinsic challenges. Collectively, the participants agreed that adopting transdisciplinary approaches to their research efforts into natural hazards, risks, and resilience research produced good results and was highly beneficial. In addition to positive results, some underlying conflicts also emerged, mainly related to carrying out new modes of knowledge production within traditional social and institutional structures. The authors emphasised the importance of self-critical processes of reflexivity in transdisciplinary practice as well as a fundamental reorientation in the academic and funding system in order to challenge the existing knowledge practices.

Brown (2015, pp. 209-216) highlighted that in the era of global flows of population, resources, finance, and information are forcing open boundaries of space and time that have been established over the two million years of human evolution. People are taking part in other cultures in unprecedented numbers, thanks to the advantages of global travel and information exchange. Global trade is generating extraordinary distribution of physical and human resources. Information has the possibility of becoming almost a free commodity, thanks to the Internet, open source providers, and on-line whistle blowers. It could be argued that the conditions are in place for the fulfilment of Pierre Teilhard de Chardin's prophecy: an evolutionary move towards a collective mind. But, as Thomson Klein (2014, pp. 68-74) claimed, *"predicting the future of transdisciplinarity is as tricky as predicting the future itself"*. So far, discourse analysis has revealed a clear historical shift from traditional epistemology to problem solving, from the pre-given to the emergent, and from universality to contextuality and subjectivity.

4. Transdisciplinarity in economics and finance

Economics and finance have demonstrated strong development over the past century in both theory and practice, especially with the improvements in information exchange, globalisation trends, and social and political changes. Traditionally, economics and finance successfully collaborate with behavioural and social sciences as well as utilise mathematical concepts and political aspects of society. Transdisciplinary approach to managing and researching economic and finance provides additional opportunities for discovery and problem-solving as well as innovation.

4.1. Behavioural economics and finance

Economics and finance are closely related to human behaviour. Economic and financial decision making is directly dependent on human perception of their surroundings, and can be seen as response to the analysis and assessment of various elements that ultimately influence value of financial assets, market prices, and economic development. This influence of human behaviour on financial development has become quite popular among the researchers in 1990s, so much that it contributed to the development of new disciplines, such as behavioural economics and finance. Behaviourism is a direction in psychology (Watson, 1913, pp. 158-177), which defines learning as nothing more than the acquisition of new behaviours based on environmental conditions and preferences.

Behavioural finance deals with the exploration of human psychology, namely relating to the way people make irrational financial decisions and the factors that might be the influencers. This issue is especially relevant in the context of the causes and consequences of the global financial crisis in 2008. Behavioural finance can be very well explained through the **"Black Swan"** events phenomenon. Typical examples of the "Black Swan" events are extreme and hard to predict events that deviate from what is considered normal situation. For example, events such as terrorism acts, extreme weather changes as well as the emergence of financial crises – are considered to be great risks faced by society and the economy, but hard to predict and even harder to mitigate. The occurrence of the "Black Swan" most commonly has following three main features (Taleb, 2007, pp. xvii-xviii): (a) unusual and unpredictable; (b) it has an extreme impact; (c) despite unpredictability, the human nature subsequently seeks to explain this phenomenon, attempting to make it explainable and predictable.

However, traditional financial theories are based on the assumption that the intermediaries within the economy are rational in two ways – they make decisions in accordance with the theory of expected utility and they make unbiased forecasts of the future. In other words, they form expectations in line with probability laws and constantly adjust and update it when new information comes from the market. We can see that the traditional finance is closely associated with the modern portfolio theory (Markowitz, 1952, pp. 77-91) and the theory of efficient markets (Fama, 1970, pp. 383-417). Traditional financial theories are based on the fact that economic intermediaries (*homo economicus*) make rational decisions on the basis of all

available information and that therefore financial markets are efficient, while theories of behavioural finance consider that normal participants, *i.e.* ordinary, reasonable people (*homo sapiens*) are not always rational in processing and interpretation of available information. Therefore, there are numerous, more or less explicit **anomalies** in the behaviour of participants in financial markets. Limited rationality is a consequence of the incomplete human knowledge due to the lack of information and/or the inability to process the acquired information. Herbert A. Simon (1979, pp. 493-513), who introduced the concept of **"bounded rationality"**, is considered the greatest contributor in the analysis of this phenomenon, stressing the fact that people have limited cognitive abilities and possibilities of perceiving and comparing all available information or developing alternatives and acquiring knowledge about the future, due to incomplete skills in processing all available information.

Authors who gave special theoretical and empirical contributions to behavioural economics and finance are Daniel Kahneman, Amos Tversky, and Richard H. Thaler. Kahnman's research focuses on human cognitive errors, showing that, even though people think that they act cognitively well, the evidence suggests that systematic cognitive errors are constantly being made. **Kahneman and Tversky** are considered the pioneers of behavioural economics and finance. Since their collaboration in 1969, this duo has published over 200 scientific papers, most of which relate to psychological concepts with implications on behavioural finance. These authors have carried out various experiments in order to check the descriptive character of rational human behaviour. They have pointed out many heuristics (such as prejudice, emotional effects, and social influence) and preferences in human behaviour. Their work became the backbone of the decision-making theory, providing a deep insight into the psychology associated with the risks and returns, which consists of prospect theory, heuristics, and assumptions. The **prospect theory** (Kahneman, Twersky, 1979, pp. 263-292) describes how people make decisions when facing risky alternatives, while heuristics and other assumptions describe, among other things, how people assess the risk. Prospect theory supports behavioural approaches related to portfolios, while heuristics and other assumptions support asset pricing. It provides a structured approach to financial behaviour, for example: how individual investors build portfolios, how managers make corporate financial decisions, how prices reflect systemic assumptions *etc*. In 2002, Kahneman won the Nobel Prize for having *"integrated insights from psychological research into economic science, especially regarding human judgment and decision-making under uncertainty"*.

Even though Kahneman and Tversky founded early psychological theories that formed the basis of behavioural finance, the very branch of behavioural finance would not have had developed without another important economist by the name of **Thaler** (1980, pp. 39-60). Thaler was also aware of the shortcomings of conventional economic theories because they were related to human behaviour. After studying the results of the prospect theory of Kahneman and Tversky, Thaler discovered that, unlike conventional economic theories, psychological theories could explain the irrationality of behaviour. Furthermore, Thaler collaborated with Kahneman and Tversky (1977 and 1978), combining economics and finance with psychology, introducing concepts such as mental accounting, among others. In the late 1980s and early 1990s Thaler also began to apply behavioural approach to problems outside financial economics. As a result, a new field quickly developed and finally in 1994 it was defined as a behavioural economics (Thaler, 1994).

The most important critic of the behavioural finance is Eugene F. Fama, the founder of the theory of efficient markets, who argued that, while there are some anomalies that could not be explained by modern financial theory, market efficiency should not be abandoned completely and turned into behavioural finance. He also claims that many of the anomalies that have arisen in conventional theories can be considered short-term events that might have been corrected over time. In his paper, Fama (1998, pp. 283-306) criticizes the contradictory nature of the invention of behavioural finance and considers it to be a list of anomalies that can be explained through market efficiency. Singh (2010, pp. 1-9) emphasizes that the criticism of behavioural finance is also present in too much emphasis on the irrationality of individuals, while other authors pointed out that it would be important to understand that the market does not function in the way that classical models function.

However, the professional financiers who understand behavioural finance will also understand their own behaviour and use it to adjust and improve their decisions. Institutional investors who understand behavioural finances will understand both the beliefs and motives of their clients and provide them with better service and education. Behavioural finance might experience a reversal of the appearance of some anomalies that could not be explained by the traditional financial theories, for example January effect, winner's curse, premium for systemic portfolio risk, *etc*. (Brajković & Radman Peša, 2015, pp. 65-93). If we reflect on the earlier definition of transdisciplinarity, where the results of the collaboration across different disciplines provides a new

overarching synthesis and creates a new knowledge, **we can recognise a great opportunity to apply transdisciplinary approach to the various views and implementation of behavioural finance and economics and find some new ways of how human behaviour can be analysed, interpreted, and predicted in favour of further development of economics and finance.**

4.2. Econophysics

The econophysics (economic physics) is a new, transdisciplinary research filed where the development of physics is used in economics and finance problem-solving, as the name indicates. Econophysics term was derived was introduced by **H. Eugene Stanley** at an international conference on statistical physics held in Kolkata, in 1995 (Rosser, 2016, p. 3092). This physicist perpetuated a methodological trend initiated by Santa Fe Institute in the 1980s, which largely contributed to the study of dynamic complexity, which is dynamics of non-simple systems composed by a high number of interacting elements. From the statistical physicists' viewpoint, power laws were synonym for complex systems. This particular methodological orientation gave econophysicists the opportunity to develop a specific knowledge outside of classical economics (*i.e.* classical economic theoretical constraints in terms of methodological individualism, agents' perfect rationality, the Gaussian framework, arbitrage, *etc*.) and, at the same time, adopt a boundary macro-perspective on financial data.

Research conducted in the field of econophysics Schinckus (2013, pp. 3655-3658) decomposed into two different computational and co-existing approaches − **"statistical econophysics"** or the original econophysics [often associated to what Nicholas Kaldor (1961, p. 178) first called *"'stylized' view of the facts"* in the economics] and **"agent-based econophysics"** (founded on a micro-approach since it uses agent-based modelling). The later approach Schinckus (2016, pp. 3300-3309) divided into bottom-up agent-based econophysics and top-down agent-based econophysics. While statistical econophysics aims at fitting historical data for description (backward-looking), the bottom-up agent-based econophysics algorithmically reproduce data for predictive purpose (forward-looking). Aiming at combination of fitting and reproducing data for a predictive purpose, top-down agent-based econophysics provides a modelling that requires a set of initial conditions and also combines the conditions used by statistical econophysics and bottom-up agent-based econophysics.

According to Drakopoulos and Katselidis (2015, pp. 77-78), the work of **Francis Ysidro Edgeworth**, a contemporary of Alfred Marshall, represents the highest point of classical physics influence on the development of the mainstream economic methodology. Edgeworth made various contributions to economics, especially in the areas of intermediaries, international trade, taxation, monopoly pricing, marginal productivity theory, and limit theorem. Edgeworth's research is specifically interesting, knowing that his contributions were made in late 19th and early 20th century, well before the recognition of the importance of transdisciplinary aspect of economics and finance. Other notable contributors in the area of physics and economics are **Vilfredo F. D. Pareto** (known for Pareto's Principle), **Irving Fisher** (known for his work on utility theory and general equilibrium), and **Paul A. Samuelson** (the first US recipient of the Nobel Memorial Prize in Economic Sciences).

Since its foundation, econophysics was intrinsically linked to **seeking extreme events in financial series ("fat tails") and using power laws to describe them.** This type of study was marginalized or little considered by most economists, since the main economic assumptions were built based on the bell-shaped Gaussian distribution, where large deviations were almost impossible. However, the results found by econophysics indicate that such extreme events are not so rare (de Area Leão Pereira & da Silva, 2017, p. 254), *i.e.* the 1987 crisis, when the Dow Jones index fell 22.6%, or the global financial meltdown 2008, with 6.98% fall, the largest point drop in any single day in history (29/9/2008). In other words, the fat-tailed dimension of financial distribution is probably the oldest "stylised fact" in finance and it is related the origin of econophysics. Correlations and autocorrelations between economic/financial variables (*i.e.* stock prices, returns, order signs, transaction volumes, *etc.*) can be looked on as another "stylized fact" studied by the econophysicists. The Gaussian framework used in the financial mainstream implies an absence of autocorrelation for independent and identically distributed financial returns, meaning that their statistical features do not depend on the timeline. However, empirical data shows that statistical properties of distributions change with time (Schinckus, 2016, p. 3300). According to Ormerod (2016, p. 3283), by 2000, econophysicists had come to the following **powerful findings**:

■ The statistical distribution of asset price changes was fat tailed (or fat-tailed empirical distribution of returns at their extremes, which means very large gains and losses are far more likely to occur than originally assumed);

■ The empirical correlation matrix of asset price changes, whether of asset classes or of individual assets, was poorly determined (absence of autocorrelations of returns).

Since the bestselling book **"The Black Swan: The Impact of the Highly Improbable"**, written by Nicholas Nassim Taleb (2007, pp. 229-252), the "disproportionate role of high-profile, hard-to-predict and rare events that are beyond the realm of normal expectations in history, science, finance, and technology", has moved into public awareness, thereby contrasting previous bestsellers focusing on Gaussian distributions (Kleinert, 2014, p. 546). Other properties (*e.g.* volatility clustering, aggregational normality) confirmed the insufficiency of many classical stochastic models of financial assets. For example, the volume of orders in the whole order book structure, interval time between the orders, intra-day seasonality *etc.*, are essential phenomena to be understood when working in financial modelling and taken into account in an integrated manner, by high-frequency financial database (Chakraborti *et al.*, 2011, pp. 991-1009). Econophysicists generally claim to take a more data-driven approach, they are *"the ones who started to systematically work through the consequences of the fat tails"* (Cho, 2009, p. 408).

According to Zapart (2015, pp. 318-326), financial markets are driven by crowd behaviour, by fear, and greed of irrational short-term traders, *i.e.* by subjective psychological phenomena that are often erratic. Econophysics may offer some models and tools for expressing subjective human behaviour in quantitative ways. Similarly, extreme events and crashes still happen, and will keep coming with regularity for the foreseeable future, since human nature never changes. Zapart showed that the central theoretical assumption underpinning prevailing economic theories (operating on time scales of hours and days) is violated on a small time-scales (minutes and seconds). He also demonstrated how an alternative behavioural econophysics can model reactions of market participants to short-term movements in foreign exchange markets and, in a direct contradiction of the orthodox economics, design an automated trading system.

Ausloos, Jovanovic, and Schinckus (2016, p. 14) clarified that econophysics and financial economics have more in common than generally suggested in the literature. Part of their research shares a calibration approach rooted in a bottom-up method, although their approaches remain different. Concerning the efficient market hypothesis (itself consistent with the random walk

hypothesis), by making a clear distinction between this hypothesis and the Gaussian processes, the two disciplines can easily focus on mutual goals. Common research is necessary in order to reduce the gap between the two frameworks and to develop constructive collaborations. Jovanovic and Schinckus (2016, p. 256-266) identified what remains to be done for econophysicists to contribute significantly to financial economics:

■ Development of a common framework/vocabulary in order to better compare and integrate the two approaches,

■ Development of generative models explaining the emergence of power laws, and

■ Development of statistical tests for the identification of such statistical regularities.

Over the past decade, we can see evidence of econophysics expanding rapidly, focusing on various phenomena that occur in the economy in general, not only in the financial markets. Today, there are applications of instruments such as: power laws, agent-based models, long term memory, cross-correlation, complex networks, fractal analysis *etc.* in different areas of the economy, for example macroeconomics, microeconomics, organisational theory, income distribution, *etc*. **This significant progress gives a new motivation for further collaboration between physics and economics and finance, especially by applying transdisciplinary approach to integrating various aspects of physics development, behavioural science, and other disciplines with economics and finance.**

4.3. Data and information sciences in economics and finance

Economics and finance practices have been strongly impacted by the development of information technology and data science, particularly the **big data** trends (Einav & Levin, 2014, p. 715). Analytical calculations, simulation and predictive modelling are just some of the essential applications made possible due to technology development and scientific research associated with information. In addition to numerous tools developed by technology providers, we also see the emerging trend of newly created roles narrowly specialised in both technical solutions and business side of economics and science (Mattmann, 2013, p. 474).

Data science is considered a transdisciplinary field and its application in economics and finance fields brings many benefits, as it enables combination

of relevant information and advancements from many sciences, disciplines and technology with business, economic and financial concepts, bringing vast advantages to decision-making and analytical processes for organisations and individuals. For example, Pilkington (2011, p. 369), highlights the benefits of transdisciplinarity when analysing the nature of the sovereign debt crisis. Combining various fields such as logic, accounting, finance, psychology, geopolitics, economics, statistics, ethics, rhetoric and political discourse analysis are consolidated into analysis, resulting in multi-dimensional, higher quality results then when operating solely within one discipline.

Transdisciplinarity, globalisation of economy and information exchange have also been the main contributors to the rapid progress in the areas of enterprise sustainability, integrating economic, ecological and social dimensions, transcending traditional geographical and national boundaries (Shrivastava, Ivanaj & Persson, 2013, p. 237).

There are many applications focused on data analytics that utilise diverse set of indicators and methods from various disciplines. **Those analytics solutions support finance industry in stock forecasting, portfolio management, investment risk analysis, customer analysis, product development, detections of financial fraud as well as in predictive analytics of bankruptcy, loan repayments, corporate performance and foreign exchange rates (Perić, Polić & Kozarević, 2016, pp. 1078-1090). Without transdisciplinary angle, these analytics would not be as comprehensive in providing input into effective decision-making.**

5. Concluding remarks

Historically, **economics and finance have many useful correlations with other disciplines and sciences, which created new sub-disciplines and areas of specialisation**. The new challenge for economics and finance is to capitalise on the development in transdisciplinary thinking and implement a new, progressive mindset in both education and industry, leading the innovation efforts beyond classical and traditional approach, with an aim to revolutionise both theory and practice. The key enablers of the transdisciplinary application in economics and finance are data science (including big data) and information technology, empowering development and utilisation (through automation) of complex models, calculation, comparisons and integrated analysis of information from various sources.

This paper has noted some important examples of transdisciplinary achievements and benefits associated with economics and finance, emphasising that research within one science area or discipline is no longer sufficient in today's globalised and highly integrated economic and social world. Any responsible decision-maker will recognise that, in order to make sound and effective decisions, it is necessary to apply transdisciplinary approach and integrate knowledge, information and ideas across many areas of human specialisation and activity. Therefore, **transdisciplinary approach is becoming an integral and essential part of the new way of thinking in education, research and industry application, creating new career paths and specialisation areas across different sciences, disciplines, theories and practices**.

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EVALUATING THE IMPACT OF INTERNAL REMITTANCES ON FINANCIAL INCLUSION – EVIDENCE FROM BOSNIA AND HERZEGOVINA

EVALUACIJA UTJECAJA INTERNIH DOZNAKA NA FINANSIJSKU INKLUZIJU – DOKAZI IZ BOSNE I HERCEGOVINE

Abstract

Research and policy debates on international remittances have grown over the last few decades. As remittances are more stable than all other external flows (foreign direct investments and official development assistance), governments attempt to harness these resources. By contrast, discussion on internal remittances is rather non-existent, mostly because of the lack of statistical data, difficulty to capture the flows through informal channels and lack of understanding of internal remittance importance.

It is argued that remittances (both external and internal), as stable sources of income, contribute to savings as well as to increase of financial inclusion of individuals who receives remittances. This paper is expected to provide an answer to the question whether individuals who receive remittance more likely to use bank accounts and other services (e.g. loans, debit cards, credit cards etc.) offered by financial institutions than those who do not receive them.

Therefore, this paper aims to address the impact of internal remittance on financial inclusion of individuals in Bosnia and Herzegovina (BiH). As a data source, we use World Banks' Global Findex data set from 2014.
We estimate logistic regression models with a set of dummy dependent variables for financial inclusion, i.e. having bank account, having debit card, having credit card, borrowing and savings, and regress them on receipt of internal remittance. It is expected that research results will contribute to better understanding of the relationship between internal remittances and financial inclusion in BiH.

Keywords: internal remittances, financial inclusion, Bosnia and Herzegovina

JEL: C5, F24, G2

Sažetak

U zadnjih par decenija sve su prisutnija istraživanja i političke rasprave o doznakama iz inostranstva u najširem smislu riječi. Budući da se radi o stabilnijim oblicima prihoda od, primjera radi, direktnih stranih ulaganja ili službene razvojne pomoći, nadležni nivoi vlasti pokušavaju da iskoriste taj resurs. Nasuprot tome, rasprava o internim doznakama je skoro nepostojeća, uglavnom zbog nedostatka statističkih podataka, poteškoća u praćenju toka novca kroz neformalne kanale i nedostatka razumijevanja važnosti internih doznaka.
Uvriježeno je mišljenje da doznake generalno (interne i eksterne), kao stabilan izvor prihoda, doprinose štednji te ujedno povećavaju finansijsku inkluziju onih koji ih primaju. S tim u vezi, u radu se nastoji dati odgovor na sljedeće istraživačko pitanje: Da li je više vjerovatno da pojedinci koji primaju doznake više koriste bankarske proizvode (kao što su zajmovi, debitne i kredite kartice itd.) od onih pojedinaca koji ih ne primaju?
Stoga, osnovni cilj ovog rada je da objasni utjecaj internih doznaka na individualnu finansijsku inkluziju u Bosni i Hercegovini (BiH). Da bi se dao odgovor na ovo istraživačko pitanje koristiće se podaci iz baze Svjetske banke, konkretno Global Findex, iz 2014. godine. Estimacija modela logističke regresije će se izvršiti na setu zavisnih dummy varijabli koje reprezentuju finansijsku inkluziju (posjedovanje bankarskog računa, kreditnih i debitnih kartica, štednja i zaduživanje) i nezavisne varijable koja se odnosi na interne doznake. Očekivani rezultati bi trebali da doprinesu boljem razumijevanju između internih doznaka i finansijske inkluzije pojedinaca u BiH.

Ključne riječi: interne doznake, finansijska inkluzija, Bosna i Hercegovina

JEL: C5, F24, G2

1. Introduction

In developing countries remittances are important source of income for individuals for several decades now. For those individuals, especially in the low-income groups which are in most of the cases unserved by the formal financial services, it is argued that remittances can be a catalyst for financial inclusion. Financial inclusion in the context of this paper refers to usage of different financial products and services offered by formal financial institutions (most commonly, commercial banks) such as checking accounts, savings instrument and credits.

We argue that remittance, when transferred through financial system channels using payment system might encourage remittance recipient to interact more with financial institutions. Also, we argue that due to the improvement of financial position of remittance recipients, it is more likely that they would change their savings habits and start savings.

Extensive literature investigates effects of remittances on labour market (*e.g.* Acosta, 2006), economic growth (*e.g.* Funkhouser, 1992; Aggarwal *et al.*, 2011; Shera & Meyer, 2013), inequality (*e.g.* Collins *et al.*, 2009), poverty (*e.g.* Rutherford, 2000; Gupta *et al.*, 2009), education (*e.g.* McKenzie & Rapoport, 2006; Osorio, 2010), while there is quite a few researches showing the impact of remittances on financial inclusion of individuals (and households).

Having in mind that financial inclusion of an individual or household is measured by having an account in formal institution, existence of savings in financial inclusion as well as the ability to borrow, most of the research on impact of remittance on financial inclusion provides pieces of evidence of positive impact of remittances on bank deposits in recipients countries (Aggarwal *et al.*, 2006) and savings (Anzoategui, 2014; Cuccaro, 2014), while there is either no association between remittances and borrowing (Anzoategui, 2014; Cuccaro, 2014). Furthermore, interesting new evidence on remittances and finance has been provided by recent experimental research. Ashraf *et al.* (2011) use a randomized field experiment to investigate the importance of migrant control over the use of remittances and found that the treatment that offered migrants the greatest degree of control over savings at a bank in their home country had the highest impact on savings accumulation, as compared to groups offered less or no control over savings. These results are supported by another randomized study which offered migrants the possibility to save in

the US and found that it raised savings, suggesting that issues of control affect intra-household resource allocations (Chin *et al.*, 2011). A study from Ireland reported that increased communication between migrants and their families increased the values of remittances, also attributing these results to enhanced migrant control and trust (Batista & Narciso, 2013).

All above mentioned research provides evidences of external remittances impacting financial inclusion but still literature lack of evidence weather internal remittances could have similar effects as well.

The main incentive for analysing internal remittances is the fact that internal migration (migration from rural to urban places within the countries) are increasing over time. Internal migrants who move to urban places are likely to have more paying jobs and are able to send remittance to their families who stayed in rural or less developed part of the country.

This paper discusses weather individual remittance receivers are more included in to financial system and weather they save more. In other words, the main goal of the paper is to provide theoretical framework and empirical evidences of the impact of internal remittances on the increase in financial inclusion of remittance recipient. In order to investigate the relation between internal remittances and financial inclusion this paper seeks to answer two main questions: (1) are individuals who receive internal remittance more likely to save money than individuals who do not?, and (2) are individuals who receive internal remittance more likely to use bank accounts and other services (*i.e.* loans, debit cards, credit cards, *etc.*) offered by financial institutions than those who do not receive them?

The rest of the paper is organized as follows. In the second part of the paper empirical models are described as well as data set. The third part of the paper presents the results of models estimations discussion. While in the fourth part of the paper concludes and further research recommendations are presented.

2. Data and the empirical model

2.1. Data source

For the purposes of this research, we used secondary data which were collected through World Banks' Global Findex. The survey was carried out

over the 2014 calendar year by Gallup, Inc. as part of its Gallup World Poll, which since 2005 has continually conducted surveys of approximately 1,000 people in each of more than 160 economies and in over 140 languages, using randomly selected, nationally representative samples. The target population is the entire civilian, noninstitutionalized population age 15 and above (World Bank, 2014a). The sample size for Bosnia and Herzegovina was 1,001 individuals (World Bank, 2014b), but after deleting missing values in the sample, the sample was reduced to 972 surveyed individuals. Table 1 shows summary of the sample characteristics.

Table 1. *Summary statistics of the sample*

Demographics		Frequency	Percent
Gender	Male (1)	390	40.12%
	Female (0)	582	59.88%
Education	Primary or less (1)	321	33.02%
	Secondary (2)	544	55.97%
	Tertiary or higher (3)	107	11.01%
Income level	Poorest 20% (1)	171	17.59%
	Second 20% (2)	141	14.51%
	Middle 20% (3)	202	20.78%
	Fourth 20% (4)	216	22.22%
	Richest 20% (5)	242	24.90%

Source: Authors' research

The age of the surveyed individuals was 15 to 92 years, while the average age was 48.46 years (std. dev. 18.964).

2.2. Probit regression model

Based on the similar research focused on the external remittances (Anzoategui *et al.,* 2014; Cuccaro *et al.*, 2014; Li *et al.*, 2014), for investigating the impact of internal remittances we propose the following model:

$$Financial\ inclusion_{ij} = \alpha + \beta_1 Remittances_{ij} + \beta_2 Age_{it} + \beta_3 Education_{ij} + \beta_4 Gender_{ij} + \beta_5 Income_{ij} + \varepsilon_{ij},\ (1)$$

where i denotes financial inclusion indicator and j denotes individual.

Financial inclusion is defined in terms of five alternative variables. Definitions of these alternative dependent dummy variables are given in Table 2. All dependent variables are binary variables, hence the reason why logistic regression model was used.

Table 2. *Financial inclusion variable definitions*

Financial inclusion variable	Definition of variable
Account at financial institution	Whether the individual has a deposit account at a formal financial institution
Debit card	Whether the individual has ATM/debit card at a formal financial institution
Credit card	Whether the individual has credit card at a formal financial institution
Borrowing	Whether the individual has borrowed money from any source for any reason in the past 12 months
Savings	Whether the individual has saved or set aside any money for any reason in the past 12 months.

Source: Authors' research

Remittances refers to a dummy variable indicating whether the individual received internal remittances (domestic remittance) in the given year.

Based on the alternative variables determining financial inclusion, we test five probit regression models.

$$Deposit\ account\ at\ financial\ institution_{ij}= \alpha+\beta_1 Remittances_{ij} + \beta_2 Age_{it} + \beta_3 Education_{ij} + \beta_4 Gender_{ij} + \beta_5 Income_{ij} + \varepsilon_{ij}, (2)$$

$$Debit\ card_{ij}= \alpha+\beta_1 Remittances_{ij} + \beta_2 Age_{it} + \beta_3 Education_{ij} + \beta_4 Gender_{ij} + \beta_5 Income_{ij} + \varepsilon_{ij}, (3)$$

$$Credit\ card_{ij}= \alpha+\beta_1 Remittances_{ij} + \beta_2 Age_{it} + \beta_3 Education_{ij} + \beta_4 Gender_{ij} + \beta_5 Income_{ij} + \varepsilon_{ij}, (4)$$

$$Borrowing_{ij}= \alpha+\beta_1 Remittances_{ij} + \beta_2 Age_{it} + \beta_3 Education_{ij} + \beta_4 Gender_{ij} + \beta_5 Income_{ij} + \varepsilon_{ij}, (5)$$

$$Saving_{ij}= \alpha+\beta_1 Remittances_{ij} + \beta_2 Age_{it} + \beta_3 Education_{ij} + \beta_4 Gender_{ij} + \beta_5 Income_{ij} + \varepsilon_{ij}, (6)$$

Table 3 provides descriptive statistics of variables.

Table 3. *Descriptive statistics*

Variable	Obs	Mean	Std. dev.	Min.	Max.
Internal remittance	972	.0915638	.2885577	0	1
Account at financial institution	972	.5493827	.4978115	0	1
Debit card	972	.3569959	.4793602	0	1
Credit card	972	.0936214	.2914512	0	1
Saving	972	.2674897	.4428778	0	1
Borrowing	972	.2572016	.4373165	0	1

Source: Authors' research

The estimation of the effect when Remittances switches from 0 to 1 is calculated by considering the Marginal Effects at the Means (MEMS) of the control variables.

Goodness of model fit is judged by McFadden's Pseudo R². According to the existing literature (Louviere *et al.*, 2000), goodness-of-fit using McFadden's pseudo r-square (ρ^2) is most often used for fitting the overall model. It is suggested that ρ^2 values of between 0.2 and 0.4 should be taken to represent an excellent fit (McFadden, 1978, p. 307).

3. Results and discussion

Table 4 shows estimation results for the impact of internal remittances on the likelihood that an individual has an bank account, debit card and credit card, and if he/she borrowed or saved money.

Table 4. *Remittances: dummy for whether the individual receives domestic remittances*

	Bank Account	Debit Card	Credit Card	Borrowing	Savings
Remittances	.2615143 (.1488304)*	-.1070643 (.1510109)	.1571792 (.1953101)	.3892776 (.14481)**	.2776072 (.1464026)*
Gender	.2576927 (.0905579)**	.2642798 (.0909799)**	.3693616 (.1247238)**	-.1701576 (.0953863)*	.0516986 (.0939865)
Age	-.0038218 (.0024388)	-.0085113 (.0025176)***	-.0105198 (.0036007)**	-.0043721 (.0026557)*	-.0028672 (.0025705)
Income2	.2331213 (.2331213)	.1560888 (.1570706)	-.0569446 (.2777679)	-.0492331 (.1587594)	.2977947 (.1696599)*

Income3	.4196482 (.1356173)**	.3315312 (.1428565)**	.4438639 (.2227885)**	-.0394481 (.1445554)	.4332971 (.1546986)**
Income4	.2515191 (.1345073)*	.3189668 (.142365)**	.3842408 (.2223618)*	.006047 (.1424193)	.6175055 (.1511114)***
Income5	.6816526 (.1345535)***	.5120707 (.1381515)***	.7416158 (.2085259)***	-.0135577 (.1401385)	.6877742 (.148701)***
Education2	.3315334 (.1030867)***	.2835026 (.1097066)**	.3443214 (.175367)**	.4249638 (.1156533)***	.0894634 (.1123156)
Education3	1.173134 (.1741963)***	.9614457 (.9614457)***	.7846961 (.2087193)***	.6469489 (.159653)***	.2165821 (.1572238)
Log likelihood	-604.48304	-578.23519	-266.93672	-532.56707	-544.42311
Observations	970	970	970	970	970
LR chi2	126.62	106.25	70.00	41.97	38.88
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R^2 (Mc Fadden's pseudo ρ^2)	0.0948	0.0841	0.1159	0.0379	0.0345

Note: Robust *t*-statistics are shown in brackets. *, **, and *** denote significance at 10%, 5%, and 1%, respectively.

Source: Authors' research

Results of the probit regression models show that overall models are statistically significant (Prob > chi2), while McFadden's pseudo ρ^2 is not excellent but for variables account, debit credit card and credit card can be interpreted that the model is rather good.

The results indicate statistically significant and positive relation between for bank account borrowing and savings, while negative relation was detected for debit card and borrowing but statistically insignificant.

As the coefficients obtained from probit regression models only tells us that our as a whole is statistically significant, that is, it fits significantly better than a model with no predictors, the marginal effects at the mean are calculated and reported in Table 5. Marginal effects measure discrete change, *i.e.* how do predicted probabilities change as the binary independent variable changes from 0 to 1 (Williams, 2017, p. 1).

Table 5. *Marginal effects at the means (MEM)*

	Bank Account	Debit Card	Credit Card	Borrowing	Savings
Remittances	.1007549 .0554834*	-.0386549 .0534135	.022579 .0306174	.1351199 .0538512**	.0959795 .0533962*
Gender	.1010197 .0351531**	.0979789 .0338657**	.0512257 .0182783**	-.0533069 .0294864*	.0168151 .0306635
Age	-.0015083 .0009626	-.0031316 .0009253***	-.0013744 .0004616**	-.0013863 .0008412*	-.0009296 .000833
Income2	.0924754 .0580402	.0515446 .0519853	-.0039091 .0189643	-.0155334 .0499984	.0765974 .0439247*
Income3	.1661861 .0529341**	.1147859 .0486543**	.0478545 .0233022**	-.0124881 .0458127	.1183035 .0409942**
Income4	.0998082 .0530389*	.1100993 .0483321**	.0393426 .0219945*	.0019437 .0457676	.181069 .0419043***
Income5	.2642116 .0505679***	.1841436 .0477492***	.10201 .0258546***	-.0043297 .0447871	.2065929 .0413608***
Education2	.1316591 .0405603***	.0982894 .0370267**	.0384027 .0178159**	.1252251 .0322206***	.0284472 .0353987
Education3	.4092929 .0488178***	.3634053 .0564226***	.1233045 .0376383***	.2050888 .0535878***	.0716591 .0532133

Source: Authors' research

Table 5 shows that individuals who receive remittance are 10% more likely to have a bank account than those who do not have. Also, it is 13.51% likely that individuals who receive remittance will borrow from financial institutions and 9% is more likely that they will save money at financial institution.

4. Conclusions

As the result of migrations, both domestic and international, remittances have become an important source of income for individuals in developing countries. This has raised numerous of questions among academics how remittances impact economic development of remittance recipient countries as well as how remittances impact the life of a remittance recipient and it's household. Today, most of the researches focus on external remittances, while there little or no evidences on internal remittances.

This particular study investigate impact of internal remittances on financial inclusion in Bosnia and Herzegovina using data from World Bank's Global Findex survey carried out in 2014. We analysed the impact of internal remittances on the likelihood that individual will use financial services such as bank account, debit card, credit card, savings and borrowing instruments.

Research results show statistically significant and positive relation between remittances and owning bank account as well as borrowing and saving. Furthermore, results suggest that female remittance recipients are more likely to use financial services than male remittance recipients. Results show that remittance receiving individuals with higher level of education are more likely use financial services as well as remittance receiving individuals in higher income groups. In respect to age differences, an interesting conclusion can be made that it is more likely that younger remittance recipients are more likely to use financial services.

It is important to emphasise that due to the given structure of the data it was not possible to address concerns about endogeneity, therefore presented results could be biased due to reverse causation. In this respect the intention of the authors is to conduct a more in-depth analysis starting with collection of data at national level including instrumental variables for controlling for endogeneity.

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THE EFFICIENCY OF FISCAL CONSOLIDATION IN SELECTED EU MEMBER STATES

UČINKOVITOST FISKALNE KONSOLIDACIJE U ODABRANIM ZEMLJAMA ČLANICAMA EU

Abstract

The main objective of the paper is to assess the performance of implemented fiscal consolidation in selected EU Member States – with special emphasis on Croatia – from 2007 to 2015. We examined the measures and fiscal impacts of implemented fiscal consolidation of selected EU Member States that were covered and successfully abrogated the Excessive Deficit Procedure (EDP). Recent scientific studies have not sufficiently examined the impact of fiscal consolidation on the size and structure of transactions in financial assets, as well as the contribution of revenues from privatization for reduction of general government deficit and debt. This paper will assess the degree of consistency in the implementation of fiscal consolidation during the EDP and after its formal abrogation.

Keywords: fiscal consolidation, fiscal impact, measures, deficit, debt

JEL: E620, E630, H62, H63

Sažetak

Glavni cilj rada je ocijeniti učinkovitost fiskalne konsolidacije u odabranim državama članicama EU – s posebnim naglaskom na Hrvatsku – od 2007. do 2015. U radu se ispituju mjere i učinci fiskalne konsolidacije u odabranim državama članicama EU koje su bile u proceduri prekomjernog deficita iz koje su uspješno izašle. U znanstvenoj literaturi je u nedovoljnoj mjeri istražen utjecaj mjera fiskalne konsolidacije na veličinu i strukturu transakcija u financijskoj imovini, kao i doprinos prihoda od privatizacije smanjenju deficita i duga opće države. U radu se ocjenjuje i konzistentnost u implementaciji mjera fiskalne konsolidacije za vrijeme procedure prekomjernog deficita te nakon formalnog izlaska iz procedure.

Ključne riječi: fiskalna konsolidacija, fiskalni učinak, mjere, deficit, dug

JEL: E620, E630, H62, H63

1. Introduction

In the aftermath of the global financial crisis, a need for fiscal consolidation in the EU arose. The main corrective framework under the Stability and Growth Pact (SGP) was The Excessive Deficit Procedure (EDP), with the main purpose to ensure that Member States adopt appropriate policies to correct excessive deficits and debt within the thresholds defined by the Maastricht Treaty (3% of deficit to GDP and 60% of debt to GDP) and within the time period defined by the EU Council Recommendation. Almost all EU Member States (except Sweden and Estonia) were covered by the EDP corrective mechanism during the last decade. On one hand, some Member States were very active and efficient during the EDP period, applying various restrictive measures in order to reduce the deficit and debt. Those countries have successfully abrogated the EDP. On the other hand, for those Members States that were not efficient enough, the deadlines for reaching the targets were extended by the Commission and Council. The EDP process includes enhanced monitoring of public finance and the possibility of implementation of sanctions against a Member State. The main objective of the paper is to assess the performance of implemented fiscal consolidation in Bulgaria (BG), Czech Republic (CZ), Latvia (LV), Lithuania (LT), Slovenia (SI), Slovakia (SK) and the Republic of Croatia (HR) from 2007 to 2015. We examined the measures and fiscal impacts of implemented fiscal consolidation of selected "new" EU Member States that were covered by and successfully abrogated the EDP. Also, we focus on the implementation of these measures and analyse their effects on

the level of deficit and debt, as well as their impact on economic growth, total investment, exports of goods and services, employment and population.

The basic facts about Excessive Deficit Procedures (EDP) mechanism within the EU, including a short overview of procedures performed on selected EU Member States are presented in the second part. The third part is a short overview of fiscal consolidation measures implemented by selected Member States during the period 2007-2015 (including European Commission forecast for the period 2015-2017). Then we perform a cross-country analysis of the efficiency of fiscal consolidation measures taken by selected EU Member States and their impact on particular macroeconomic indicators (in part four). Finally, in the fifth part we provide concluding remarks.

2. A review of the excessive deficit procedure

The Excessive Deficit Procedure (EDP) is a rule-based process established by the Treaty on the Functioning of the European Union (TFEU, Article 126), with the main purpose to ensure that Member States adopt appropriate policy responses to correct excessive deficit and debt. Introduced partly in response to the economic crisis, it forms the imperative part of the economic governance architecture in the EU. The EDP begins with a Member State either having breached or being at risk of breaching the deficit threshold or having violated the debt rule, which is not diminishing at a satisfactory pace. In determining whether a numerical breach should lead to the opening of an EDP the legislation specifies how all-relevant factors should be taken into account. Particular consideration can be given to countries whose fiscal positions have worsened due to exceptional events and circumstances outside their control - like natural disasters or as a result of a severe economic downturn. However, it is necessary that the breach is temporary and that the actual value of the deficit be close to the threshold of 3% of GDP.

Countries in EDP are given a deadline of six months (or three for a serious breach) to comply with recommendations providing a concrete path for correcting its excessive deficit within a timeframe set. Euro area Member States that have already been sanctioned under the preventive arm, or those with a serious breach, may also face a stricter sanction in the form of a non-interest-bearing deposit of 0.2% of GDP. Once the deadline has passed, the Commission and the Council assess the actions that the Member State has taken, with a view to either put the procedure on hold or emphasizing it further if the Member State has not done well enough. A Member State that

has taken effective action but where the impact on the public finances has been affected by exceptional events outside its control may see an extension of its deadline for correction and a revision of the recommendations to reflect the change in circumstances. The EDP is extended for Member States that failed to take effective action to correct the excessive deficit within the initial deadline. Those countries also receive revised recommendations, which may include a new timeline to reduce the excessive deficit.

The extension of the EDP may result also with sanctions in the form of a 0.2% of GDP fine (euro area only), while countries receiving assistance from the EU Cohesion Fund may face a temporary suspension of this financing. For all Member States, the EDP is abrogated when the excessive deficit is corrected in a sustainable manner.

During the year 2004, ten countries (majority of them were formerly known as "Central European Countries in Transition") joined the EU. Due to excessive deficits, the EDP immediately covered six countries following their accession; two of them are included in our sample (Czech Republic and Slovakia). Those countries successfully abrogated the EDP in 2008. Since 2009, when the Global Economic Crisis spilled over to Europe, a majority of the EU Member States joined the EDP mechanism due to the sudden increase of fiscal deficits. The EDP again covered some of the countries that joined EU back in 2004, just shortly after the successful abrogation from previous EDP. Latvia, Lithuania and Slovenia were included in the EDP for the first time in 2009.

Bulgaria joined the EU in 2007 and entered into EDP in 2010. Due to efficient process of deficit reduction, Bulgaria officially abrogated the EDP in 2012. Due to a deficit of 5.4% of GDP recorded in 2014, Commission prepared a Report in accordance with the Art. 126.3 TFEU. The excess over the reference was qualified as exceptional within the meaning of the Stability and Growth Pact (SGP) and considered as a temporary and the EDP for Bulgaria was immediately closed (European Commission, 2015). Latvia and Lithuania made serious efforts in the process of fiscal consolidation and they abrogated the EDP in 2013. Lithuania abrogated the EDP with the deficit of 3.1% of GDP in 2012 and the Commission prepared a report in accordance with the Art. 126.3 TFEU in November 2013. The excess over the reference value was considered as temporary, taking into account the direct net cost of the pension reform (European Commission, 2013). Due to very impressive results of undertaken reforms (and compliance with the other three Maastricht criteria),

Latvia becomes a member of the euro area in 2014 and Lithuania in 2015. On the other hand, Slovenia was not able to reduce excessive deficit until the end of 2013, which was its initial deadline for correction. The new deadline was set up for Slovenia for the end of 2015. An official abrogation from EDP took place in mid-2016. Croatia joined the EU on July 1st 2013. Because of the excessive deficit situation, official inclusion into the EDP began in January 2014 and Council Recommendation set up initial deadline for correction for the end of 2016, with the possibility of official abrogation from EDP in mid-2017 (Table 1). Croatia successfully abrogated the EDP in June 2017.

The EU Member States placed under the EDP on the basis of Council Decision on existence of excessive deficit (Art.104.6/126.6 TFEU) receive Council Recommendations, which emphasize the deficit thresholds to be achieved during a given deadline (usually three to six months). The country under consideration should specify and rigorously implement measures that are necessary to achieve the correction of the excessive deficit within the deadline. The country is expected to report in detail about the consolidation strategy that it is planning to pursue to achieve the targets. Moreover, the authorities are expected to make progress report on the implementation of these recommendations, at least every six months, until full correction of the excessive deficit has taken place.

Table 1. *Overview of the Excessive Deficit Procedures by selected "new" EU Member States*

Country	Date of Commission Report (Art. 104.3/126.3 TFEU)	Council (EU) Decision on the existence of an excessive deficit (Art.104.6/126.6)	Initial Deadline for Correction (end of the year)	Revised Deadline for Correction (end of the year)	Official date of Council decision abrogating EDP (Art. 104.12/ 126.12 TFEU)
Bulgaria	12.05.2010	13.07.2010	2011	-	22.06.2012
Bulgaria	16.11.2015	-	-	-	-
Czech Republic	12.05.2004	05.07.2004	2007	-	03.06.2008
Czech Republic	07.10.2009	02.12.2009	2013	-	20.06.2014
Latvia	18.02.2009	07.07.2009	2012	-	21.06.2013
Lithuania	13.05.2009	07.07.2009	2011	2012	21.06.2013
Lithuania	15.11.2013	-	-	-	-
Slovakia	12.05.2004	05.07.2004	2007	-	03.06.2008
Slovakia	07.10.2009	02.12.2009	2013	-	20.06.2014
Slovenia	07.10.2009	02.12.2009	2013	2015	17.06.2016
Croatia	15.11.2013	21.01.2014	2016	-	16.6.2017

Source: EC DG ECFIN web site (https://ec.europa.eu/info/business-economy-euro/economic -and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/stability-and-growth-pact/corrective-arm-excessive-deficit-procedure/excessive-deficit-procedures-overview_en)

Council's Recommendations may include a short list of policy areas identified by the Commission as areas in which reform efforts are expected. This involves the creation of measures to be implemented on both the revenue and expenditure side of the budget in order to make the deficit close to the annual benchmark values defined in the Council Recommendation section of the Council Decision. Policy measures prepared by national authorities, including estimated impacts on the reduction of deficit for each specified measure, are subject to review by the Commission. The Commission makes an estimate of the real feasibility of the proposed measures to achieve their targets. If the Commission concludes that the proposed measures and their expected impacts are not effective enough to reach the recommended deficit thresholds, the Commission will invite national authorities to submit an additional set of policy measures in order to be confident that annual deficit targets are reached. The most demanding task for national authorities during the EDP is to perform deficit reduction measures presented to the Commission and Council efficiently and within a scheduled time frame.

3. The fiscal consolidation measures undertaken by selected EU Member States

During the period of fiscal consolidation, selected Member States implemented various measures. The number of measures implemented and their intensity highly depended on the size of initial budget deficit and debt at the moment of entering the EDP.

With regards to the *revenue side of the budget*, most countries made corrections of indirect taxes (VAT and excise duties), abolished tax relief related to direct taxes (personal income and corporate income taxes) and improved the collection of taxes and contributions (Table 2).

Table 2. *Country-specific measures to end EDP (proposed and enacted) on the revenue side*

	Revenue measures	Country(year)
1	Increasing excise duties on energy	BG (2010-12), CZ (2009-13), LV (2009-13), HR (2014-16)
2	Increasing excise duties on cigarettes and other tobacco products	BG (2010-12), CZ (2009-13), LV (2009-13), SI (2009-15), BG (2016), HR (2014-2016)
3	Introducing (or increasing) the tax on insurance premiums	BG (2010-12) BG (2015-16)
4	Improving the efficiency of tax and contribution collection; increasing the effectiveness of tax audit	BG (2010-12), LV (2009-13), SK (2009-13) BG (2015-16)
5	Raising the general VAT rate, intermediate rate or reduced rate	CZ (2009-13), LV (2009-13), LT (2009-13), SK (2009-13) SK (2014-16), HR (2014)
6	Lifting the reduced VAT rate on hotels and restaurants	HR (2014)
7	Increasing property tax	CZ (2009-13)
8	Withdrawing dividends from public companies' profits	CZ (2009-13), LT (2009-13), HR (2014-16)
9	Increasing non-tax revenues	LT (2009-13), SK (2009-13)
10	Increasing tolls	SI (2009-16)
11	Raising pension insurance contributions	BG (2010-12)
12	Raising social contributions	CZ (2009-13), LV (2009-13), HR (2014)
13	Introducing or increasing the property tax or capital gains tax	CZ (2009-13), LV (2009-13)
14	Increasing the share of central government in shared tax revenues (while reducing the share of local government)	LT (2009-13), HR (2015)
15	Introducing the financial transaction tax and amending the bank total assets tax	SI (2009-16)
16	Introducing (or broadening) the tax on interest on savings	BG (2015-16), HR (2016)
17	Introducing tax registers	SI (2016), HR (2014)

Source: European Commission

The size and volume of fiscal adjustment on the expenditure side of the budget depended on the size of "the mess in public finance", and it ranged from one-off reductions in current and capital expenditures to more detailed measures aimed at reducing part of expenses on public services and the number of their

users (Table 3). Latvia led the way in restrictive measures on the expenditure side, even at the expense of the living standard of its population. However, in mid-2013, the country successfully left EDP and in early 2014 it was about to achieve another goal – the introduction of the euro. Apart from cutting its budget deficit to 1.2% of GDP in 2012, Latvia also maintained its public debt at an acceptable level of 41% of GDP.

Table 3. *Country-specific measures to end the EDP (proposed and enacted) - expenditure side*

	Expenditure measures	Country (year)
1	Freezing/reducing public sector wages	CZ (2009-13), LV (2009-13), LT (2009-13), SI (2009-16), BG (2010-11), BG (2015)
2	Freezing/reducing subsidies and social transfers	BG (2010-12), CZ (2009-13), SI (2009-15), HR (2015-16)
3	Reducing capital investment at the cost of government budget	BG (2010-12), SK (2009-13), SI (2009-16), HR (2014-16)
4	Suspending indexation of/freeze pensions	BG (2010-12), CZ (2009-13), LV (2009-13), SL (2009-16)
5	Improving the efficiency and curbing public sector employment	BG (2010-12)
6	Implementing targeted public spending cuts	BG (2010-12), LV (2009-13), SK (2009-13)
7	Improving public debt management (by cutting the cost of interest)	LV (2009-13)
8	Reducing subsidies and state aid	LV (2009-13), HR (2014-16)
9	Reducing wages in local government units	LV (2009-13)
10	Reducing pensions and imposing restrictions on early retirement	LV (2009-13), BG (2010-12), BG (2015)
11	Reducing child, maternity and sickness benefits	LV (2009-13), LT (2009-13) CZ (2010-13)
12	Reducing the number of disability pension beneficiaries	LV (2009-13)
13	Gradually increasing the statutory retirement age	LT (2009-13), BG (2015)
14	Lifting salary bonuses and suspending promotions of public sector employees	SI (2009-16)
15	Raising the minimum wage level	BG (2010-12), LV (2009-13)
16	Consolidating or abolishing the state agencies or including them in the state budget	LV (2009-13), HR (2015-16)
17	Reducing local government funding by the central government	LV (2009-13) BG (2015), HR (2015-16)

Source: European Commission

4. Cross-country efficiency analysis of policy measures undertaken in order to abrogate the EDP

The massive inclusion of most of EU Member States in the EDP corrective mechanism in 2009 was a result of the sudden increase in fiscal deficits in 2009, as consequences of the national economic policy reactions to global crisis spill-over to Europe.

4.1. Fiscal consolidation, deficit and debt developments

During the observed period, from 2007 onwards (including the EC Spring Economic Forecast for the 2016-2018) the average general government deficit at the EU level shrank from 6.6% of GDP in 2009 to 2.4% of GDP in 2015. The EC forecasted further continuous shrinking of the deficit below the levels defined by the Maastricht criteria (1.7% of GDP in 2016, 1.6% in 2017 and 1.5% in 2018, Table 4). *This reduction resulted from the EDP performed against countries having breached or being at risk of breaching the deficit threshold of 3% of GDP. The most intensive efforts in reducing the excessive deficit within the relatively short time frame, especially taking into account its initial size, were recorded in Latvia and Lithuania.*

Table 4. *EU and Selected Member States, General Government Deficit (as % of GDP)*

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*	2017*	2018*
EU	-0.9	-2.5	*-6.6*	*-6.4*	*-4.6*	*-4.3*	*-3.3*	*-3.0*	*-2.4*	*-1.7*	*-1.6*	*-1.5*
BG	1.1	1.6	-4.1	-3.1	-2.0	-0.3	-0.4	-5.5	-1.6	0.0	-0.4	-0.3
CZ	-0.7	-2.1	-5.5	-4.4	-2.7	-3.9	-1.2	-1.9	-0.6	0.6	0.3	0.1
HR	-2.4	-2.8	-6.0	-6.2	-7.8	-5.3	-5.3	-5.4	-3.4	-0.8	-1.1	-0.9
LV	-0.6	-4.3	-9.1	-8.7	-3.3	-1.0	-1.0	-1.6	-1.3	0.0	-0.8	-1.8
LT	-0.8	-3.1	-9.1	-6.9	-8.9	-3.1	-2.6	-0.7	-0.2	0.3	-0.4	-0.2
SI	-0.1	-1.4	-5.9	-5.6	-6.7	-4.1	-15.1	-5.4	-2.9	-1.8	-1.4	-1.2
SK	-1.9	-2.4	-7.8	-7.5	-4.3	-4.3	-2.7	-2.7	-2.7	-1.7	-1.3	-0.6

Source: Eurostat Database, EC European Economic Forecast, Spring 2017 (for 2016*- 2018* forecast)

During the period of consideration, average general government revenues at the EU-28 level decreased during the period 2008-2010, whereas the period of a moderate revenue growth was seen during 2011-2014 (Table 5).

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The trend of increasing relative shares of government revenues in observed countries during the period 2011-2015 indicates the power of implemented fiscal consolidation measures during the EDP on revenue side of the budget.

Table 5. *EU and Selected Member States, General Government Revenues (as % of GDP)*

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*	2017*	2018*
EU	*43.8*	*43.8*	*43.5*	*43.5*	*44.0*	*44.7*	*45.4*	*45.1*	*44.9*	*44.9*	*44.8*	*44.7*
BG	38.8	38.7	35.3	33.1	31.9	34.1	37.2	36.6	39.0	35.5	36.3	36.6
CZ	39.3	38.1	38.1	38.6	40.3	40.5	41.4	40.3	41.4	40.5	40.5	40.6
HR	42.5	42.0	41.6	41.3	41.0	41.8	42.6	43.1	45.2	47.6	47.5	47.4
LV	33.3	33.2	34.6	36.3	35.7	36.3	35.9	35.9	35.8	36.4	36.5	35.8
LT	34.4	35.0	35.8	35.4	33.5	33.0	33.0	34.1	34.9	34.5	34.0	33.8
SI	42.1	42.5	42.3	43.6	43.3	44.5	45.2	44.7	45.2	43.6	43.4	42.9
SK	34.4	34.5	36.3	34.7	36.7	36.3	38.7	39.3	42.8	40.0	40.3	40.8

Source: Eurostat Database, EC European Economic Forecast, Spring 2017 (for 2016*- 2018* forecast)

At the same time, the average EU-28 *general government expenditure* increased from 44.7% of GDP in 2007 to 50.1% of GDP in 2009, mainly due to growing costs of responses to crisis. *From 2010 to 2015 the average EU-28 government expenditure was reduced from 49.9% to 47.2% of GDP (with further reduction forecasted for 2016-2018 period), mainly due to efficient implementation of fiscal consolidation measures on the expenditure side of national budgets during the EDP.*

Table 6. *EU and Selected Member States, General Government Expenditure (as % of GDP)*

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*	2017*	2018*
EU	*44.7*	*46.2*	*50.1*	*49.9*	*48.6*	*49.0*	*48.7*	*48.1*	*47.2*	*46.6*	*46.4*	*46.1*
BG	37.7	37.1	39.4	36.2	33.8	34.5	37.6	42.1	40.7	35.5	36.8	36.9
CZ	40.0	40.2	43.6	43.0	43.0	44.5	42.6	42.2	42.1	39.9	40.2	40.5
HR	45.0	44.7	47.6	47.5	48.8	47.1	48.0	48.5	48.6	48.4	48.6	48.4
LV	34.0	37.5	43.7	45.0	39.0	37.3	36.9	37.5	37.0	36.3	37.3	37.5
LT	35.3	38.1	44.9	42.3	42.5	36.1	35.6	34.8	35.1	34.2	34.3	33.9
SI	42.2	43.9	48.2	49.3	50.0	48.6	60.3	50.1	48.1	45.5	44.8	44.0
SK	36.3	36.9	44.1	42.1	40.8	40.6	41.4	42.0	45.6	41.6	41.6	41.3

Source: Eurostat Database, EC European Economic Forecast, Spring 2017 (for 2016*- 2018* forecast)

The largest expenditure cuts (for about 6 percentage points compared with the previous year) were performed during the EDP in Latvia (2011) and Lithuania (2012), despite the fact that those two countries recorded the lowest average level of budgetary expenditure in percentage of GDP. The largest levels of expenditure (very close to the EU-28 average) *were recorded in Croatia and Slovenia, with the growing trend until 2014 (even during the EDP)*. Also, Slovenia recorded the largest annual amount of expenditure in 2013 (60.3% of GDP) - exceptionally - due to the budgetary financing of the rehabilitation of two largest government owned banks. The final outcome was a budgetary deficit of 15%.

The average share of public investment expenditure in EU-28 sharply declined from 3.7% of GDP in 2009 to 2.9% in 2015, which contributed to the reduction of future economic growth. This shrinkage in investment is related to budgetary expenditure cuts during the process of fiscal consolidation (EDP). Average level of public investment expenditure in selected countries is greater than the EU-28 average, which indicates a possible larger share of private investment and more intensive financing of investment through EU funds in the rest of the EU (Table 7). The highest level of public investments until 2014 is observed in Bulgaria (with exception of 2011 and 2012), followed by Slovenia, Czech Republic and Latvia. *In Croatia, the share of public investments has been continuously declining since 2007, whereas a mild turnaround is seen only in projections for 2016-2018. This proves that fiscal consolidation in Croatia is partially based on a huge expenditure cut in public investments and a proclaimed official strategy of substitution of capital expenditure financing with the EU funds*.

Table 7. *General government, Gross Fixed Capital Formation (as % of GDP)*

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*	2017*	2018*
EU	*3.2*	*3.4*	*3.7*	*3.5*	*3.3*	*3.1*	*3.0*	*2.9*	*2.9*	*2.7*	*2.8*	*2.8*
BG	5.2	5.6	5.0	4.6	3.4	3.4	4.0	5.2	6.6	2.8	4.0	4.2
CZ	4.6	5.0	5.5	4.7	4.5	4.2	3.7	4.1	5.2	3.4	3.7	4.0
HR	6.1	5.9	5.8	3.6	3.6	3.5	3.7	3.6	3.1	3.2	3.3	3.5
LV	5.9	5.2	4.9	4.7	5.0	4.9	4.4	4.5	4.6	3.5	3.8	4.0
LT	5.4	5.4	4.4	5.0	4.7	4.0	3.7	3.6	3.6	2.9	3.0	3.1
SI	4.5	4.7	5.0	5.0	4.1	4.1	4.4	5.1	4.7	3.0	3.1	3.3
SK	3.2	3.4	3.9	3.6	3.8	3.4	3.3	4.0	6.3	3.2	3.3	3.3

Source: Eurostat Database, EC European Economic Forecast, Spring 2017 (for 2016*- 2018* forecast)

The average general government consolidated gross debt at the EU-28 level increased from the initial level of 57.6% of GDP in 2007 to 88.4% in 2014, with the perspective to be stabilized at the average level of 84.5% of GDP during the forecasted period 2016-2018. *The huge average level of general government debt at the EU level (well above the threshold of 60% of GDP) is mainly related to huge borrowing of the "old" euro area Member States (like Greece, Spain, Portugal, Italy, and Ireland with general government debt levels well above 100% of GDP).* The level of the general government debt in selected EU Member States is much lower compared to the EU average (especially in Bulgaria), except in the cases of Slovenia and Croatia. These two countries had the relatively low initial level of debt in 2007, which progressively increased during the rest of observed period (Table 8). *Selected Member States, except Slovenia and Croatia, abrogated the EDP due to strong and efficient performance of policy measures undertaken on the revenue and expenditure side of the budget combined with the minimum of borrowing.*

Table 8. *General Government Consolidated Gross Debt (as % of GDP)*

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*	2017*	2018*
EU	*57.6*	*60.7*	*72.8*	*78.5*	*81.6*	*85.3*	*87.4*	*88.4*	*86.5*	*85.1*	*84.8*	*83.6*
BG	16.3	13.0	13.7	15.3	15.2	16.7	17.0	27.0	26.0	29.5	26.8	26.0
CZ	27.8	28.7	34.1	38.2	39.8	44.5	44.9	42.2	40.3	37.2	36.2	35.6
HR	37.7	39.6	49.0	58.3	65.2	70.7	82.2	86.6	86.7	84.2	81.9	79.4
LV	8.4	18.7	36.6	47.4	42.7	41.2	39.0	40.9	36.5	40.1	38.5	36.0
LT	15.9	14.6	28.0	36.2	37.2	39.8	38.7	40.5	42.7	40.2	42.4	38.9
SI	22.8	21.8	34.6	38.4	46.6	53.9	71.0	80.9	83.1	79.7	77.8	75.5
SK	30.1	28.5	36.3	41.2	43.7	52.2	54.7	53.6	52.5	51.9	51.5	49.8

Source: Eurostat Database, EC European Economic Forecast, Spring 2017 (for 2016*- 2018* forecast)

4.2. The size of potential government debt during the 2013-2015 period

As mentioned before, government borrowing mainly financed increasing deficits in selected Member States in the aftermath of the financial crisis, increasing the level of government debt. In order to finance the deficit, countries also made an indirect borrowing (not officially recorded as a government debt from a legal point of view). This type of borrowing was realized through an *increase in trade credit liabilities* (due and late payments to suppliers of goods and services) and *increase in government guarantees* issued to non-government entities, mainly public corporations (potential debt

for the government in case the original debtor is not able to repay the debt). It is obvious that this type of "shadow" financing may have an impact on the existing level of government debt under the certain conditions. This is a main reason for the Eurostat to improve the data collection on trade credits liabilities and other potential debt categories (like government guarantees) in recent years (Table 9).

Table 9. *Selected Member States, Potential General Government Consolidated Gross Debt 2013-2015 (as % of GDP)*

Country	Potential government debt			Maastricht debt			Trade credits - liabilities			Government guarantees		
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
BG	19.3	29.1	27.9	17.0	27.0	26.0	1.6	1.5	1.4	0.7	0.6	0.5
CZ	47.3	44.3	42.1	44.9	42.2	40.3	1.8	1.7	1.4	0.6	0.5	0.3
HR	88.2	92.1	91.9	82.2	86.6	86.7	3.4	2.9	3.0	2.6	2.5	2.2
LV	42.3	42.9	38.7	39.0	40.9	36.5	0.9	0.9	0.6	2.4	1.2	1.6
LT	40.5	42.0	44.1	38.7	40.5	42.7	1.0	0.7	0.6	0.8	0.8	0.8
SI	87.7	95.4	95.5	71.0	80.9	83.1	2.2	2.1	1.7	14.5	12.4	10.7
SK	56.6	55.3	54.1	54.7	53.6	52.5	1.8	1.6	1.6	0.0	0.0	0.0

Source: Author's calculation based on the Eurostat Database

The highest level of trade credit liabilities is recorded in Croatia (despite reduction from 3.4% of GDP in 2013 to 3% of GDP in 2015). Other countries recorded average size of trade credit liabilities from 0.8% (Latvia and Lithuania) up to 2% of GDP (Slovenia). The amount of government guarantees varies from the average of 0% of GDP (Slovakia) up to 12.5% of GDP (Slovenia). *The difference between potential government debt and officially recorded Maastricht debt is largest in the case of Slovenia (12.4% of GDP in 2015), followed by Croatia (5.2% of GDP in 2015).* The lowest discrepancy between potential and official government debt was recorded in Lithuania (1.4% of GDP).

5. Conclusions

Almost all new EU Member States had to undergo a painful process of correcting their macroeconomic imbalances with the purpose of aligning their macroeconomic indicators with the criteria put forward by the Maastricht Treaty. The process that the EU designed to help the economies who experience such fiscal imbalances to achieve the desired targets - the Excessive Deficit

Procedure - helped with imposing fiscal discipline. All new Member States that were subject to EDP successfully abrogated it within 2-3 years, largely because of the courage to implement the sizeable cuts on the expenditure side of the budget. This was the case with Bulgaria, the Czech Republic, Latvia, Lithuania. Despite the efficiency of implemented fiscal consolidation measures, Slovenia has experienced intensive banking rehabilitation process, with huge impact on government deficit and debt (especially in 2013). This was a main reason for a Council to extend the official deadline for correction of the excessive deficit from the end of 2013 to the end of 2015. *Croatia abrogated the EDP in June 2017, through increasing the revenue side of the budget and the GDP growth.*

Croatia failed to implement serious fiscal adjustments, which significantly hampered the achievement of better macroeconomic indicators, debt and borrowing. The 0.8% deficit in 2016 in Croatia is a consequence of a favourable period of economic growth (when fiscal revenue grew almost automatically). This reveals that the focus of fiscal consolidation was on the revenue side (the share of budget revenues in GDP rose from 42.6% in 2013 to 47.6% in 2016). Despite a decrease in investment and interest expenditures in 2016, the share of budget expenditures in GDP increased from 48% in 2013 to 48.4% in 2016, proving that the real fiscal consolidation on the expenditure side of the budget is *de facto* absent. It is – therefore – of an utmost importance for the Government to conduct at least one or two of those urgent structural reforms (*e.g.* of the pension or healthcare systems – that generate large fiscal expenditures) without further delay.

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CHALLENGES IN CAPITAL MARKET DEVELOPMENT IN REPUBLIC OF MACEDONIA

IZAZOVI U RAZVOJU TRŽIŠTA KAPITALA U REPUBLICI MAKEDONIJI

Abstract

The capital market , which from the institutional point of view , is an integral part of the financial market, should provide in each national economy: the resources efficient utilization, the ownership transformation and expanding, the investing projects selection from the aspect of propulsion and profitability and creation of optimal structure of the investors' securities portfolio. Effective functioning of the capital market means meeting some socio-economic preconditions, institutional forms and legal regulative which should be in function of protecting the stakeholders' interests. The aim of this research is an analysis of the capital market functions in Republic of Macedonia, through the resources mobilization and allocation, current validation of the firms, the restructuring of the firms ownership, providing of the current and perspective liquidity, attracting foreign investments in the national economy, the investors' portfolio optimizing, etc. For this purpose we carried out a survey on a representative sample of Macedonian companies and the data will be analyzed with many statistical tools. This analysis will enable identification of the reasons and

limiting factors in the capital market functioning in Republic of Macedonia and a proposal of measures for its more dynamic development.

Keywords: capital market, stock market, portfolio, securities

JEL: G32, G23, G11

Sažetak

Tržišta kapitala, koja su sa institucionalnog stanovišta integralni dio finansijskog tržišta,u svakoj nacionalnoj ekonomiji trebala bi da osiguraju: efikasno korištenje resursa, transformaciju vlasništva, selekciju investicijskih projekata sa aspekta propulzivnosti i profitabilnosti te kreiranje optimalne strukture porftolija vrijednosnih papira. Efikasno funkcionisanje tržišta kapitala znači povezivanje socio-ekonomskih preduslova, institucionalnih formi i pravne regulative koji bi bili u funkciji zaštite interesa stejkholdera. Cilj ovog istraživanja je analiza funkcionisanja tržišta kapitala u Republici Makedoniji kroz mobilizaciju i alokaciju resursa, vrednovanje firmi, vlasničko restrukturiranje firmi, obezbjeđivanje trenutne i buduće likvidnosti, privlačenje stranih investitora u nacionalnu ekonomiju, optimizaciju portfolija itd. U svrhu provođenja istraživanja prikupljeni su primarni podaci na reprezentativnom uzorku makedonskih kompanija i podaci su analiziraniu primjenom statističkih alata. Ova analiza će omogućiti identifikaciju razloga i limitirajućih faktora u funkcionisanju tržišta kapitala u Republici Makedoniji te rezultirati prijedlogom mjera za dinamičniji razvoj.

Ključne riječi: tržište kapitala, berza, portfolio, vrijednosni papiri

JEL: G32, G23, G11

1. Introduction

Capital market has an important place in each national economy, because through it, the economy realizes various economic goals. Namely, the capital market enables capital direction into investing projects that are the most profitable at that concrete moment, *i.e.* have the highest profit rate of the invested capital. On the other hand, the capital market allows the investors (free financial resources owners) to make quick change of the structure and direction of their investing portfolios for optimizing their structure. In this way, we make an optimal allocation and financial resources use, and this accelerates the economic development of the national economy. The capital market has direct influence on the efficient working of the business entities,

improves the people's living standard and accelerates the country's economic development. Development degree of the capital market is an indicator of the national economy inclusion into the contemporary world economic trends.

2. Literature review

Financial markets, such as the bond and stock markets are important in challenging funds from people who do not have a productive use for them to those who do. Indeed, well-functioning financial markets are a key factor in producing high economic growth, and poorly performing financial markets are one reason that many countries in the world remain desperately poor. Activities in financial markets also have direct effects on personal wealth, the behavior of businesses and consumers, and the cyclical performance of the economy (Mishkin & Eakins, 2006, p. 3).

All over the world, the capital market has played significant roles in national economic growth and development. One intermediary in the market that operates as a rallying point for the overall activities is the stock exchange. It is a common postulation that without a functional stock market, the capital market may be very illiquid and unable to attract investment. Essentially, the stock market provides liquidity, contributes to capital formation, and investment risk reduction by offering opportunities for portfolio diversification (Levine, 1991, p. 1445).

Capital markets have several beneficial features for different participants in the economy. For a company or entity in need of funding, domestic capital markets provide an alternative source of funding that can complement bank financing. Capital markets can offer better pricing and longer maturities as well as access to a wider investor base. They can also offer funding for riskier activities that would traditionally not be served by the banking sector and by doing so contribute significantly to innovation in an economy. For investors and savers, capital markets can offer more attractive investing opportunities − with better returns − than bank deposits, depending on risk profile, liquidity needs, and other factors. Further, with a wider range of securities and instruments offered, capital markets can help investors diversify their portfolios and manage risk (IFC, 2017).

Also, they improve the implementation of fiscal, monetary, and exchange rate policy. These benefits occur through a number of complementary channels. However, despite these potential benefits, not all countries have well developed capital markets. Moreover, government-led initiatives to develop local capital

markets have had mixed success. The development of local capital markets has been a long-standing policy question. Over the past decades, many countries have implemented significant reforms to foster domestic capital market development. Such reforms were often preceded by or part of broader reform agendas to develop financial systems and make them more integrated with the global market, including the removal of restrictions and controls on banking and the capital account (Laeven, 2014, p. 3). Moreover, the development of local bond markets was seen as critical for governments to finance large fiscal deficits without having to resort to financial repression or foreign borrowing with exchange rate risk and to facilitate the sterilization of large capital inflows (Turner, 2002, p. 2).

According to Bernard Black, an important challenge for all economies, at which only a few have succeeded, is creating the preconditions for a strong market for common stocks and other securities. A strong securities market rests on a complex network of legal and market institutions that ensure that minority shareholders (1) receive good information about the value of a company's business and (2) have confidence that a company's managers and controlling shareholders won't cheat them out of most or all of the value of their investment. A country whose laws and related institutions fail on either count cannot develop a strong securities market, forcing firms to rely on internal financing or bank financing – both of which have important shortcomings (Black, 2001, p.781).

In addition to providing for the depth and breadth of domestic financial markets in general, and of bond markets in particular, institutional investors are a force for change for other reasons as well. First, the development of the asset management industry brings along higher standards for investor protection, transparency and governance practices. Second, many observers regard institutional investors as a countervailing force to existing commercial and investment banks, arguing that pension funds foster competition and improve the efficiency of loans and primary securities markets. Third, institutional investors are a paramount force in promoting financial innovation and the modernization of trading systems. It should be noted, however, that in some instances institutional investors face restrictions of an institutional or regulatory nature that may hamper their appetite for innovation (Mihaljek, Scatigna & Villar, 2002, p. 36).

This paper is giving an overview of the challenges faced in the development of capital markets in the Republic of Macedonia, including preconditions needed and potential undesirable consequences of local capital market development.

3. The capital market conditions in Republic of Macedonia

The capital market in Republic of Macedonia is organized as a primary and a secondary market. On **the primary capital market in Republic of Macedonia**, there is a primary issuing of securities, approvals for offering sale of own shares and approvals for giving public offer for redemption of securities, mainly state bonds with different validity, state records and shares through private or public issuing.

Table 1 presents data on the value of long-dated securities issues for the period of time from 2011 to 2015. As per the data, the highest success in the capital market of Republic of Macedonia was realized in 2012, when long-dated securities at the amount of 20.497 million denars were issued. Significant decrease was seen in 2015, when the issues value was 12.016 million denars, which is rather lower compared to 2012. This situation is a result mainly to the drastic share issues decreasing, which value in 2015 was 120 million denars.

Table 1. *Long-dated securities issues structure, from 2011 to 2015 (million denars)*

Realized long-dated securities issues	2011	2012	2013	2014	2015
Value of the realized long-dated securities issues	1,845	10,466	12,359	13,362	11,896
1.Two-years continuous bonds	0	0	3,055	4,841	899
2.Three- years continuous bonds	0	2,082	1,417	912	2,800
3.Five- years continuous bonds	1,168	7,768	7,085	4,213	0
4.Ten- years continuous bonds	0	0	0	2,782	3,209
5.Fifteen- years continuous bonds	0	0	0	0	4,402
6.Bonds for denationalization	677	616	802	615	586
Value of the realized long-dated non-state securities issues	3,531	10,032	121	6,325	120
1.Corporative bonds	0	0	0	0	0
2.shares	3,531	10,032	121	6,325	120
-issued by banks	3,314	2,546	0	0	0
-issued by other financial companies	217	191	111	267	3
-issued by non-financial companies	0	7,295	10	6,059	117
Total value of the realized long-dated non-state securities issues	5,376	20,497	12,481	19,687	12,016

Source: www.mse.mk (Accessed: October, 2017)

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Namely, the Securities Commission of Republic of Macedonia, from 2011 to 2015 approved 49 requests for securities issuing. All of them were for shares issuing, and in this period there was no request for bonds issuing. Table 2 presents data on shares issuing in the analyzed period in the primary capital market in Republic of Macedonia.

In the period from 2011 to 2015, 90% of shares issues were realized by a private offer, and only 10% of the shares issues were realized by a public offer (table 2). In 2015, the non-financial companies were the most active shares issuers, which through a private offer, realized only three new shares issues, at the total amount of 117 million denars, which has not got some higher significance for increasing the total sources for the business entities financing. During 2015, The Securities Commission of R. M, issued totally four approvals for shares issues, all realized through a private offer of ordinary shares. One of the issues were made based on the Law for converting debt of Republic of Macedonia, on the basis of public expenditures into long-term deposit in the companies AD "Ohis" Skopje, "EMO" AD Ohrid, "Tutunski kombinat" AD Prilep and "11. Oktomvri-Eurokompozit" AD Prilep (Official gazette of Republic of Macedonia, No.159/2008), for increasing the basic principal and creating conditions for undisturbed companies' regular working.

In the last 3 years, also the financial institutions have not been especially active in the primary capital market, so any shares issue by the banks has not been seen, while the other non-bank financial institutions have issued new shares in almost insignificant amount, *i.e.* only 3 million denars (see Table 1).

Table 2. *Shares issues situation from 2011 to 2015*

Primary capital market (recording new securities issue)				
Period	No. of approved and realized issues	Issues total value, expressed in million denars	Issues value, expressed in million EUR	Offering kinds (private/public)
2015	4	120,37	1,95	Private offerings
2014	12	6,325,58	102,64	11 private; 1 public
2013	6	121,38	1,97	Private offerings
2012	16	10,031,54	163,1	15 private ; 1 public
2011	11	3,655,12	59,42	8 private; 3 public

Source: www.finance.gov.mk (Accessed: October, 2017)

Bonds issuing, as an alternative for providing additional capital, is not practiced by the Macedonian non-financial companies. This is mainly due to the lack of expertise relating to structuring and promoting this type of securities. The first public offering for corporative bonds in Republic of Macedonia, was realized in 2008, and the issuer was NLB Tutunska banka. These bonds were issued for the needs of the structural liquidity managing, provision of long-term sources for financing the bank's activities and managing the interest risks. The issue was realized by a success percentage of 88.86%, *i.e.* NLB Tutunska banka realized revenue of 10,663,000 EUR, mainly through a sale of 10,633 bonds. During 2016, in the period of time from 06/09-06/12/2016, there was a public offering for recording corporative bonds of Stopanska banka AD Bitola, when, after the end of the term for realizing the public offering, from the offered 5,000,000 long-dated debt securities (bonds), no one bond was sold, and the public offering was not realized. In the period from 2011-2016, no one issue of corporative bonds, was realized.

Secondary capital market in Republic of Macedonia is composed of the official and the regular market of the Macedonian stock exchange AD Skopje. The stock exchange started working on 28/03/1996, and the same year, it became full member of the Federation of Euro-Asian stock exchanges (FEAS). The Macedonian stock exchange has signed a Memorandum for collaboration with the Ljubljana stock exchange, the Athens stock exchange, Stock exchange center from Thessaloniki, the stock exchange in Zagreb, the Belgrade stock exchange, the Bulgarian stock exchange, and the Vienna stock exchange.

One of the recent projects of the Macedonian securities stock exchange, is the project for regional diverting of trading accounts-SEE Link, which from 29/03/2006 has become operative, while the promotion of the official start of the platform was held within the Annual conference of the Macedonian stock exchange in Skopje. The key event on the conference was inauguration of the regional platform for diverting trading accounts SEE Link, in the presence of the directors of the stock exchanges participating in the project (Bulgarian, Zagreb and Macedonian stock exchanges) and representatives of the European bank for reconstruction and development (EBRD), by which financial support this platform has been developed. The Ljubljana and Belgrade stock exchanges became participants in SEE Link at the beginning of December 2016. Three more stock exchanges have taken activities for joining SEE link: The Athens, Banja Luka, and Podgorica stock exchanges, and several stock exchanges from the region are also interested in joining the project.

Table 3 shows the realized turnover of the Macedonian stock exchange from 2010 to 2016.

Table 3. *Realized turnover of the Macedonian securities stock exchange in the period 2010-2016*

Turnover on the Macedonian Stock Exchange	
Period	**Turnover (denars)**	**Turnover (million EUR)**
2016	3,023,394,172	**49,09**
2015	2,660,494,514	43,17
2014	8,704,057,897	141,16
2013	3,234,557,987	52,50
2012	5,600,304,948	91
2011	13,655,857,674	221,94
2010	5,842,963,073	94,98

Source: www.mse.mk (Accessed: October, 2017)

According to the data shown in Table 3, the highest turnover on the stock exchange was realized in 2011, as a result of the increase of the securities issues of the companies which had to be listed on the stock exchange.

The development of our total market on the offer side, is based on the two projects for obligatory quotation in 2001 and in 2013, *i.e.* the market value of 115 listed companies is about 1.6 billion EUR and in relation to GDP is about 18%. The average indicator for this in EU is 65%, while in USA, UK and Switzerland; the figures go even above 100%. This is an indicator that shows what kind of enterprises structure and what kind of structure of the financial market, have been created in these 25 years of market economy in the country. It is obvious that there are not many big and quality shareholding companies on the stock exchange, or, there is not appropriate validation of the listed shareholding companies on the levels as is the average in EU. After 2011, the stock exchange has seen continuous decreasing of the realized turnover with securities.

4. Factors influencing the capital market development in Republic of Macedonia

The capital market has an important place within each national economy, because through it, significant economic goals can be achieved. Namely, it has direct influence on the efficient working of the business entities, improves the

people's living standard and accelerates the country's economic development. In Republic of Macedonia the capital market development is on a very low level. This is due to the influence of the following factors, *i.e.*:

■ **Limited offer for financial instruments,** in which the investors could direct their free financial resources. This situation is due to the fact that the business entities are not interested in mobilizing financial resources through shares and bonds issuing. Namely, the business entities in Republic of Macedonia have realized up to now only a small number of securities issues in order to provide capital which will be used for financing the current and developing working. Most often, they finance the investing projects by using expensive banking credits, that significantly decrease their profitability. On the other hand, the Macedonian stock exchange has not been trading with options, futures and other derivative financial instruments yet, that in the developed capital markets are used as instruments for increasing the portfolio performance and as instruments for risk managing.

■ **Poor financial infrastructure.** Within each national economy, non-deposit financial institutions (investment funds, insurance companies, pension funds) have a big importance for the capital market development. The basic task of these financial mediators is to enable safe and favorable disposal of people's small savings. As per the Statement for financial stability of NBRM, the total resources in the finance system of Republic of Macedonia at the end of 2015, amounted to 493,591 million denars. Because of the highest participation, the banks are the most important factor for maintaining the stability of the entire financial system, but also the stability of the other institutional segments. In fact, they participate with 85.8% into the structure of the total resources of the financial system. On the other hand, non-deposit financial institutions participate with only 13.6% in the total assets of the financial system. So, there is a need for building an appropriate strategy for their further growth and development, and for establishing an appropriate system for risks managing, which would have key role in the further development and readiness for coping with crisis situations in future.

■ **The investors are not interested in investing their free resources into financial instruments,** and this is mainly due to: the potential investors are poorly informed on the advantages of investing into securities, the limited offer for financial instruments which is restricted only to shares and bonds, not-educated economic agents about the possibilities to invest on stock exchange, absence of foreign portfolio investments, instable macroeconomic situation of the Macedonian economy, *etc*.

■ **The banking institutions' conservative investment policy.** The largest

part of the securities portfolio of the Macedonian banks consists of debt securities (over 90%). Within the debt securities, the state records and the treasury bills of NBRM have the highest participation, which are characterized by a low risk, and a low return ratio.

■ **Investment banking does not exist.** In the developed market economies, the investment banks have crucial role in the process of preparing and placing the new securities issues. These banks also offer technical expertise for scanning the business entity's financial state, selection of the securities which would be issued into the market in a function of mobilizing financial resources, defining the price for selling the securities, determining the true moment for securities issuing, *etc*. In Republic of Macedonia, only one bank offers services from the investment banking area, while the existing banking institutions do not offer investment banking services.

5. Survey about the capital market situation in Republic of Macedonia

The purpose of this paper will be to define relevant indicators and factors that influence and determine the supply of the financial instruments on the capital market. Based on the main objective, through this work the following sub-goals will be carried out:

■ To identify the sources of companies' financing,
■ To explore the awareness level of the companies 'with the advantages of securities investing,
■ To receive quality information on scientific and technical basis that will contribute to better understanding the limiting factors that affect the companies' decision for financing through securities issue.

In order to test the level of awareness of business entities in the country, a closed questionnaire of six questions was prepared. Some of the questions are dichotomous yes-no questions, and some questions have multiple answers from which the respondents could choose one or more. The questions were carefully chosen to get a clearer picture and a better quantitative analysis of the current situation related to the opportunities offered by the market to mobilize capital through the issuance of securities. The questionnaire was carried out on a representative sample of 63 business entities (small and medium enterprises), and an answer was received by 48 entities. The survey was carried out from July 20 to August 15, 2017 generally through direct contact or e-mail with representatives of the management team in the business entities.

On the first question, "Do you have, within your organization, a special sector that analyzes the possibilities for capital market financing?", of the polled 48 firms, only 4.16%, or 2 firms, answered that they have special sector which explores the possibilities for capital mobilization through issue of securities.

Concerning the second question, "In which way do you finance your needs for financial resources", all polled firms answered that they finance themselves by using bank credits and their own capital. Based on the conducted poll, it can be concluded that no one of the polled firms has mobilized resources through issue of securities.

On the question "Which is the reason that makes you being not interested in mobilization of necessary capital through securities issuing?", the largest part, *i.e.* 85.4% of the respondents, *i.e.* 41 firms, answered that they are not informed enough on the advantages of using this kind of financing, while 4.16% of the respondents, answered that they are afraid of losing the controlling interest. More than a half, *i.e.* 52% of the respondents, said that they have not made securities issuing because of the fear that the securities they will offer to the capital market, will not be sold, while 93.75%, *i.e.* 45 business entities do not know very well the procedure for issuing and placing the securities (Figure 1).
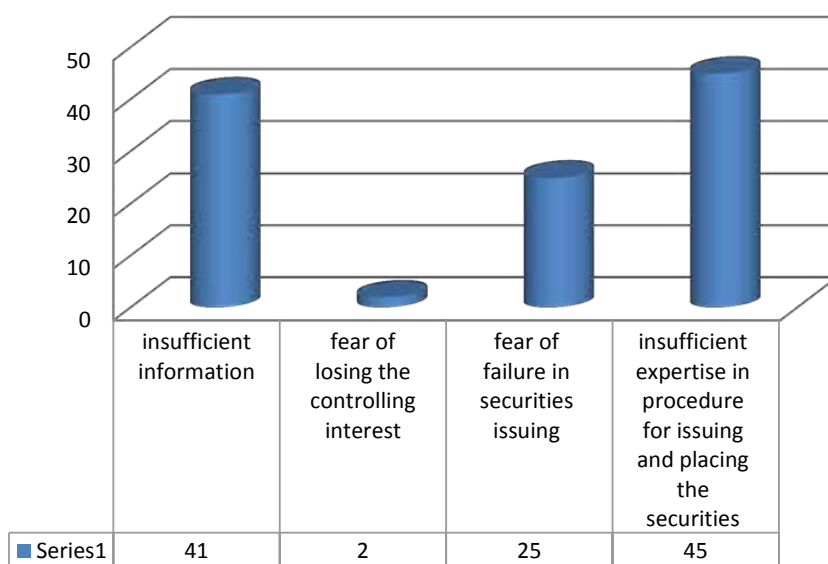
Figure 1. *The reasons why the investors are not interested in mobilization of necessary capital through securities issuing*

Source: Authors' research

On the fourth question, "Does the existing law regulative in Republic of Macedonia motivate you to mobilize capital through securities issuing?",the largest part, *i.e.* 85% gave negative answer.

On the last question, "Do you think about capital mobilization through securities issuing?", only 6.25% of the firms, *i.e.* only 3 firms, said that they think about resources mobilization through capital market (Figure 2).

Figure 2. *Do the firms think about capital mobilization through securities issuing*

Source: Authors' research

6. Conclusions and recommendation for further research

The capital market is of crucial importance for the development of each national economy. The capital market development in Republic of Macedonia is on a very low level, as a result of: limited offer for securities, insufficient development of the investment banking, poor financial infrastructure, conservative investment policy of the banks, investors not interested in investing free resources in financial instruments, *etc*.

1. Having in mind the data obtained in the conducted analysis of the capital market situation and the results of the survey about the business entities financing through issue of securities, we suggest the following recommendations, which implementation will be in function of more dynamic development of the capital market in Republic of Macedonia:

2. Organizing seminars and workshops for education of the firms' managers about the affirmation of the capital mobilization through securities issuing, which will decrease the role of the bank credits in financing the current and developing work of the firms.

3. Organizing seminars, specialist courses and other forms of education of the potential investors, especially the small potential shareholders, and the employees in the financial institutions, about the advantages of investing into securities, which will increase the possibility for earning and the offer for services connected with the investing in various financial instruments.
4. Stimulating the possibilities for trading with derivative financial instruments, which will significantly increase the offer in the capital market and will create the securities portfolio structure that will maximize the yield at a definite risk level.
5. Boosting the development of the investment banking, with which the banks will enrich their range of offered banking services, *i.e.* services connected with the preparation and placement of securities, and appropriate services associated with the choice of the most appropriate way of the firms financing.
6. An aggressive promotion campaign by the non-deposit financial institutions, especially the investment funds, because they can attract bigger number of small potential investors who will invest their capital and will use their advisory services.
7. Liberalization of the law regulative that regulates the establishment and functioning of the non-deposit financial institutions (investment funds, pension funds, insurance companies). Furthermore, it is indispensable to make changes in the tax policy, which should be in function of the capital mobilizing through securities issuing.

Further researches in this area should be directed towards analysis of the capital markets conditions in the countries of the West Balkans and learning the possibilities for establishing a regional stock exchange, by using the positive experiences of the capital market functioning in the developed countries.

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DYNAMIC ANALYSIS OF FISCAL SUSTAINABILITY OF BOSNIA AND HERZEGOVINA

DINAMIČKA ANALIZA FISKALNE ODRŽIVOSTI BOSNE I HERCEGOVINE

Abstract

The aim of this paper is to carry out the empirical assessment of fiscal sustainability of Bosnia and Herzegovina (BiH). Given that BiH has been experiencing a decline or a slight growth of gross domestic product (GDP) for several years, along with steady growth in external debt and inadequate growth in tax revenues and exports, the growing debt of BiH will, in the coming period, most likely lead to an increasing budget deficit, i.e. the discrepancies between total public revenues and public expenditures. In order for fiscal policy to be long-term sustainable, these two fiscal variables need to be in balance, i.e. to co-integrate with each other or revenues exceed expenditures. On these stands and facts that intuitively suggest that the current fiscal policy of BiH is long-term unsustainable, the hypothesis of research is based. The empirical analysis, using the co-integration tests used in dynamic time series analysis, verified the consistency of this assertion. As for the analysis of fiscal sustainability (primarily long-term sustainability), a co-integration analysis will be used by determining the long-term relationship between state revenues and state expenditures.

Keywords: fiscal sustainability, state revenues, state expenditures, co-integration analysis

JEL: C50, E62

Sažetak

Cilj ovog rada je da se provede empirijska ocjena fiskalne održivosti BiH. S obzirom da BiH već nekoliko godina ostvaruje pad ili neznatan rast BDP-a, uz konstantne stope rasta vanjskog duga, nedovoljan rast poreznih prihoda i izvoza, rastuća

zaduženost BiH će vrlo vjerovatno u narednom periodu dovesti do stvaranja sve većeg budžetskog deficita odnosno razlike između ukupnih javnih prihoda i javnih rashoda. Da bi fiskalna politika bila dugoročno održiva potrebno je da ove dvije fiskalne varijable budu u ravnoteži tj. da međusobno kointegriraju ili da prihodi premašuju rashode. Na ovim stavovima i činjenicama koje intuitivno sugerišu da je postojeće fiskalna politika BiH dugoročno neodrživa bazira se i hipoteza istraživanja. Empirijskom analizom, kroz primjenu kointegracijskih testova koji se koriste u dinamičkoj analizi vremenskih serija provjerit će se konzistentnost ove tvrdnje. Empirijskom analizom, kroz primjenu kointegriskih testova koji se koriste u dinamičkoj analizi vremenskih serija provjerit će se konzistentnost ove tvrdnje. Za analizu fiskalne održivosti, (prije svega dugoročne održivosti) koristiće se kointegracijska analiza tako što će se utvrditi dugoročna veza između državnih prihoda i državnih rahoda.

Ključne riječi: fiskalna održivost, državni prihodi, državni rashodi, kointegracijska analiza

JEL: C50, E62

1. Introduction

The issue of fiscal sustainability is a key issue for each country. To understand this problem, it is necessary primarily to start from the very concept of fiscal sustainability, but in economic science and practice there is no clear and concrete procedure for defining and determining fiscal sustainability.

In the literature there are many definitions of fiscal sustainability. For example, according to Frenkel and Razin (1996), the sustainability of public finances may be defined as a fiscal policy which "continuity does not disturb budgetary solvency". Cuttington (1997) states that the fiscal policy is sustainable if the economy generates a constant debt and GDP ratio with a certain growth rate and a constant real interest rate. Mihaljek (2003) points out that the concept of fiscal sustainability implies the debtor's ability to meet long-term financial obligations towards creditors with an economically acceptable balance of income and expense / revenues and expenditures.

According to the IMF, a national economy's fiscal policy is viable if the present value of budget constraints - where public debt is smaller or equal to the discounted value of future primary fiscal surpluses - is met at all times (IMF Fiscal Monitor, 2012). Former Chief Financial Advisor to the

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International Monetary Fund (IMF) Olivier Blanchard (1990) argues that the question of sustainability is related to the analysis whether the deficit, and then the borrowing of the state, is leading to the excessive accumulation of public debt. According to this, the fiscal policy should maintain the level of deficit that the state can afford (current growth) without excessive growth of public debt.

Different authors give different definitions of sustainability, but according to most authors, the fiscal sustainability implies long-term stability and orderly servicing. The fiscal sustainability, in addition, implies a certain long-term balance between state revenues and state expenditures, the movement of which directly affects all other macroeconomic variables. The fiscal policy that leads to constant increase in debt in GDP is considered unsustainable, where the growth of debt leads to the growth of interest rates on borrowed loans, which further causes other negative macroeconomic implications by multiplier effect. In addition, the debt growth is always a result of the disparity between the revenues that the state generates and its expenditures.

The key macroeconomic variables in determining the fiscal sustainability are the budget balance, public and external debt, interest rates and rates of growth of the economy, where the analysis of sustainability is in fact an analysis of the indicators of stability of public and external debt, budget deficits, interest rates, and the state revenues and expenditures. For this reason, the analysis of fiscal sustainability is carried out by analyzing the state revenues and expenditures, as the budget balance and other variables are evaluated through the assessment of the movement of these two variables. When state expenditures exceed state revenues, a budget deficit is created, which must be financed either by means of money-issuing, or through taxation, or by additional borrowing. In order to be able to finance deficits and service all outstanding liabilities without difficulty, the funds that are regularly collected through public revenues or borrowing must be used efficiently and invested so that the growth rates of the economy in the long run are higher than the interest rates of borrowing. If borrowed funds are invested in unprofitable projects and current consumption, there will be a growing gap between state revenues and expenditures. The expenditures will grow steadily due to the increase in interest rates for the borrowed funds among other things. So, if these funds are not invested in economic activities, there will be no growth of GDP, tax revenues, or exports, thus entering into a "vortex of indebtedness". Such a situation will give rise to new problems, undermine the stability of

public finances and seriously jeopardize fiscal sustainability. For this reason, for a sustainable fiscal policy, it is necessary to ensure a long-term balance of state revenues and expenditures, that is, that these two fiscal variables co-integrate with each other.

What is most commonly encountered in the literature is the analysis of sustainability by the approach of inter-temporal budget constraint, accounting approach and the approach of the fiscal policy sustainability indicators. The tests of inter-temporal budget constraints include the stationary check of time series of fiscal variables such as fiscal deficit and public debt, discounted public debt, *etc*. In this case, the test of behavior consistency of time series of state revenues is performed, including the tests related to government expenditures and public debt with inter-temporal budget constraints (Gujerati, 1995). In the accounting approach, economic indicators are applied with focus on certain macroeconomic objectives, including the GDP projections, inflation, growth rates and interest rates. The access to sustainability indicators of fiscal policy is an extended approach to inter-temporal budget constraints, which imply the calculation of variables of the fiscal policy obtained under the conditions of inter-temporal budget constraints.

2. Review of literature

The emergence of large budget deficits in the United States prompted a series of fiscal sustainability analyzes, which are used by the approach of inter-temporal budget constraints such as the analyses of Hamilton and Flavin (1986) and many others. On the other hand, Trehan and Walsh (1991) focus directly on state revenues and expenditures and apply conventional co-integration tests. In their work, they conclude that the behavior of the US Government in the field of public finances is consistent with an inter-temporal budget constraint. In fact, all the mentioned authors use time series analysis to check whether budget deficits are too large from the perspective of the inter-temporal budget constraint. They take into account the movement of state revenues and state expenditures and, with the application of co-integration tests and unit root tests, come up with results that indicate that the US fiscal policy is sustainable.

The co-integration technique based on papers by Hamilton and Flavin, in the region of the surrounding countries, was only done by Krznar (2002). The idea for assessing the fiscal sustainability of BiH through co-integration

analysis was partly derived from this paper, where the sustainability of the Croatian fiscal policy from January 1995 to December 2001 is assessed on the basis of the movement of state revenues and expenditures. In addition to the approach of the inter-temporal budget constraint, in this paper, by the co-integration regression between total revenues and total expenditures, one can assess and test the value of the co-integration parameter, which is a condition for the existence of a "strictly" defined fiscal policy sustainability. The results of the co-integration analysis showed that the analyzed fiscal policy of Croatia is unsustainable and that the state is confronted with such a structure of pressures that could lead to the suspension of debt repayment.

The Fiscal Sustainability Analysis based on the VAR and VECM methodology was conducted by Bohn (2005) for the United States of America (US), using historic data of time series for variables: public debt, budget deficits, revenues and expenditures, growth of Gross Social Product (GDP), interest rate trends for the period from 1972 to 2003. The paper was aimed at determining whether the government policy is in line with fiscal solvency, that is, to assess whether the increase in public debt leads to an increase in the government's primary budget balance. The analysis proved that, in the regression of the primary surplus and public debt, the positive debt regression coefficient is sufficient to determine whether the fiscal policy is sustainable, *i.e.* whether it meets the government's inter-temporal budget constraint. The results proved the sustainability of the US fiscal policy. The econometric analysis of fiscal sustainability by the VAR model and co-integration analysis is also applied by Neaime (2015). The research is based on 7 European countries and in time series of selected variables from 1977 to 2003. The analyzed variables are state spending and revenues, fiscal deficit and public debt. The paper proposes measures that the European Central Bank should implement in order to accelerate the economic growth in European countries and reduce the real interest rate. The author concludes that the fiscal policy of Germany and France is sustainable, while other countries, such as Greece, Ireland, Italy, Portugal, and Spain are not fiscally sustainable. However, for development of VAR model the merits belong to Sims (1980).

In addition to previous papers, there are many of those who analyze fiscal sustainability based on panel data. The great contribution to this was given by Portuguese economist Antonio Afonso, who based his research mostly on European countries and OECD countries. Alfonso and Rault (2007), using unit root tests, Pedroni and Westerlund tests of co-integration, investigate

the fiscal sustainability of the EU-15 countries for the period from 1970 to 2006. Their analyses have shown that the fiscal policies of these countries are sustainable. Unlike this pre-crisis period of research that arose after the 2009 major economic crisis, they gave completely different results. Thus, Afonso and Jalles (2012) study the fiscal sustainability of the OECD countries in the period from 1970 to 2010 by applying the analysis of stationarity and co-integration. The results point to unsustainability in most countries, and poor sustainability in certain countries in terms of improving the position of the primary budget balance. In their paper of 2015, Afonso and Rault analyzed 27 EU countries for the period from 1960 to 2012 and came to the conclusion that in some countries fiscal sustainability was very questionable. In this paper, sustainability was first analyzed on the basis of several subsamples due to the lack of data for some member states, using Seemingly Unrelated Regression (SUR), SURADF test for integrity checking, co-integration tests, methods of pooled group environments (Pooled Mean Group - PMG) and the methods of Common Correlated Effects (CCE). Afonso and Jalles (2015) continued their research on a sample of 18 OECD countries in the period from 1970 to 2010. They used the tests of the unit roots of the first and second generation, Peroni's tests for co-integration testing and the FMOLS method of evaluating long-term causality. The results showed fiscal unsustainability of these countries and the lack of co-integration.

In addition to these papers, there are also many others that analyze the fiscal sustainability based on standard statistical indicators. In the papers of Buiter (1995), Kersan-Škabić and Mihovilović (2008), and Jošić (2008), the subject of their analyses are indicators of indebtedness ratio (debt-to-GDP ratio and debt / export ratio), indicators of debt flow (debt repayment ratio in connection to goods and services exports, ratio of annual interest on export interest rates), other indicators of indebtedness (ratio of savings and investment to GDP, direct foreign investment as a percentage of GDP, debt repayment ratio in connection to export, interest ratio on debt to GDP, *etc.*) and indicators of the ratio of international reserves and serviced debt, including the ratio of loans used for the purposes of imports of goods and services, and many others. Mihaljek (2003) analyzes the sustainability of public and external debt of Croatia using standard statistical indicators that are used by international financial institutions, investment banks and rating agencies. The paper points to the problems of sustainability of fiscal policy of Croatia concluding that, in the analyzed period (1997-2003), Croatia did not achieve fiscal positions that would enable the stabilization of public debt, although the difference between

the realized deficits (total and primary) and the deficits needed to stabilize the public debt reduced year by year. In the literature, no professional or scientific work could be found to analyze the problem of fiscal sustainability, which was also a motive for this research.

3. Cointegration

Cointegration is one of the methodological frameworks that is often used in economic analysis. The very notion of cointegration in econometric analysis was first introduced and developed by the Nobel Prize winners Engle and Granger in their work "Cointegration and error correction: representation estimation and testup" (1987).[1] According to Gujerati (2004), co-integration implies the stationarity of a linear combination of individually non-stationary time series. From an economic point of view, two variables will be co-integrated if there is a long-term equilibrium relationship between them. Cointegrated variables are non-stationary variables between which exist common trend on long term *i.e.* they have similar dynamics over time (Bahovec & Erjavec, 2009, p. 327). Mathematically this is expressed as follows:

Let X_t and Y_t be non-stationary and let Y_t be a linear function of X_t, *i.e.* Y_t can be presented as (Bahovec & Erjavec, 2009, p. 327):

$$Y_t = \alpha + \beta X_t + \varepsilon_t.$$

If this proposition is correct, deviations between Y_t and linear function $(\alpha + \beta X_t)$

$$\varepsilon_t = Y_t - (\alpha + \beta X_t)$$

should make up a stationary process, *i.e.* the difference between the dynamics of X_t and Y_t should be restricted. In that case, X_t and Y_t will have similar long-term dynamics. The manifestations that meet the said characteristic are said to be cointegrated of order (1.1) and it is written CI (1.1). The condition for cointegration is that both manifestations contain the trend, *i.e.* that they are integrated of the same order of integration (Bahovec & Erjavec, 2009, p. 327).

To determine the number of cointegration relations this paper uses the Johansen procedure according to which determining the matrix rank is required. This procedure is extremely popular and forms part of statistical packages used in the VAR model analysis (Bahovec & Erjavec, 2009, pp. 376-381).

Therefore, if the rank of the Π matrix is equal to the number of variables in the model, the vector process Z_t is stationary. If the rank of the Π matrix $= r$, where r is less than the number of variables in the model, Z_t is a non-stationary vector and there exist r cointegration relations. Then the Π matrix can be expressed as:

$$\Pi = \alpha\beta^1,$$

where α and β are matrices of order $n \times r$. The β matrix is called cointegration matrix whose columns contain parameters of corresponding long-run equations. The α matrix is the matrix of the speed of error correction whose elements are interpreted as the speed of adjustment of variables to the state of equilibrium. Relations between cointegration and the matrix rank can be the following:
- If the Π matrix is a null matrix, then variables are not cointegrated.
- When the Π matrix is a singular matrix whose rank r is less than the number of variables n, there exits r cointegration relations between the variables.
- The Π matrix is a regular matrix and the rank r is equal to the number of variables n from which it can be deduced that vector components are stationary.

Two tests are used to determine the number of cointegration vectors:
- The trace test- λ_{trace} test and
- The maximum eigenvalue test- λ_{max} test.

Distribution of the test statistic, and thereby of the critical value of λ_{trace} i λ_{max} tests, depends on the specification of deterministic components in the VEC model. For that reason, before determining the number of cointegration vectors it is necessary to determine the deterministic components in the VEC model. Models minimizing the value of information criteria are taken into account, they are compared and the decision is taken based on the characteristics of compared models.

Hypotheses of the trace test are the following:

$$H_0 : \lambda_{r+1} = \lambda_{r+2} = ... = \lambda_n = 0 \text{ (Number of cointegration relations} \leq r)$$
$$H_1 : \lambda_{r+1} \neq 0 \qquad \text{(Number of cointegration relations} \neq r)$$

Hypotheses of the maximum eigenvalue test are the following:

$$H_0 : \text{Number of cointegration relations} = r$$
$$H_1 : \text{Number of cointegration relations} = r+1$$

Test value $\lambda_{max} = \lambda_{max\,(r)=} -T \ln (1- \lambda_r+1)$, r=0,1,2,…(n-2), (n-1), where

T is number of observation according to proceded test, r is the estimated number of contegrated vectors, a λ_r+1 eigenvalue matrix Π.

In both tests the testing is carried out until the null hypothesis is rejected. When the null hypothesis is rejected for the first time, it is concluded that the number of cointegration vectors equals r. We said at the beginning that sustainable fiscal policy can be achieved only if government revenues and government expenditure are balanced, so a cointegration analysis will be done using these two variables (period q1 2004-q1 2017).

Therefore, in the next period these two fiscal variables should be in equilibrium, *i.e.* they should be cointegrated. These positions and facts, which intuitively suggest that the current fiscal policy of BiH is not sustainable in the long-term, provide the basis for the hypothesis of this research.

4. Fiscal sustainability of Bosnia and Herzegovina - empirical analysis of revenues and expenditures

Movement of revenues and expenditures is an indispensable indicator in every analysis of fiscal sustainability, since the trend in the movement of revenues and expenditures depends on whether a state will have stability in public finances. Of course, this stability also depends on other indicators such as exports and imports, investments, interest rate movements, *etc*. As stated in the introductory considerations that a country's fiscal policy would have a long-term sustainability, these two variables should be in balance, *i.e.* to have some common path over time. In the case of BiH, for many years now, in most years, the expenditures that are being generated by many levels of government considerably exceed its revenues. In addition, these expenditures are largely caused due to huge current consumption and unprofitable infrastructure projects. If current trends in the movement of these variables continue with a combination of other poor macroeconomic indicators, BiH will not be able to achieve a long-term fiscal balance. These stands and facts that intuitively suggest that the existing fiscal policy of BiH is long-term unsustainable are the grounds of the hypothesis upon which this research is based as well.

The empirical analysis, based on cointegration tests applied in the dynamic analysis of time series, will verify the consistency of this assertion.

4.1. Analysis data and methodological framework

The analysis data used in this paper is quarterly data on the consolidated revenues and consolidated expenditures of BiH for the period from the first quarter of 2004 to the fourth quarter of 2016. Data source is Ministry of finance of BiH (2014). In order to ensure that fiscal policy is long-term sustainable, these two fiscal variables need to be balanced, to co-integrate with each other or to exceed the expenditures. Based on the current movements of these indicators and their mutual relationship, it can be assumed that the fiscal policy of Bosnia and Herzegovina is long-term unsustainable, and this goes in favor to an unfavorable relationship of many of the most important macroeconomic indicators. First of all, it is the growing debt, growing liabilities for servicing external debt, large amount of non-performing loans, insufficient or insignificant GDP growth, bad position of balance and payments and bad credit rating, *etc*. These settings will be verified through the empirical analysis by applying cointegration tests used in dynamic analysis of time series. For the analysis of fiscal sustainability (primarily, long-term sustainability), a co-integration analysis will be used by determining the long-term relationship between state revenues and state expenditures. In the Eviews program, which is a software support for this paper, the Johansen test is applied, or a procedure based on a cointegration analysis between state revenues and state expenditures of BiH in order to determine by cointegration parameters whether there is a connection between these two fiscal variables, *i.e.* the following variables *R - state revenues, E - state expenditures.*

Two tests that are commonly used in this procedure will be applied, such as *the test of the matrix trace and the test of the maximum characteristic value*. Without the existence of co-integration between the selected variables, the fiscal policy of Bosnia and Herzegovina is unsustainable. If the movements of total revenues and total expenditures continue with the current trend in the future, in order to maintain the fiscal sustainability, it will be necessary to carry out radical fiscal consolidation and large structural reforms of the economy. Depending on the size of the cointegration parameters obtained through the application of these tests, there will be determined the degree of sustainability of fiscal policy. In this direction, certain measures necessary to preserve the fiscal sustainability of Bosnia and Herzegovina will be proposed.
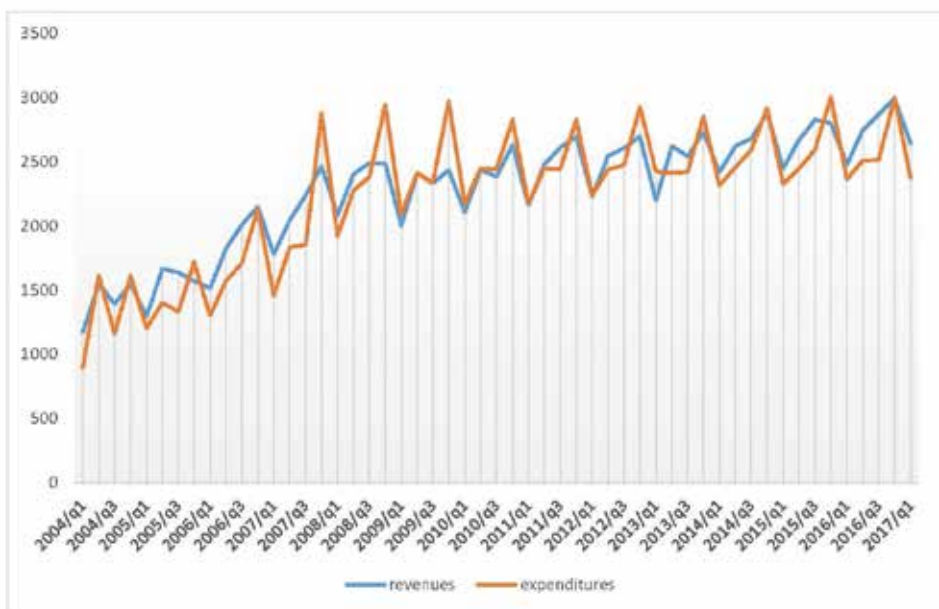
Chart 1. *Presentation of time series of variables – R (state revenues) and E (state expenditures) for the period from q1 2004 to q1 2017 (in BAM million)*

Source: Author's research

Chart 1 shows the long-term growth of state revenues and expenditures. In most years (but not all), quarterly revenue data have exceeded expenditures. This was particularly pronounced in the period after the 2009 crisis, which affected the economy Bosnia and Herzegovina as well as a huge number of other countries. In the last 2 years, when BiH realized certain surpluses, expenditures are lower than revenues. Until 2007, neither quarterly revenues nor expenditures exceeded the amount of BAM 2,000 billion, but after that period they have been constantly above this amount.

4.2. Evaluation of stationary time series

Prior to each cointegration analysis, the valuation of the stationarity of the time series is carried out, and the unit root test is used to this aim. The assessment of the stationary frequency of the time series is performed at the beginning of the analysis of the time series, given that one can draw a wrong conclusion about the connection between the variables in the case of the inclusion of non-stationary time series into the econometric model. The Augmented Dickey–Fuller test (ADF) tests is the most common test for stationarity analysis, which

was also applied in this paper. The decision is made by comparing the test values and critical values of the Dickey-Fuller distribution. The variables in the levels are first analyzed, and if the series is not stationary, the stationarity of the series of first differentials is differentiated and tested. Furthermore, if the series of first differentials is not stationary, the procedure is repeated until the series differentiates sufficiently in order to become stationary (Bahovec & Erjavec, 2009).

Hypotheses of the ADF test are as follows:

$$H_0: \gamma = 0 \text{ (Proces of } Y_t \text{ is nonstationary)}$$
$$H_1: \gamma = 0 \text{ (Proces of } Y_t \text{ is nonstationary)}$$

If the process was a stationary process, there would be a tendency for the series to periodically "return" to zero, which is not the case in the above figure. The zero hypothesis of the test assumes the non-stationary process, while the alternative hypothesis claims that the process is stationary.

Table 1. *Unit Root Tests for Variables E (State Revenues), R (State Expenditure)*

Group unit root test: Summary						
Series: E, R						
Sample: 2004q1 2017q1						
Exogenous variables: Individual effects						
Automatic selection of maximum lags						
Automatic lag length selection based on SIC: 4						
Newey-West automatic bandwidth selection and Bartlett kernel						
Balanced observations for each test						
			Cross-			
Method	Statistic	Prob.**	sections	Obs		
Null: Unit root (assumes common unit root process)						
Levin, Lin & Chu t*	-2.30838	0.0105	2	96		
Null: Unit root (assumes individual unit root process)						
Im, Pesaran and Shin W-stat	-1.30568	0.0958	2	96		
ADF - Fisher Chi-square	6.98831	0.1365	2	96		
PP - Fisher Chi-square	19.0247	0.0008	2	104		
** Probabilities for Fisher tests are computed using an asymptotic Chi						

Source: Author's calculation

The previous table shows the value of the ADF size test, which is 6.98831. The outcome of the test is to accept the zero hypothesis of non-stationarity. Subsequently, the unit root test for the analyzed variables in the first differentials is carried out.

Table 2. *Unit Root Tests for Variables E (State Revenues), R (State Expenditures)*

Null Hypothesis: D(E) has a unit root				
Exogenous: Constant				
Lag Length: 3 (Automatic - based on SIC, maxlag=10)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.745273	0.0063
Test critical values:	1% level		-3.574446	
	5% level		-2.923780	
	10% level		-2.599925	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(E,2)				
Method: Least Squares				
Sample (adjusted): 2005Q2 2017Q1				
Included observations: 48 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(E(-1))	-1.914774	0.511251	-3.745273	0.0005
D(E(-1),2)	0.432302	0.387826	1.114678	0.2712
D(E(-2),2)	-0.030699	0.264267	-0.116166	0.9081
D(E(-3),2)	-0.472351	0.133291	-3.543754	0.0010
C	45.23891	26.63818	1.698273	0.0967
R-squared	0.963687	Mean dependent var		-4.354167
Adjusted R-squared	0.960309	S.D. dependent var		797.8630
S.E. of regression	158.9554	Akaike info criterion		13.07346
Sum squared resid	1086474.	Schwarz criterion		13.26837
Log likelihood	-308.7630	Hannan-Quinn criter.		13.14712
F-statistic	285.2854	Durbin-Watson stat		2.051541
Prob(F-statistic)	0.000000			

Source: Author's calculation

On the basis of unit root tests, one can conclude that the observed series are non-stationary, and that their first differentials are stationary, *i.e.* that the variables are integrated in the same order, which is designated by I (1).

4.3. Cointegration analysis

Having conducted stationary tests, a cointegration analysis of the selected variables is approached. Johansen's approach to cointegration was carried out in Eviews. The determination of the number of cointegration vectors was performed using the two following tests.

Table 3. *Test of the eigenvalue matrix*

Number of cointe-gration vectors	Inherent value (eigenvalue)	Size test	Critical value (0.05)	Probability
0	0.337069	25.04803	15.49471	0.0014
1	0.076933	4.08275*	3.841466	0.0433

* Denotes the rejection of the zero hypothesis at a level of significance of 5%
Source: Author's calculation

Table 4. *Test of maximum eigenvalue*

Number of cointe-gration vectors	Inherent value	Size Test	Critical value (0.05)	Probability
0	0.337069	20.96528	14.2646	0.0038
1	0.076933	4.08275*	3.841466	0.0433

* Denotes the rejection of the zero hypothesis at a level of significance of 5%
Source: Author's calculation

The implemented test of the eigenvalue matrix and the test of the maximum eigenvalue indicate that we have two cointegration vectors, which is not in accordance with the model assumptions. Namely, in the case of the analysis of two variables, the maximum number of cointegration relations is equal to one (Bahovec & Erjavec, 2009). The estimated cointegration equation, or the long-term equation, is:

$$E = 0.95072.R + 1$$

The cointegration equation suggests that there is a long-term balance between state revenues and state expenditures and that the existing fiscal policy of BiH is sustainable in the long term.

5. Conclusion

The aim of the study in this paper was the dynamics of the movement of fiscal variables of state revenues and state expenditures, which are of key importance for assessing fiscal sustainability. On the basis of the cointegration parameters, there was an attempt to determine whether there is a connection, and of what kind, between state revenues and state expenditures as two fiscal variables, which long-term balance is a prerequisite for the existence of fiscal sustainability in BiH, for without the existence of co-integration between them, the fiscal policy is unsustainable. In the coming period, these two fiscal variables should be in balance, *i.e.* to co-integrate with each other. These stands and facts intuitively suggesting that the current fiscal policy of BiH is long-term unsustainable are the grounds of the hypothesis upon which this research is based. The conducted cointegration tests have led us to conclude that due to the existence of two cointegration vectors, we have fiscal sustainability, *i.e.* long-term balance of state revenues and expenditures.

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Appendices

Appendix 1. *Determining a suitable model of a cointegration equation*

Series: E R						
Sample: 2004Q1 2017Q1						
Included observations: 53						
Null hypothesis: Series are not cointegrated						
Cointegrating equation deterministics: C						
Automatic lags specification based on Schwarz criterion (maxlag=10)						
Dependent	tau-statistic	Prob.*	z-statistic	Prob.*		
E	-0.71301	0.9434	-2.26665	0.919		
R	-0.64888	0.9501	-1.86003	0.9382		
*MacKinnon (1996) p-values.						
Intermediate Results:						
		E	R			
Rho - 1		-0.15155	-0.1211			
Rho S.E.		0.212546	0.186634			
Residual variance		22599.01	15904.55			
Long-run residual variance		2105.581	1562.635			
Number of lags		3	3			
Number of observations		49	49			
Number of stochastic trends**		2	2			
**Number of stochastic trends in asymptotic distribution						

Appendix 2. *Johansen cointegration test*

Sample (adjusted): 2004Q3 2017Q1						
Included observations: 51 after adjustments						
Trend assumption: Linear deterministic trend						
Series: R E						
Lags interval (in first differences): 1 to 1						
Unrestricted Cointegration Rank Test (Trace)						
Hypothesized		Trace		0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**		
None *	0.337069	25.04803	15.49471	0.0014		

At most 1 *	0.076933	4.08275	3.841466	0.0433		
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level						
* denotes rejection of the hypothesis at the 0.05 level						
**MacKinnon-Haug-Michelis (1999) p-values						
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)						
Hypothesized		Max-Eigen	0.05			
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**		
None *	0.337069	20.96528	14.2646	0.0038		
At most 1 *	0.076933	4.08275	3.841466	0.0433		
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level						
* denotes rejection of the hypothesis at the 0.05 level						
**MacKinnon-Haug-Michelis (1999) p-values						
Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):						
R	E					
-0.0082	0.007799					
0.002316	0.000111					
Unrestricted Adjustment Coefficients (alpha):						
D(R)	-42.4621	-37.8305				
D(E)	-168.116	-11.9121				
1 Cointegrating Equation(s):		Log likelihood	-669.802			
Normalized cointegrating coefficients (standard error in parentheses)						
R	E					
1	-0.95072					
	-0.05551					
Adjustment coefficients (standard error in parentheses)						
D(R)	0.348342					
	-0.17809					
D(E)	1.379155					

Endnote

1   In 2003, Engle and Granger received the Nobel Prize for developing the concept of cointegration and defining causality problems as the basis of today's contemporary macroeconomic modeling.

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FUZZY LOGIC MODEL OF SOFT DATA ANALYSIS FOR CORPORATE CLIENT CREDIT RISK ASSESSMENT IN COMMERCIAL BANKING

MODEL NEIZRAZITE LOGIKE ZA ANALIZU KREDITNOG RIZIKA KOD KORPORATIVNIH KLIJENATA KOMERCIJALNIH BANAKA

Abstract

This paper deals with the use of fuzzy logic as a support tool for evaluation of corporate client credit risk in a commercial banking environment. It defines possibilistic distribution of soft data used for corporate client credit risk assessment by applying fuzzy logic modeling, with a major goal to develop a new expert decision-making fuzzy model for evaluating credit risk of corporate clients in a bank. Currently, predicting a credit risk of companies is inaccurate and ambiguous, as well as affected by many internal and external factors that cannot be precisely defined. Unlike traditional methods for credit risk assessment, fuzzy logic can easily incorporate linguistic terms and expert opinions which makes it more adapted to cases with insufficient and imprecise hard data, as well as for modeling risks that are not fully understood. Fuzzy model of soft data, presented in this paper, is created based on expert experience of corporate lending of a commercial bank in Bosnia and Herzegovina. This market is very small and it behaves irrationally and often erratically and therefore makes the risk assessment and management decision making process very complex and uncertain which requires new methods for risk

modeling to be evaluated. Experts were interviewed about the types of soft variables used for credit risk assessment of corporate clients, as well as for providing the inputs for generating membership functions of these soft variables. All identified soft variables can be grouped into following segments: stability, capability and readiness/willingness of the client to repay a loan. The results of this work represent a new approach for soft data usage/assessment with an aim of being incorporated into a new and superior soft-hard data fusion model for client credit risk assessment.

Keywords: fuzzy logic, credit risk, default risk, commercial banking

JEL: C53, G21, G32

Sažetak

Ovaj rad koristi neizrazitu logiku kao alat za procjenu kreditnog rizika korporativnih klijenata komercijalnih banaka. Rad definira mogućnošću distribuciju mekih podataka koji se koriste za procjenu kreditnog rizika korporativnih klijenata koristeći neizrazitu logiku, sa ciljem razvoja novog ekspertnog sistema za procjenu gore pomenutog rizika. Trenutno, procjena kreditnog rizika kompanija je nejasna i neprecizna, te je pod utjecajem brojnih internih i eksternih faktora koje nije moguće jasno definirati. Za razliku od tradicionalnih metoda za procjenu kreditnog rizika, neizrazita logika može inkorporirati lingvističke izraze te mišljenja eksperata čime je prikladniji za slučajeve gdje imamo neprecizne ili nepotpune podatke, kao i za modeliranje rizika koji nisu potpuno shvaćeni. Model neizrazite logike koji se koristi u ovom radu je baziran na iskustvima korporativnog kreditiranja komercijalne banke u Bosni i Hercegovini. Ovo tržište je malo te se ponaša neracionalno i često nepravilno što čini procjenu rizika te odluke menadžmenta kompleksnim i nesigurnim što kreira potrebu za novim modelom za procjenu rizika. Eksperti su intervjuirani za vrste mekanih varijabli koje se koriste za procjenu kreditnog rizika korporativnih klijenata, kao i za inpute potrebne za generisanje funkcija članstva tih mekanih varijabli. Sve identificirane mekane varijable mogu se grupisati u slijedeće segmente: stabilnost, sposobnost i spremnost klijenta na vraćanje kredita. Rezultati ovog rada predstavljaju novi pristup upotrebe mekih podataka, sa ciljem inkorporacije istih u novi i superiorni model fuzije mekih i tvrdih podataka za procjenu kreditnog rizika klijenata.

Ključne riječi: neizrazita logika, kreditni rizik, rizik neplaćanja, komercijalno bankarstvo

JEL: C53, G21, G32

1. Introduction

Credit risk is one of the largest risks faced by commercial banks and it is assuming increased importance in a changing regulatory regime and quite volatile market conditions. Commercial banks generally use different methods and procedures for assessing credit risk but it is the primary job of a loan officer to evaluate an applicant's financial position in order to determine whether the applicant will be able to repay the bank loan it requests/applies for. Risk analysis techniques are powerful tools that help professionals manage uncertainty and can provide valuable support for decision making. Risk analysis helps us to take both certain and uncertain elements and include them in a calculation of specific scenarios of the future events. These techniques can be either qualitative or quantitative depending on the information available and the level of detail that is required (Bennett & Bohoris, 1996, pp. 467-475). Quantitative techniques rely heavily on statistical approaches while qualitative techniques rely more on judgment than on statistical calculations.

The complex and uncertain nature of loan processing has enforced banks, and other financial institutions, make loan decisions by utilizing experienced lending officers to perform the essential tasks and evaluations. A loan officer has to fully understand the level of risk a loan would entail. Only when all risk factors are satisfactory the loan is approved. To make such risk assessment of a corporate client, a loan officer has to understand and assess the following: the financial position, repayment ability and strength of the company, whether the company has a sound record of credit worthiness, work history, what is applicants experience and management skills, does the company have a sound business plan which demonstrates his/her understanding of the business and his/her commitment to the success of the business, is company's cash-flow solid and stable, willingness to repay debt and many more. Such analysis incorporates not only the economic data but also the qualitative information concerning the borrower. Data which is subject to this analysis can be classified as hard and soft data. Hard data is usually objective, they express a measure and thus are measurable, quantitative and crisp, while soft data is linguistic, qualitative, subjective and non-measurable.

In addition to experienced loan officers, many banks usually use various types of scoring models to assess credit risk of a borrower before disbursing a loan. Scoring models were initially introduced to standardize the decision making process and to increase the transparency of a bank's business. They are usually estimated with historical data and statistical methods. Scoring models generally

do not follow the Basel II regulatory capital framework definitions since their primary aim is not to fulfill the supervisory requirements but to provide internal decision support. In addition to traditional scoring models, complexity and repetitiveness of decisions in the finance area have made financial services sector an area where various kinds of expert systems have found their many applications. An expert system that evaluates loan applications reduces the time and improves the quality of the evaluation (Gupta & Celtek, 2001, p. 18). Expert systems are computer programs which summarize knowledge of human experts and are used for decision-making and/or problem-solving.

While bank risk professionals strive for a better understanding of risk and employ complex models for risk assessment, many risks are still unknown or not well understood. Traditional risk models are based on probability and classical set theory which are widely used for assessing market, credit, insurance and trading risk. However, many risks still cannot be analyzed sufficiently by applying classical probability models because of lack of sufficient experience data, lack of knowledge and vagueness, as well as complex cause-and-effect relationships that are inherent in certain risk types. Many authors believe that the best way to solve obstacles in facing with any type of uncertainties is by utilizing fuzzy logic and theory of possibility. It provides a mathematical advantage to capture the uncertainties associated with human cognitive processes, such as thinking and reasoning. "Fuzzy logic is a superset of conventional (Boolean) logic that has been extended to handle the concept of partial truth, truth values between completely true and completely false" (Gupta & Celtek, 2001, p. 20). By applying fuzzy logic most variables of a model are described in linguistic terms which makes fuzzy logic models more intuitively similar to the human reasoning. For risks that do not have a proper quantitative probability model, a fuzzy logic system can help model the cause-and-effect relationships, assess the degree of risk exposure and rank the key risks in a consistent way, considering both the available data and experts opinions (Shang & Hossen, 2013, p. 3).

Fuzzy logic has been utilized in various industry areas such as, in artificial intelligence, computer science, control engineering, decision theory, expert systems, logic, management science, operations research, pattern recognition and robotics (Zimmermann, 2001, pp. 158-404). Considering risk assessment, many studies of fuzzy logic have appeared in different business areas such as information security, software development, ground water nitrate risk management, system failure, civil hazardous materials, natural hazards, bank, *etc.* (Zirakja & Samizadeh, 2011, pp. 99-100).

Fuzzy set theory and fuzzy logic were introduced by Lotfi A. Zadeh in 1965, who was almost single-handedly responsible for the early development in this field. Fuzzy Set Theory is a mathematical theory for describing impreciseness, vagueness and uncertainty. A fuzzy set is a collection of objects with graded membership. As an extension of his theory of fuzzy sets and fuzzy logic (Zadeh, 1965, pp. 338-353), the "Theory of Possibility" was developed by Zadeh in 1978 in which he explained that possibility distributions were meant to provide a graded semantics to natural language statements by interpretation of membership functions of fuzzy sets as possibility distributions. He introduced the concept of possibilistic fuzzy distributions, contrary to random and probabilistic distributions, and noticed that what is probable must initially be possible, but not vice versa. Zadeh (1978) wrote that in dealing with soft data, encountered in various fields, the standard practice was to rely almost completely on probability theory and statistics and he stressed out that those techniques could not cope effectively with those problems in which the softness of data is non-statistical in nature. Soft data encounter predominance of fuzziness. Author's rationale for using fuzzy logic for soft data analysis "rests on the premise that the denotations of imprecise terms which occur in soft database are for the most part fuzzy sets rather than probability distributions" (Zadeh, 1981, pp. 515-541). The difference between probability and possibility is that the concept of possibility is an abstraction of our intuitive perception while concept of probability depends on likelihood, frequency, proportion or strength of belief.

The purpose of this study is to design and develop fuzzy distribution of soft data/variables used for corporate client credit risk assessment by applying fuzzy logic. Terms fuzzy and possibilistic distributions are used interchangeably. Expert sample is created ad hoc with a commercial bank in Bosnia and Herzegovina that was willing to take part in this project at this initial phase. We are now in a process of adding data from other local banks for the purpose of expanding the relevant soft database. Top senior credit risk assessment experts from this bank were interviewed and they have provided all information about the process, data processing and inputs used for credit risk assessment. The next step was to identify and generate a list of the most significant soft variables and their descriptions. For this purpose, mentioned experts and relevant literature were consulted in the definition of membership functions. Experts were interviewed for the types of soft variables used for conducting credit risk assessment of corporate clients in a local commercial bank in Bosnia and Herzegovina as well as for describing the membership

functions of these soft variables. Experts have provided inputs for generating universe of discourse and the number and description of membership functions related to each soft variable. Data processing is done by listing all identified soft variables and by mapping their membership values into membership functions based on inputs from interviewed experts. The final step was in generating graphical illustration of possibility distribution of each soft variable. The results of this work represent a new approach for soft data usage/assessment with an aim of being incorporated into a new and superior soft-hard data fusion model (Hodzic, 2016a, pp. 58-66; Hodzic, 2016b, pp. 17-32) for credit risk assessment that will assist bank managers in identifying credit risk factors and improve evaluation of the corresponding default risks of their loan applicants. Design and development of possibilistic distribution of soft data/variables used for corporate client credit risk assessment serves as the first step in this process.

In this paper, we first present a general overview of credit risk assessment in commercial banking, followed by a brief explanation of fuzzy logic and Theory of possibility. Next section provides an overview of the results of this study based on which possibility distribution model of identified soft variables is developed, used by the bank for assessing the credit risk of a corporate loan applicant. Finally, we make conclusions and give directions for future research.

2. Soft data collection and fuzzy distributions based on expert interviews

Considering Zadeh's work, in which he explained that soft database are for the most part fuzzy sets rather than probability distributions, in this section we show fuzzy distributions of soft variables used in a commercial bank for credit risk assessment of corporate clients. All identified soft variables can be grouped in following segments: stability, capability and readiness/willingness of the client to repay a loan. Each of these segments have a variety of impact on the assessments going from low impact to medium and high. The following soft variables are identified and used by the targeted bank for the purpose of credit risk assessment of a corporate client:
■ Stability/capability of the loan applicant based on company size considering its total assets,
■ Stability/capability of the loan applicant based on company size considering its total income,

- Stability/capability of the loan applicant based on company size considering its total number of employees,
- Stability of the loan applicant considering number of years the company is doing business,
- Stability of the loan applicant considering number of years it operates profitably (considering operating income),
- Stability of the loan applicant considering number of days of blocked bank accounts in the last year,
- Stability of the loan applicant considering company's repayment history in the bank (if already a client),
- Stability of the loan applicant considering company's worst regulatory classification found in the Central Credit Registry,
- Stability of the loan applicant considering future development of the company,
- Stability of the loan applicant considering company's competition,
- Readiness/willingness/character of the management of the company to repay the loan,
- Capability/quality of the company's management.

For linguistic semantic values Kickert (1979) demonstrated that there is no significant computational difference between selection of a wide versus a narrow universe of discourse, so no limits in this regard were used in this study. Upon identification of soft variables and their universe of discourse, it was necessary to develop their membership functions. The identification of the number, size and shape of the membership function of a soft variable is often subjective and unpredictable/arbitrary/unmotivated, since its purpose is to incorporate the expert knowledge into a fuzzy system. Although many shapes can be used, there are authors that recommend the use of simple membership function shapes, such as triangles and trapezoids in order to improve maintainability and execution results (Viot, 1993, pp. 26-33; Kosko, 1993, pp. 76-81). For the purpose of this study membership functions are generated completely unmotivated and are expressing the interviewed experts own opinion and experience.

The results of this study are provided in Figures 1-9. Moreover, due to confidentiality we do not disclose estimation results that have been given by the bank experts but we are instead showing graphical illustration of the possibility distribution results.

Stability and capability of a company is assessed considering company's size based on its total assets, total income, as well as total number of employees. There are five outputs that can be estimated such as extremely small, small, medium, large and extremely large company. Fuzzy distributions of these variables, as shown in Figure 1-3, demonstrate trapezoid membership functions. The output for extremely small shows a left trapezoid membership function, while output for extremely large shows right trapezoid membership function. The distributions for small, medium and large demonstrate trapezoid membership function that are not represented in smooth lines, but can be considered as extended trapezoid membership functions. Such distributions are result of experts' estimations which is based on grouping the values from the universe of discourse in certain ranges and assigning the truth level per defined ranges.
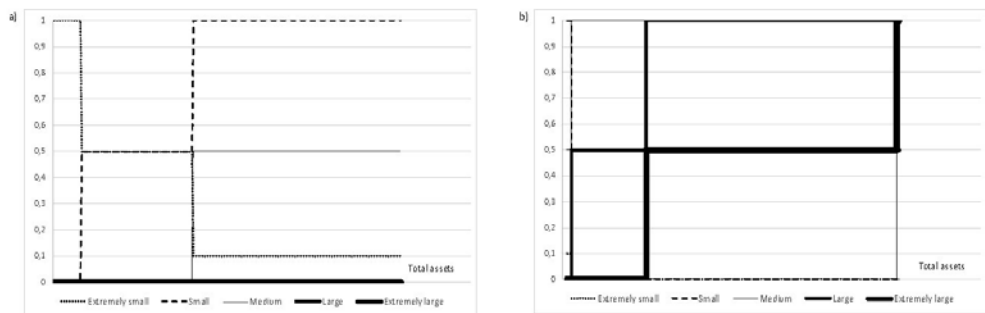
Figure 1. *Stability/capability of the loan applicant based on company size considering its total assets: (a) represents the first 1% of total universe of discourse, (b) represents the remaining 99% of total universe of discourse*

Source: Authors' research
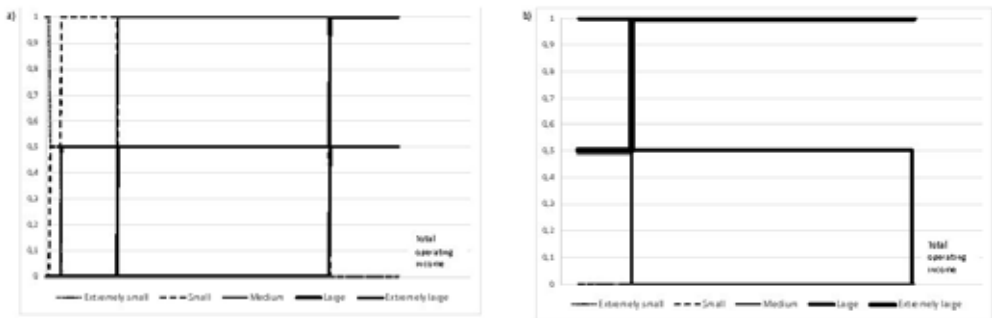
Figure 2. *Stability/capability of the loan applicant based on company size considering its total income: (a) represents the first 5% of total universe of discourse, (b) represents the remaining 95% of total universe of discourse*

Source: Authors' research
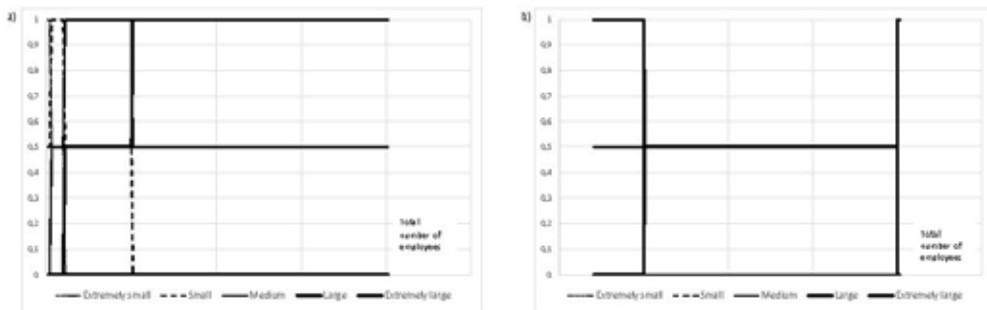
Figure 3. *Stability/capability of the loan applicant based on company size considering its total number of employees: (a) represents the first 10% of total universe of discourse, (b) represents the remaining 90% of total universe of discourse*

Source: Authors' research

Stability of the company is also assessed based on the number of years a company is doing business, as well as number of years it operates profitably (considering operating income). Figures 4 and 5 show fuzzy distributions for unstable, less stable, stable, very stable and extremely stable company.
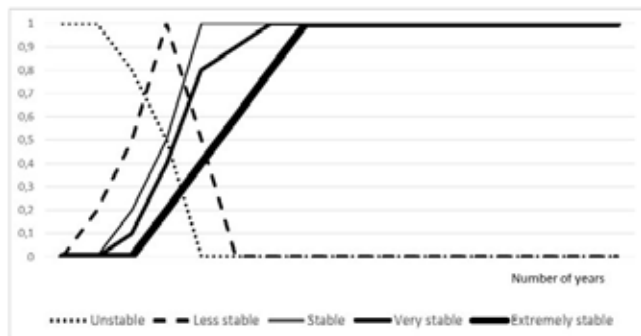
Figure 4. *Stability of the loan applicant considering number of years the company is doing business*

Source: Authors' research

Fuzzy distributions of stability of the company based on number of years it is in the business show left trapezoid membership function for unstable company, right trapezoid for stable, very stable and extremely stable company, while less stable is a triangular membership function. Same output of fuzzy distributions is shown in case of stability of the company based on number of years it operates profitably (considering operating income).

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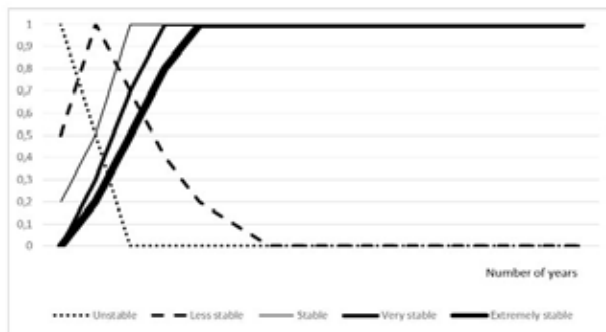
Figure 5. *Stability of the loan applicant considering number of years it operates profitably (considering operating income)*

Source: Authors' research

Number of days of blocked bank accounts a company had in the last year is also an indicator of the stability (and capability) of a company and based on this variable a bank is assessing whether a company is unstable, less stable, stable, very stable and extremely stable company. Fuzzy distributions of these variables, as shown in Figure 6, demonstrate trapezoid membership functions. The output for the unstable one shows a right trapezoid membership function, while output for stable, very stable and extremely stable shows left trapezoid membership function. The distribution for less stable company demonstrate left and right trapezoid membership function. All shown distributions are not represented in smooth lines, but can be considered as extended trapezoid membership functions. Such distributions are result of experts' estimations which is based on grouping the values from the universe of discourse in certain ranges and assigning the truth level per defined ranges.
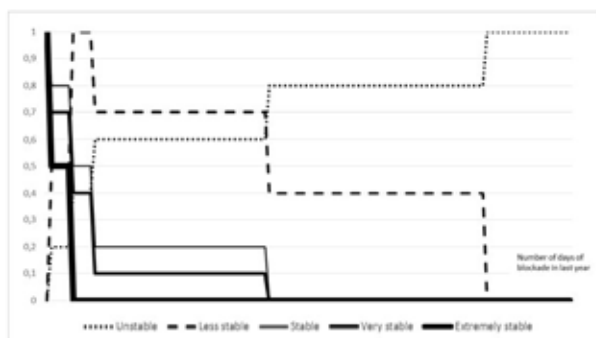
Figure 6. *Stability of the loan applicant considering number of days of blocked bank accounts in the last year*

Source: Authors' research

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Same results, in terms of types of distributions, is shown in case of assessing stability (and capability) of a company's repayment history in the bank (if already a client), as shown in Figure 7, and company's worst regulatory classification from the Central Credit Registry. Compared to distributions shown in Figure 6 and Figure 8, interviewed experts have designated more granularity for ranges defined for the universe of discourse in case of distributions shown in Figure 7.
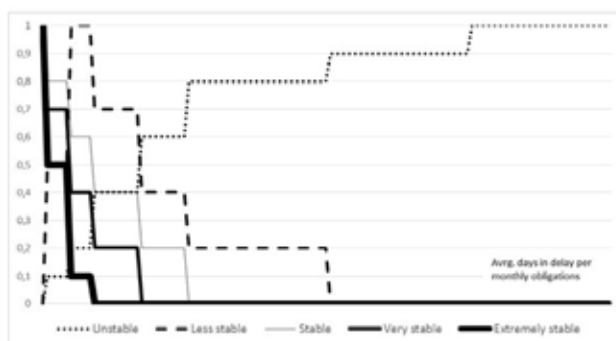
Figure 7. *Stability of the loan applicant considering company's repayment history in the bank (if already a client)*

Source: Authors' research
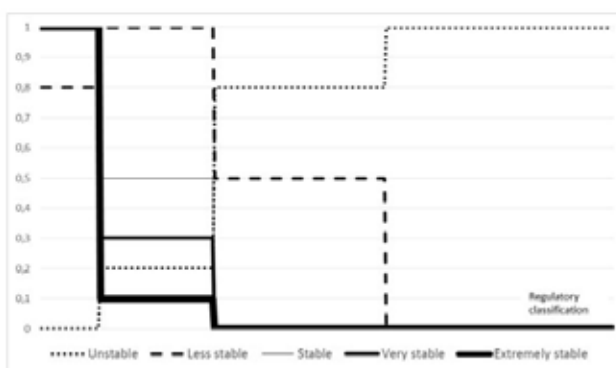
Figure 8. *Stability of the loan applicant considering company's worst regulatory classification found in the Central Credit Registry*

Source: Authors' research

The last four soft variables, that interviewed experts use for assessing the credit risk of a loan application for a corporate client, show identical membership functions in terms of types of distributions, as demonstrated in Figure 9. The membership functions of future development of the company, readiness/

willingness/character of the management of the company to repay the loan and capability/quality of the company's management are assessed using the same values of universe of discourse, *i.e.* negligible, weak, average, good and excellent. Company's competition impact/influence is assessed by using values critical, strong, moderate, low and negligible impact as the universe of discourse.

The output for the unstable ones shows a S-membership function, while output for stable and extremely stable show a Z-membership function. The distribution for less stable company demonstrate left and right triangular membership function, while very stable show a right triangular membership function. All shown distributions are not represented in smooth lines.
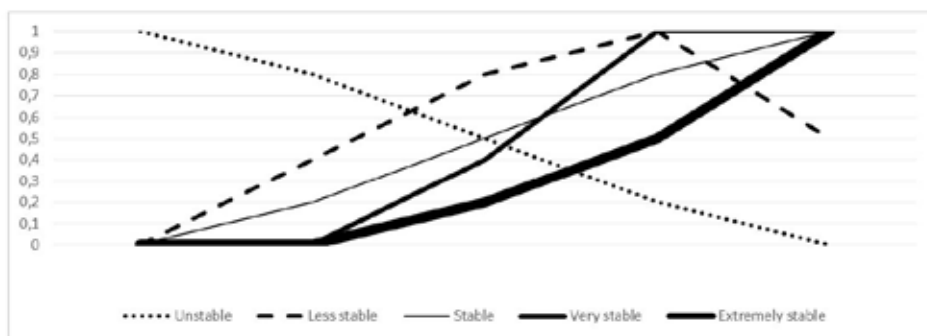
Figure 9. *Possibilistic distribution for: Stability of the loan applicant considering future development of the company, Stability of the loan applicant considering company's competition, Readiness/Willingness/Character of the management of the company to repay the loan, Capability/Quality of the company's management*

Source: Authors' research

In general, results show that fuzzy modeling of soft data, used for corporate client credit risk assessment in targeted bank, is presented as left and/or right triangular and trapezoid fuzzy distributions, as well as various combinations of them.

3. Conclusion

In this paper, a possibility distribution model of key/main soft variables, used for corporate client credit risk assessment in commercial banking, has been developed based on specific input data given by the experts. We have presented a new methodology for transforming linguistic and intuitive (soft) information about bank credit risk data into a series of mathematical fuzzy

(possibilistic) distributions which can be handled quantitatively and combined (fused) with related probabilistic data.

We conducted a series of interviews with risk specialists from a local bank in order to collect a variety of soft data related to credit risk assessment of local corporate clients. Similar interviews will be conducted in the future with other local banks as well as extended to incorporate soft data used for private individual credit risk assessment.

Our final aim is to be able to improve bank credit risk assessments and other relevant and highly needed information, where various assessment and modeling approach is suggested and/or anticipated, by using exact and more precise mathematical methodology.

4. Future research

The results of this work represent a new approach for corporate client soft data usage/assessment in commercial banking with an aim of finally being incorporated into a new and superior soft-hard data fusion model (Hodzic, 2016a, pp. 58-66; Hodzic, 2016b, pp. 17-32) for client credit risk assessment and other similar assessments. Future research will be focused on analysis of hard and soft data of a pool of targeted corporate clients that did not default, classified as Good choice of the bank, and those that did default, classified as Bad choice of the bank. Hard data will be analyzed by using probabilistic mathematical methodology (random data models), while soft data by applying the possibility mathematical methodology (fuzzy data models) and results of this study. The results of such analysis will be used as a testing sample for the new and superior soft-hard data fusion model for client credit risk assessment. Further tests are necessary to conclude whether this approach can be validated such as interviews with more experts from different banks to validate the possibility distributions, as well as main/key soft variables and their membership functions. Further data can be obtained from other banks, as well as performing stress testing on the outputs of the model, in order to test the final system and compare its predictions against actual bank decisions. The research will be extended to incorporate a study on private individual customers are well.

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THE EFFECTS OF THE FINANCIAL CRISIS ON THE SECURITIES MARKETS OF BOSNIA AND HERZEGOVINA: INSTITUTIONAL INVESTORS' PERSPECTIVE

UTICAJ FINANSIJSKE KRIZE NA TRŽIŠTA VRIJEDNOSNIH PAPIRA U BOSNI I HERCEGOVINI: PERSPEKTIVA INSTITUCIONALNIH INVESTITORA

Abstract

Although the financial system in Bosnia and Herzegovina is characterized by a pronounced bank centricity, organisations in search of funding can look for financing solutions by entering the primary securities market. Securities market enables business enterprises as well as various levels of government to raise funds through direct contact with investors, bypassing intermediaries. On the other hand, equity and debt securities provide good opportunity for financial entities with surplus of funds to invest and diversify their portfolios.
The authors' study conducted in 2012 revealed operations and preferences of the investment funds – the largest institutional investors in the securities markets of Bosnia and Herzegovina at the time. It was conducted during the period when the markets of Bosnia and Herzegovina felt the consequences of the financial crisis that started to impact the developing countries in 2008. This research focuses on the securities markets of Bosnia and Herzegovina in the context of the financial crisis as well as the determining the activities and preferences of investment funds in the

markets, with the aim of comparing the recent results with the earlier research efforts and determining possible changes to the decision-making criteria in the period after the crisis. The research will also show whether or not the institutional investors have evolved over the past five years when it comes to making investment decisions. The importance of these research efforts is in helping issuers improve their decision-making process in line with the needs of the investors.

Keywords: financial market, primary issue, securities, institutional investors, financial crisis, Bosnia and Herzegovina

JEL: G01, G10, G11, G23

Sažetak

Iako finansijski sistem u Bosni i Hercegovini karakteriše izrazita bankocentričnost, finansijski deficitarni učesnici na finansijskom tržištu mogu se finansirati i izlaskom na tržište primarne emisije vrijednosnih papira. Tržište vrijednosnih papira omogućava privrednim društvima, kao i različitim nivoima vlasti, prikupljanje dodatnih finansijskih sredstava bez posrednika, odnosno putem direktnog kontakta sa investitorima. Emisija vlasničkih i dužničkih vrijednosnih papira, s druge strane, omogućava finansijski suficitarnim subjektima investiranje raspoloživih sredstava i diversifikaciju portfolija.

Istraživanje autora koje je provedeno 2012. godine otkrilo je operacije i preferencije tada najvećih institucionalnih ulagača na tržištima vrijednosnih papira Bosne i Hercegovine − investicionih fondova. Istraživanje je provedeno u periodu kada su se na tržištima Bosne i Hercegovine osjećale posljedice finansijske krize, koja je u razvijenom dijelu svijeta započela 2008. godine. Predmet ovog istraživanja jesu tržišta vrijednosnih papira u Bosni i Hercegovini u kontekstu finansijske krize, kao i da se utvrde aktivnosti i preferencije investicionih fondova na tim tržištima, s ciljem komparacije recentnih rezultata sa rezultatima ranijeg istraživanja i utvrđivanja eventualnih promjena kriterija odlučivanja u postkriznom periodu. Istraživanje će, također, pokazati da li su u periodu od pet godina institucionalni investitori evoluirali u procesu donošenju odluka o investiranju. Značaj ovakvih istraživanja jeste što omogućavaju donosiocima finansijskih odluka emitenta unapređenje procesa odlučivanja o kreiranju vrijednosnih papira prema potrebama investitora.

Ključne riječi: finansijsko tržište, primarna emisija, vrijednosni papiri, institucionalni investitori, finansijska kriza, Bosna i Hercegovina

JEL: G01, G10, G11, G23

1. Introduction

The latest global financial crisis is considered to be the most serious financial crisis after the Second World War. It started in 2007 in the USA and by 2008 it quickly transferred to the rest of the world, including Bosnia and Herzegovina (BiH). Financial markets in BiH are still at the elementary stage of development when it comes to the diversity of market material and participants. In addition, the financial system of Bosnia and Herzegovina is bank-centric (84% of total financial assets is focused on around 20 commercial banks).

The aim of this paper is to investigate and outline the institutional investors' preferences and their investment activities in financial markets of BiH during the latest global financial crisis. Additionally, the results of the empirical research from 2012 will be compared with the results of the more recent research conducted in 2017. This will help us observe not only preferences but also investors' attitudes towards investing in different types of securities, their investment potential and portfolio structure, tendencies to take/avoid risks, *etc*.

2. Literature review

Recent literature related to financial markets refers to many different research efforts focused on the behaviour of institutional investors in the light of the recent global financial crisis. For example, Mentel, Brozyna, and Radwanski (2016, pp. 91-101) attempted to assess the effectiveness of investment funds placement within the Polish market over the period 2000-2013. Thorough analysis of the results in terms of effectiveness indicators measured by Sharpe's, Treynor's, Jensen's, Sharpe's Alpha, Modigliani's and information indices, they showed that in most cases effectiveness of asset management funds was higher in 2000-2006 than later on during the crisis. Based on beta coefficient value, Mentel, Brozyna and Radwanski concluded that, during the crisis the majority of the compared funds applied more aggressive investment strategies than before the crisis.

Research conducted by Pirtea, Barna, and Nachescu (2013, p. 1) analysed the behaviour of the main institutional investors (mutual funds, pension funds, and hedge funds) under the impact of the global financial crisis, and found that the modifications which intervened in asset assignment and investment relocation and the instability generated in the global financial system had immediate effects on all the portfolios of institutional investors, regardless

of their classification category. Under the conditions of capital flow increase, adjusted by the global financial crisis, the analysis and empirical proofs showed the tendency of institutional investors' asset reallocation towards developed markets and their withdrawal from the emerging ones.

Behaviour of institutional investors during the crisis was the subject of research conducted by Krišto, Stojanović, and Pavković (2014, pp. 102-117). In this paper, institutional investors were seen as the key investors in the financial market and the crucial market makers who supported market liquidity and activity as well as important pillars of pension systems, responsible for maintaining financial stability. Institutional investors, mostly pension funds and insurance companies, were considered to have a positive effect on financial stability because of their long-term investment strategy and funding. The global financial crisis and its impact on financial market stability revealed serious systemic risks and interconnections between financial markets movements and institutional investors' investment behaviour. Their investment policy, outflows and fire sales on financial markets had a great impact on the overall market stability and contributed to the deepening of the financial crisis.

Pirgaip and Taşdemir (2017, pp. 1-14) explored the use of financial derivatives of the Turkish investment funds during the 2008-09 financial crisis period. The authors collected data for a sample covering 193 funds (163)/trusts (30) of which over 30% actively use derivatives. They showed that, when compared to non-users, the derivatives users were the ones with a higher risk appetite. On the other hand, systematic risk was lower for the same users whereas idiosyncratic risk was higher. They rejected hypothesis that there was a stronger relation between past performance and risk change for derivatives user funds, since their findings showed that the same relation was weaker for the derivatives users. The authors asserted that funds use derivatives to reduce the impact of past performance on risk.

The consequences of short-term goals of the investor can be significant for financial markets. Rozmainsky (2015, pp. 107-116) referred to this type of investor behaviour as "investor myopia". Investor myopia – as an extreme form of short-termism – inhibits long run economic development and can prolong crisis. The underlying causes of investor myopia are of institutional and cultural nature and exert influence on the human behaviour with time lags. On the one hand, investor myopia is a reaction to the higher uncertainty

due to ineffective institutions leading to the lack of enforcement or lack of punishment for opportunistic behaviour. These aspects can pose a very serious problem in some post-socialist countries.

In her doctoral dissertation, Elkinawy (2003) explored mutual fund preferences for Latin American equities surrounding financial crises. She found that firm characteristics associated with corporate governance, concerns over possible government expropriation and competitive exposure through trade are among the key factors that determine differences in stock ownership between crisis and non-crisis periods. The correlation among international equity markets has increased in recent years, including the correlation between emerging and developed markets. As a result, it may become more difficult for mutual fund managers to identify undervalued stocks.

Mutual funds are extremely important participants in financial markets. An estimated 76,200 mutual funds worldwide currently control about $30 trillion in assets under management, representing just over 20% of total global assets under management on behalf of investors worldwide. Mutual funds have typically emerged as an outcome of developed financial markets, not a cause of it. Developed markets control over 90% of mutual fund assets and yet many developing countries are seeking to foster a domestic mutual fund sector, because mutual funds provide cost-effective, professionally managed diversification of risk to investors, while supporting economic growth (World Bank Group, 2015, p. 1).

Manconi, Massa, and Yasuda (2012, pp. 491-518) studied the transmission mechanism that explains the contagion of the crisis from the securitized bond market to the corporate bond market. In August 2007, many institutional investors had to liquidate portions of their portfolios because they faced liquidity needs. Mutual funds did not rush to sell then illiquid securitized bonds enmasse, but, instead, sharply reduced their holdings of corporate bonds. Yield spreads increased more for corporate bonds whose pre-crisis bond holders were more heavily exposed to securitized bonds, compared to same-issuer bonds held by unexposed investors. The findings suggested that liquidity-constrained investors with exposure to securitized bonds played a role in propagating the crisis from securitized to corporate bonds.

The influence of financial constraints on corporate policies during the financial crisis 2008 was the subject of research conducted by Campello, Graham,

and Harvey (2010, pp. 470-487). In December 2008, they surveyed 1,050 chief financial officers (CFOs) in 39 countries. They found that during the crisis, financially constrained firms planned to cut more investment value, technology, marketing, and employment than financially unconstrained firms. The authors showed that the constrained firms were forced to burn a sizeable portion of their cash savings during the crisis as well as to cut more deeply into their planned dividend distributions. Among other results, they found that constrained firms accelerated the withdrawal of funds from their outstanding lines of credit because of concerns that their banks might restrict future credit access. Nearly 90% of constrained companies said that their financial constraints restricted their pursuit of attractive projects, while more than half of these firms were forced to cancel valuable investments.

Becchetti *et al.* (2015, pp. 2541-2562) investigated the performance of socially responsible funds (SRFs) and conventional funds (CFs) in different (by geographical area and class size) market segments during the period 1992-2012. They identified several switch points in the lead/lag relationship between the two investment styles over time within different market segments. The key finding of their analysis was that SRFs played an "insurance role", outperforming CFs during the 2007 global financial crisis.

Chan, Kot, and Li (2008, pp. 129-143) researched the portfolio concentration and closed-end fund discounts in Chinese markets. They showed that the discount is strongly and negatively related to stock concentration as measured by the number of stocks in the fund or Herfindahl index. They also revealed that the discount decreases with the dividend payout and turnover, suggesting that investors are willing to pay a higher price (lower discount) for a fund that pays more dividends and has a higher turnover.

Cumming, Imad'Eddine, and Schwienbacher (2012, pp. 261-292) studied the 2001 *Undertakings for Collective Investment in Transferable Securities* (UCITS) Directive of the European Union, which was put in place to mitigate fraud and promote investor confidence throughout Europe. They examined the impact of UCITS on the international distributions of European investment funds over the 2002-2009 period. They showed that the UCITS regulatory structure has significantly facilitated the cross-border fund distribution. Also, UCITS funds, especially UCITS equity funds, had lost some of their advantage in terms of cross-border distribution during the period of the financial crisis.

The impact of institutional trading on stock resiliency during the financial crisis of 2007-2009 was the subject of research that has been carried out by Anand *et al.* (2013, pp. 773-797). They showed that the liquidity-supplying institutions such as market-makers absorb the long-term order imbalances in the market and are, therefore, critical to the recovery patterns after a liquidity shock. These liquidity suppliers withdrew from the risky securities during the crisis and their participation did not recover for an extended period of time. Hence, the illiquidity of specific stocks can be significantly affected by the institutional trading patterns.

3. Theoretical framework

Early development of capital markets in BiH started in the late 1990s, after the end of the war (1992-1995). Since the war, in addition to the rebuilding and recovery efforts, BiH also went through a privatisation process where most business entities transitioned from state to private ownership. For that reason, capital markets in BiH are still at the early stages of development (mostly related to trading in common stocks, *e.g.* in SASE, approximately 90% of total volume).

According to its own characteristics, capital markets in BiH belong to frontier capital markets. These markets are often characterized with a small overall market capitalization, small trading volume and number of trading securities, low liquidity, problems related to irregular and asynchronous trading, *etc*. This can lead to the appearance of expressed price volatilities yet with prices that do not reflect the actual financial situation of the relevant company. Higher level of illiquidity directly involves higher level of investment risks where investors at the same moment experience possibility of greater losses and gains than it might be the case with more liquid and developed markets. Low liquidity of frontier capital markets represents a major obstacle for the development of these markets and causes a lack of significant investments in these markets. This confirms that liquidity is one of the fundamental factors for the development of capital markets (Benić & Franić, 2008, pp. 481-502).

Further development of capital markets in BiH is even more complicated as both governing entities (BiH Federation and Republic of Srpska) have their own regulations, which also impacts negatively on the investor trust and readiness to take risks. There are two stock exchanges in BiH − Sarajevo Stock Exchange (SASE) and Banja Luka Stock Exchange (BLSE). Moreover, there

are two regulatory commissions, the BiH Federation Securities Commission and Republic of Srpska Securities Commission, both regulated by the certain entity laws. The rights for protection of investors in BiH have been regulated through laws concerning capital markets, investment funds, capital market regulators, register of business entities as well as the numerous rulebooks and internal documents built by the regulators and market participants. While the legal framework for investor protection in capital markets exists, the underdevelopment of markets enables different types of market frauds, manipulations, and market abuse to occur. In the field of regulations concerning company business, current regulations have been substantially compatible with the EU legislation. However, there is evidence of certain "deals" being made between management and supervisory board as well as between management and audit firms in terms of "tailored" audit reports used to mislead investors.

BiH business entities (*i.e.* corporate sector) mostly rely on banks to provide funding in the form of loans. On the other hand, illiquid, thin, and monotone market such as BiH capital markets are not competitive in terms of engaging both domestic and international investors. BiH capital markets demonstrate certain level of development which can be observed as an element of systemic risks. Therefore, achieving a higher development level may positively reflect on the reduction of systemic risk.

Abovementioned characteristics of capital markets have the influence on the approach investors take when considering securities market for their investments. Investors have different approaches to frontier and developed capital markets. For example, Hacibedel (2007) identified the following key differences among certain categories of capital market:
■ Difference in the level of information efficiency and the cost of information;
■ Difference with regards to the investor base;
■ Distinction between foreign and local investors;
■ Difference in terms of level of homogeneity of the assets;
■ Difference is stock liquidity, and
■ Difference in the level of integration with the world markets.

When making investment decisions, investors should consider several potential restricting circumstances (Brzaković, 2005, pp. 30-38):
■ Personal tax status;
■ Securities tax status;

- Market liquidity;
- Liquidity of specific securities considered for investment, and
- The investment horizon.

When we talk about making investment decisions, there is a significant difference when making a decision whether to invest in markets that have been around for a very short time (for example, Balkan countries), or the contemporary world stock markets with a long trading history. Balkan stock exchanges are relatively new, although they follow modern rules and practices associated with privatisation processes and trading. This region is marked with the following characteristics of stock exchanges:
- Frustrating process associated with the estimation of company value;
- Insufficient investor education;
- Insufficient information, and
- Susceptibility to speculation.

Coordinated group responsible for creating "Financial Markets Development Strategy for BiH Federation, the period 2012-2021" specified the following reasons for limited development of the financial markets in BIH:
- Low level of shareholder culture and cooperation;
- Insufficient protection for minor shareholders;
- Problems related to taking profits through affiliates;
- Inadequate organization of minor shareholders;
- Insufficient data in institutional investor database;
- Insufficient pension funds;
- Problems associated with the control over participants of the capital market;
- Limited legal knowledge needed to manage illegal activities conducted in capital markets;
- Non-transparent business and management of closed-end investment funds;
- Incomplete process of privatisation of state capital; and
- Non-stimulating tax policy in terms of investments in public sector.

Due to predominantly bank-centric financial system of BiH, the bank loans remain the primary source of financing for business entities. At the same time, the capital markets in BiH have not been highly recognisable as a source of financing to potential issuers, which substantially influenced the number and type of traded securities. In recent years, we have seen more money market activity in BiH through the issue of treasury bills by BiH Federation Government and Republic of Srpska Government as well as government bonds.

This motivated the investors, especially banks and insurance companies, to become more engaged in securities market.
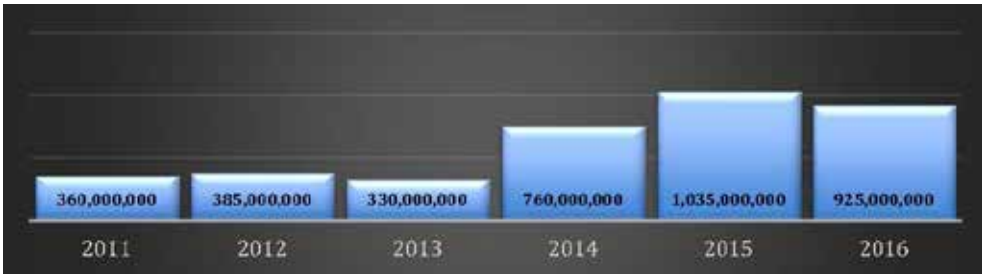
Chart 1. *Total value of public-issued securities in BiH for the period 2011-2016 (in BAM)*

Source: Annual reports of BiH Federation Securities Commission, SASE annual statistics & BLSE annual reports

Chart 1 shows the movement of total annual values, expressed in BAM, of the public-offered securities issue (state, municipality, and corporate) within the capital markets of BiH. The observed period (2011-2016) indicates an increasing trend of total values of securities issue. Specifically, an increasing trend was noted in 2014 and 2015. For value comparison purposes, the value of public securities issuance in 2011 was BAM 359,562,221.86, while in 2015 the value was BAM 1,035,043,210.22.

4. Empirical research methodology, results and discussion

For the empirical part of this paper, the data was collected through secondary sources, while the research into the preferences and investment decision-making in the securities market was performed with an aid of a questionnaire, targeting institutional investors in BiH. The research was conducted in 2012 and 2017 and involved institutional investors. It is important to note that the data from 2017 did not include all banks and insurance companies, as some declined participation due to reluctance to share the information they considered confidential.

As part of the research, the trading statistics of the BiH stock market were also reviewed. The Table 1 shows the trading value across both BiH stock exchanges (SASE and BLSE) for the period 2007-2016. As we can see from the data, the overall market activity was on a rise just prior to the financial crisis (2007), reaching over BAM 2Bn in value, after which we can observe a strong decline over the next a few years (2008-2013), when the value ranged

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from BAM 750M to BAM 620M. The market started recovering in 2014 and made significant jump in both 2014 and 2015, ending year 2016 with the volume of BAM 1.38Bn. Treasury bills and BiH Federation and Republic of Srpska government bonds emerged in that period.

Table 1. *BiH stock exchanges trading value for the period 2007-2016*

Year	Trading values in SASE (in BAM)	Trading values in BLSE (in BAM)	Overall trading values in BiH stock exchanges (in BAM)
2007	1,274,340,116	742,582,291	2,016,922,407
2008	477,079,376	275,090,237	752,169,613
2009	219,085,458	180,493,307	399,578,765
2010	108,554,379	176,195,081	284,749,460
2011	244,787,112	425,456,984	670,244,096
2012	373,577,487	260,931,941	634,509,428
2013	245,230,851	375,856,513	621,087,364
2014	618,943,522	586,607,561	1,205,551,083
2015	1,219,583,580	560,606,603	1,780,190,183
2016	755,211,750	625,158,649	1,380,370,399

Source: SASE & BLSE annual reports

Table 2 represents trading value distribution across different market segments of SASE in 2007 (the highest recorded trading value in the history of this exchange), 2012 (at the time of the initial research), and in 2016 (the last published annual data).

Table 2. *Trading values and market segments in SASE*

Market segment	Participation in trading value (in %)		
	2007	2012	2016
Official companies listing	8.58	36.68	5.13
Funds listing	19.67	12.18	10.17
Free market	71.76	35.58	49.51
Bonds	0.00	15.56	35.19
Total (%)	100.00	100.00	100.00

Source: SASE annual reports

It is interesting that the year 2007 was the record year in terms of market value, even though bonds were not present as available products on the market. By 2012, we can see that bonds trading reached 15.56% of the total SASE trading

for that year. We see further increase of bonds' contribution to the SASE trading value, jumping to 35.19% in 2016. Majority of bonds trading was related to government securities, namely BiH Federation bonds used to for budget funding. However, trading with bonds of private companies was not noticeable.

Table 3. *Trading values and market segments in BLSE*

Market segment	Participation in trading (in %)		
	2007	2012	2016
Stocks	99.89	24.82	8.02
Treasury bills	0	43.04	31.88
Bonds	0.11	32.14	60.10
Total	100.00	100.00	100.00

Source: BLSE annual reports

BLSE data shows a significant decrease in stock trading of both private companies and funds in 2016, with debt securities becoming dominant as both short-term (treasury bills) and long-term (bonds) trading instruments. BLSE market picture was very different in 2007, when debt securities contributed to only 0.11% of the overall trading value.

To explore the influence of the global financial crisis on the investment funds operations, we compared their net asset value (NAV) data from 2012 (the period still influenced by the global crisis) to the data for year 2017 (considered as the after-crisis period). In 2012, BiH had 32 investment funds, while today (2017) there are 33 of them. The number of closed-end investment funds (25) did not change since 2012, while the number of open-end funds increased from 7 to 8. It is important to note that, during this period, fund-related law changes in Republic of Srpska came to effect, influencing the transformation of closed-end funds to open-end investment funds (Law on Amending and Supplementing the Law on Investment Funds of Republic of Srpska, "RS Official Gazette" No. 82/15).

Table 4. *BiH investment funds NAV comparison (2012 versus 2016)*

Fund name	NAV on 30th September, 2012 (in BAM)	NAV on 31st December, 2016 (in BAM)	Change (%)
OIF Iliika Moj novac (OIF Lilium Cash)	1,000,274	2,027,987	102.74
OIF Ilirika Global (OIF Lilium Global)	1,850,000	4,306,765	132.79
OIF Ilirika Moj fond (OIF Lilium Balanced)	2,100,000	5,231,225	149.10
OIF Eurohaus Balanced (likvidiran)	1,254,580	0	-100
OIF Hypo BH Equity (OIF Addiko Equity)	2,079,612	1,592,861	-23.40
OIF Raiffeisen Cash	0	160,280,089	
OIF Raiffeisen Balance	0	2,402,956	
OIF Capital	0	3,726,463	
Bonus d.d. Sarajevo	25,667,685.21	42,090,418	63.98
Herbos fond d.d. Mostar	33,334,956	23,898,164	-28.30
Big Investiciona grupa d.d. Sarajevo	95,696,346	83,037,738	-13.22
Bosfin d.d. Sarajevo	32,363,973	44,390,230	37.15
Eurofond d.d. Sarajevo	27,995,663.00	11,797,532	-57.85
Fortuna fond d.d. Bihać	20,578,766	13,637,902	-33.72
Naprijed fond d.d. Sarajevo	44,071,306	33,415,159	-24.17
Mi Group d.d. Sarajevo	47,629,534.73	34,785,992	-26.96
Prevent Invest d.d. Sarajevo	28,550,359.11	23,488,970	-17.72
Prof Plus d.d. Sarajevo	50,489,766.11	41,425,869	-17.95
Crobih d.d. Mostar	27,444,940	26,303,429	-4.15
BLB Profit a.d. Banja Luka	15,021,040	7,450,116.48	-50.40
Balkan Investment fond a.d. Banja Luka	9,000,000	5,609,665.34	-37.67
Aktiva Invest fond a.d. Banja Luka	14,068,431	10,125,156.52	-28.02
VIB fond	16,988,203	9,979,539.12	-41.25
Unioninvest fond a.d. Bijeljina	1,511,726	1,554,421.52	2.82
Jahorina Konseko Invest a.d. Pale	9,042,797	3,880,112	-57.09
Zepter fond a.d. Banja Luka	124,484,436	117,241,577.9	-5.81
Euroinvestment fond a.d. Banja Luka	25,167,582	12,859,470.36	-48.90
Privrednik Invest a.d. Banja Luka	6,059,002	3,389,140.16	-44.06
Invest nova fond a.d. Bijeljina	30,156,236	22,462,954.44	-25.51
Bors Invest fond a.d. Banja Luka	11,023,858	5,092,457.11	-53.80
Polara Invest fond a.d. Banja Luka	27,920,696	13,920,667.48	-50.14
VB fond a.d. Banja Luka	11,274,781	5,326,054.1	-52.76
Kristal Invest fond a.d. Banja Luka	45,819,555	24,186,217.5	-47.21
OIF Kristal kapital	977,790	546,256.03	-44.13
OIF Mikrofin plus	2,805,606	0	-100
Total	793,429,500	801,463,555.1	1.01

Source: Authors' research

As shown in Table 4, the total NAV of the investment funds in 2012 was BAM 793,429,500, while in 2016 it increased by 1.01%, reaching BAM 801,463,555.1. Comparing with 2012, the net value of closed-end funds decreased in 2016 by 20%, to BAM 160,012,685. At the same time, the participation of open-end investment funds in the overall NAV of funds changed significantly.

In 2012, the funds from Republic of Srpska covered about 44.27% of total NAV, dropping to 30.39% in 2016. Structure of small markets such as BiH can be strongly impacted by a large organisation making their market debut. For example, we can see the in 2012, the contribution of open-ended funds in the overall investment funds total NAV was only 2%, while today (2017) their input reached 23%. This significant change can be attributed to the largest open-ended investment fund on this market, called "Raiffeisen Cash". This fund has the NAV of BAM 160,280,089 or 88% of total NAV of all open-end investment funds and focuses on the establishment of stable, low risk short-term investments, with continuous returns and high liquidity. Their investment structure consists of cash deposits (61%), bonds (36.5%), and treasury bills (2.5%). Furthermore, the analysis of closed-end investment fund portfolios showed that they also often own shares of open-end funds.

Investment management companies show a trend of steady, positive results over the review period. For example, at the end of 2016 there were 10 investments management companies in BiH Federation, with total profit of BAM 10,977,162. At the same time, we can see that the investment funds in BiH Federation suffered a loss of BAM 21,963,417 between 2012 and 2016. In reference to investment funds costs, it is possible to find data that BAM 7,767,549 was paid on the account of management companies. These costs (*i.e.* management fees) relate to 73.64% of total costs of funds. Moreover, compensation for companies is calculated as a percentage of the NAV of funds. This contributed to positive operative results of the management companies, regardless of their financial results. For these reasons and for the purpose of improving the situation, the Law on Amending and Supplementing the Law on Investment Funds of Republic of Srpska ("RS Official Gazette" No. 82/15) enabled the connection between the compensation for management companies and the market value of their securities.

The following presents the results of a survey exploring BiH institutional investor preferences with regards to different securities. These results and the

findings from similar future research might provide some valuable indicators and guidelines to issuers during their decisions-making process when considering whether or not to raise funds via stock market.

The research conducted in 2017 showed that 100% of the surveyed funds prefer investments in common stocks. Most of respondents ranked bonds (with different levels of authority) as their second preference, while one fund expressed their preference for corporate bonds. These results do not significantly differ from the survey conducted in 2012, when investment funds also preferred investing in common stocks.

The 2017 survey also showed that 85% of the surveyed funds prefer long-term, rather than short-term securities. These results show no significant deviation from the 2012 survey either. The analysis of the portfolio structures of funds covered by the 2017 survey confirms these preferences.

The portfolio structures are mostly dominated by long-term instruments (98.79%) as well as proprietary securities (80.99%). Most funds covered in the 2017 survey recommend bonds as their preferred investment recommendation to client organizations who seek to raise capital via stock market. These results differ from the 2012 survey, when the respondents preferred issue of shares and traditional lending options.

In relation to investment goals, the majority of respondents of the 2012 survey selected short-term returns as their most significant goal, followed by less risky and longer-term returns. In the 2017 survey, 85% of the respondents expressed their preferences for low-risk driven investment objectives, while the remaining 15% gave the most value to short-term returns. All respondents saw long-term yields as their second most important investment objective.

The respondents saw the following four things as the most significant changes that happened to capital markets:
■ Withdrawal of foreign investors,
■ Activities in the market related to issuing debt securities of different level of government,
■ Owner securities related exclusively to consolidation of ownership with arranged prices affecting small shareholders, and
■ Large number of off-market financial transactions and alternative options.

5. Concluding remarks and recommendations

The research results showed a positive trend in trading value increase across both stock exchanges in BiH between 2012 and 2016. The research also showed the effect of the global financial crisis on BiH market activities as well as significant changes in market structure in favour of debt securities.

Total NAV of investment funds did not change significantly from 2012 to 2016, but the participation of open-ended funds in the total NAV in 2016 increased when compared to 2012. Taking into account that open-end funds are a dominant form of cooperative venture in the world as well as the fact that closed-end funds showed trust towards open-end funds and that Republic of Srpska started the process of opening closed-end funds by changing some relevant laws, it is expected that the same will happen in BiH Federation. Further, investment management companies still operate positively, despite the losses suffered by the investment funds. Lack of trust in domestic institutional investors, withdrawal of foreign investors, and continuous decline of NAV of closed-end investment funds give us the conclusion that investment funds are not going to be able to stay in the capital markets for a long time, at least not in the form they exist today.

Based on the research findings, it can be concluded that in the post-crisis period we witnessed a steady increase in trading volumes, but the BiH market structure changed significantly toward a strong dominance of debt securities issued by different levels of government. In addition, we saw banks and insurance companies emerging as institutional investors, becoming the main investors in government bonds. Investment funds have not shown any significant activity in the bonds market, although the 2012 survey indicated that they would have found such investments interesting. Based on the results of the research, it can be concluded that the investment funds did not significantly change their investment behaviour today when compared to the crisis period.

It is obvious that corporate bonds are still not present significantly in the securities markets. This might be due to limited understanding of the potential of this debt instrument. As per research findings from 2012, investment funds preferred investing in common stocks, which could have indicated that they might have considered issue of shares as an interesting way to raise funds. However, the 2017 survey indicated that debt instruments were the preferred investment recommendation for the clients within their portfolios that are

considering options to raising funds. On the other hand, market statistics show that companies are still very reluctant to consider listing and securities issue as method for raising funds. Securities Commission procedures, extensive documentation, slow decision making, political interference in selection of Commission members, high fees, costs, listed companies obligations, and lack of promotional presence of the benefits associated with market listings are some of the main reasons why companies show reluctance to list on the market.

Investors face several challenges when considering stock market instruments as an investment option. For example, withdrawal of foreign investors, ownership consolidation affecting small share-holders, large number of off-market financial transactions and alternative options, have significant influence on investors' perceptions when it comes to risk/reward evaluation of BiH capital markets. Risk-averse investment goals are dominant among investment funds operations, indicating a high degree of mistrust in market reliability. As a rule, investors look for low-risk investments that will bring profit over a short term.

Securities markets in BiH is not developing very fast and only basic securities are being traded. Even though there are so many well-known types of financial instruments that could be made available to the issuers and investors in the BiH market, we only see bonds and treasury bills being introduced over the past five years. These debt instruments have been used by different government levels and structures and mainly to support the budgetary plans and expenditure. While we can say with certainty that BiH market participants have been evolving over the past years, the evaluation is quite narrow and slow.

Further research aimed at improving the BiH securities markets as well as improving of the decision-making process among participants, could be focused on improving the overall level of knowledge and information available to those responsible for decision making when it comes to investment or capital raising. This can be achieved by investigating and highlighting the reasons for the weak presence of foreign and domestic investors in BiH securities markets and addressing these issues through effective application of market research findings into practice, namely by stock exchanges and regulatory authorities. The goal is to create stable, reliable and effective market conditions for all participants, attracting investors and potential issuers, and as a result increasing liquidity and diversify product offering across cash, debt, and derivative instruments.

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COMPARATIVE ANALYSIS OF THE MARKET POWER IN THE BANKING SECTORS

KOMPARATIVNA ANALIZA TRŽIŠNE MOĆI BANKARSKOG SEKTORA

Abstract

Banking sector plays a key role in the development of financial and the entire economic system. The economic crisis which had a domino effect primarily hit this sector and then there have been a significant changes in the structure of banking markets. Definining market shares has a significant role in estimating market power i.e. measuring the level of competition and dominant position of certain banking institutions. The aim of this paper is to identify the type of structures and estimate the intensity of competition in the banking sector of the Republic of Serbia and Bosnia and Herzegovina (BiH) and hence, a comparative analysis of market structures between these two countries. Dynamic series of reports of the central banks usually include only two valid measures of concentration - the Herfindahl-Hirschman index and concetration ratio of the leader bank or four leading banks. In order to have a complete picture of the structure of the banking market it is necessary to apply a group of indexes that determine the degree of concentration.. For the index calculating purposes in this paper the absolute and relative values of the most dominant items in the assets of the balance sheet of a bank are used, i.e. the amount of each individual loan and amount of the deposits in liabilities of every bank in 2016. In order to make reliable comparison of the structure of the analyzed sectors, in addition to measures of central banks CR4 and Herfindal-Hirschman index the following measures of concentration were applied: Gini coefficient, entropy coefficient and Lorenz curve. It has been found out that there is more market power in the banking sector in BiH than in Serbia and also the higher level of concentration.

Keywords: market power, banking sector, competition, market concentration

JEL: D40, G21, L1

Sažetak

Bankarski sektor ima klučnu ulogu u razvoju finansijskog i cjelokupnog ekonomskog sistema. Ekonomska kriza koja je imala domino efekat prvenstveno je pogodila ovaj sektor nakon čega je došlo do značajnih promjena struktura bankarskih tržišta. Definisanje tržišnih učešća ima signifikantnu ulogu u cilju procjene tržišne moći odnosno merenja stepena konkurencije i dominantnih položaja određenih bankarskih institucija. Cilj ovog rada je identifikacija tipa strukture i ocjena inteziteta konkurencije u bankarskom sektoru Republike Srbije i Bosne i Hercegovine (BiH) i dalje, komparativna analiza tržišnih struktura između ove dvije zemlje. Dinamičke serije izvještaja centralnih banaka najčešće uključuju samo dvije validne mjere koncentracije – Herfindal-Hiršmanov indeks i tržišno učešće vodeće ili vodećih četiri banaka. Kako bi se imala jasna slika strukture bankarskog tržišta potrebno je primjeniti grupu indeksa koji određuju stepen koncentracije. U ovom radu za izračunavanje vrednosti indeksa korišćene su apsolutne i relativne vrednosti najdominantnijih stavki u aktivi bilansa stanja jedne banke – iznos pojedinačnih plasmana kao i iznos depozita u pasivi bilansa stanja svake banke u 2016. godini. U cilju pouzdane komparacije struktura analiziranog sektora, pored mjera centralnih banaka CR4 i Herfindal-Hiršmanov indeks primijenjene su i sljedeće mere koncentracije: džini koeficijent, koeficijent entropije i Lorencova kriva. Autori su analizom došli do zaključka da postoji veća tržišna moć na bankarskom sektoru BiH nego u Srbiji kao i viši stepen koncentracije.

Ključne riječi: tržišna moć, bankarski sektor, konkurencija, tržišna koncentracija

JEL: D40, G21, L1

1. Introduction

Growing presence of foreign banks and high levels of bank concentration in developing countries have been the consequence of a number of factors, some of them interrelated. A facet of the larger process of financial liberalization and international integration, foreign entry was also encouraged by local banking authorities following financial crises, as they sought to minimize the costs of recapitalizing domestic financial systems (Peria & Mody, 2004, p. 513).

The questions of efficiency measuring and enhancing in the banking industry are extremely important both for bank shareholders and managers. Besides,

considering the role of banks in the national economy, efficiency-related issues are essential at the government level (Titko *et al.*, 2013, p. 42). Countries that pass through the transition period are characterized by common features in the financial sector: instability of the industrial structure, lack of firm rules, narrow assortment of only the key services segment, too high a price of capital, lack of clear strategic goals (Tipurić *et al.*, 2002, p. 470).

The governments of the SEE countries, with the collaboration and assistance of international financial institutions, have taken concrete and far-reaching measures to reform their financial institutions and markets. This process included the restructuring, rehabilitation and privatisation of state-owned banks, the liquidation of insolvent institutions and an improvement in the administrative efficiency and capability of the banking sector (Athanasoglou *et al.*, 2006, p. 7).

The first visible signs of the global crisis in the region were reflected in the decline in liquidity in the financial sector and in the difficult reform of financial institutions. The slowdown in economic activity was also influenced by the withdrawal of household deposits with banks, slowing down the credit activity of banks towards the economy and the population, increasing foreign financing costs, strengthening the pressure on the exchange rate and increasing credit risk (Bošnjak, 2008, p. 14).

In Serbia, a great number of domestic banks were taken over from the large international banks. At the largest wave of consolidation of banks in foreign ownership has reached record at the end of 2006 (22 banks), while the number of banks in domestic ownership fell from 38 banks to 15 banks in just three years. The entry of foreign banks made banking marketplace much more stable and reliable (Hanić *et al.*, 2015, p. 59).

In BiH, the confidence in the banking system has been restored and the banking system itself has been significantly developed and strengthened, measured by the growth in deposits and the amount of capital. These processes coincided with the process of concentration of the banking system due to numerous mergers and acquisitions of banks, which further resulted in reducing the number of banks in BiH (Efendić, 2011, p. 3) .

From all stipulated above, it can be concluded that both countries went through the same process of consolidation in the last decade: foreign banks

entered the market and number of banks reduced. The number of banks in the market together with the dispersion of individual shares determine the structure of competition in banking sector which is measured by the level of concentration. The aim of the paper is to give clear picture of the market structure using the analysis of the concentration and measuring the level of concentration of market power. The importance of the market structure can be explained by its impact on the users of banking services and the economic system as a whole.

2. Market power

The number of market participants is one of the most important factors in the market structure which affects the functioning of the market so that the number of market participants is inversely proportional to their market power. In other words, the smaller market participants, the greater their market share and thus their market power, and *vice versa*, as there are more market participants their share of the market is smaller and also their market power.

The possibility of entry of new competitors in the market is usually in inverse proportion to the market power of market participants. The degree of openness of a market depends on the intensity of legal and economic barriers to entry of potential competitors in a given market. In the case where the product is homogeneous number of market participants is the only relevant factor in market structure. The greater interchangeability of products to other products is, as a rule, the more competition there is, reducing the market power of individual market participants.

The positive relationship between market power and inefficiency is known as the "quiet life" effect. In banking sector, the only study that tests this hypothesis is Berger and Hannan (1998) for U.S. banks, which considers the relationship between cost efficiency levels and the market power of banking institutions (Maudos & Guevara, 2007, p. 3).

Market power is often associated with lower probability of banking failure. Such a negative relationship is usually attributed to various reasons. Firstly, higher lending rates result in lower investment levels and thus higher expected return of the marginal project, which implies lower probability of bankruptcy. Secondly, the higher the future expected profits of a bank, the larger is the opportunity cost of going bankrupt, which reduces the incentive to over invest

in risky assets. Finally, on the deposit side, competition will tend to increase deposit rates pushing the margin further down and failure probabilities up (Caminal & Matutes, 2002, p. 1342).

There are few reasons why market power cannot be the same for the all articipants and that is also a reason for analysis of market power in banking sector. First of all, in the case of perfect competition in the market, financial institutions would have minimum profits, which would prevent the accumulation of capital that is necessary to protect against potential losses. Secondly, they are "too big to fail", which means that they take on greater risk in business because they are sure that in the case of big crisis governments will be the first to give solutions and help them. Thirdly, increasing the level of deposit rates in the banking sector in order to attract a greater number of clients would impact the increase in lending rates.

3. Research methodology

Due to the fact that the concepts of the market share and the market power are often used as synonyms in the economic literature, the measurement of the market power is often based on measuring the concentration level of the market, wherein the main indicator of the market power is of the overall size of the bank market share. As mentioned before, the central banks usually include only two valid measures of concentration − the Herfindahl-Hirschman index and concetration ratio of the leader bank or four leading banks so these measures are also included in this paper. It is important to underline that previous empirical research has proved that application of one market concentration indicator may lead to relatively contradictory conclusions on banking market concentration level since each indicator applied in this paper has both its advantages and disadvantages. Aiming at obtaining the clearest possible picture of banking sector concentration, a whole range of indicators has to be applied. Applied indicators have been used against granted loans and collected deposits sums of each individual bank, as two main items in the bank's balance sheets.

3.1. Ratio concentration (CRn)

Share index of *n* enterprises or concentration ratio is an indicator that is calculated as the sum of the market shares *n* largest companies in the market and as such is very simple for understanding (Waldman & Jensen, 2001, p. 95).

It can be represented using the following formula:

$$CRn = \sum_{i=1}^{n} Xi$$

Wherein Xi is individually market share of *i* company, that is given by this formula:

$$Xi = (qi/Q)100$$

where qi is supply of the i company, and Q is the supply of the whole market. In addition to offering a basis for determining the market share it can be used in other economic categories such as number of employees, total income *etc*. In practice, n is a number ranging between 4 and 10. Which number of companies will be included in the calculation of this ratio is usually decided by the government agencies that are monitoring the level of the of concentration of the supply in that country, but only in the case where that coefficient is used as official indicator.

3.2. Herfindahl-Hirschman index

Herfindahl-Hirschman index is a measure of the company size compared to the industry (industry group, region of production or services) to which the company belongs, and as such is an important indicator of the degree of competition between bidders - companies from observed industries. The importance of this index is reflected in the fact that he recognizes the market participation of all companies, especially react to the appearance of those with a high participation (Hanić, Kočović & Jovović, 2012, p. 157). Because of the way it is constructed, Herfindahl index has the analytical advantage in comparison with the concentration ratio, which is reflected in the fact that this index gives greater weight larger companies. It can be represented in the following equation (Šaj, 2005, p. 172):

$$HHI = \sum_{i=1}^{N} s_i^2$$

where *S* represent a market share of *i* company and *N* is the number of all banks in the market. Thus, for example, on the market where there are two companies with a share of 50%, Herfindahl index is 1/2: HHI = 0.502 + 0.502 = 1/2.

Herfindahl index is correlated with the number of banks in the industry because of its lower limit values for N company is 1/N. Market that consists of three banks can have a lower index of Herfindahl than market with 20 banks, if their market shares equal to each other. However, with increasing inequalities market shares of 20 companies, the value Herfindalovog index may be higher than in the case of uniformly distributed shares of only three banks (for example, if the greatest bank takes 81% of the market, and the remaining nineteen companies by 1% Herfindahl index has a value of 0.658). The higher value of the index signals Herfindalovog less competitive industry.

3.3. Gini coefficient

Gini coefficient as a measure of concentration was built on the logic of the Lorenz curve. Gini coefficient can be determined through the following equation:

$$G = \frac{2}{\mu n^2} \sum_{i=1}^{n} (r_i - \frac{n+1}{2}) q_i$$

Where n stands for a number of firms, μ is an average firm's sale on the given market, r_i is a rank an i firm is holding (firms are ranked by sale scale or marker share from the smallest to the biggest) and q_i is sale scale of an i firm.

Main disadvantage of this indicator is the fact that it neglects number of firms and is exclusively focused on inequality in offer among them. Industrial branch with two firms of identical size has the same Gini coefficient value as industry with 100 firms of same size, even though competition structure of these two industries is completely different (Lipczynski & Wilson, 2001, p. 110). It is particularly difficult to establish coefficient for a market with one firm only. Result will be 0 for this market if the above written equation is strictly applied, which implies that offer is equally distributed among firms (one in this case).

3.4. Entropy coefficient

Entropy coefficient is a sum of market shares of individual firms and natural logarithms of their reciprocal values as in the following formula:

$$EI = \sum_{i=1}^{n} Xi \ln \frac{1}{Xi}$$

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Entropy coefficient reflects a level of stability in a branch. Market stability is assessed from a seller's viewpoint. Market is stable when buyers have difficulty in or cannot change a seller at all. This is a monopoly situation when one firms sets up the overall branch offer. Market is unstable when buyers can relatively easy change a seller which is a case when there is a large number of offer making participants on the market. Entropy coefficient value, unlike other analysed concentration indicators, is inverse to the concentration level (smaller entropy coefficient implies a higher level of concentration on the market and *vice versa*).

This indicator has been taken from theory of information where it was used to assess certainty level of a decision. In addition to this, it can be used to measure uncertainty in different market structures. When there is one firm only on the market, uncertainty for a monopolist to keep a buyer is a minimal, since the buyer has neither options to choose a different sellers, nor can he/she find a substitute to meet his/her needs.

3.5. *Lorenz curve*

The level of concentration can be established by Lorenz curve as well, which is an important instrument used in statistical analysis. It was named after American economist Lorenz who designed this curve first. It was initially applied only when studying equality of distribution of financial profits among members of a state.

Application of Lorenz curve in reviewing levels of offers' concentration in a market, aims at illustrating equality in distribution of market shares among firms.
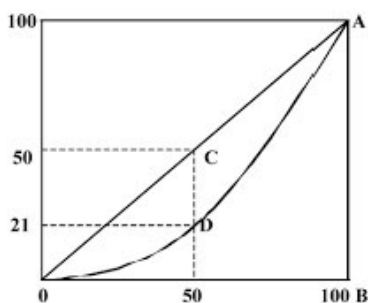
Graph 1. *Lorenz curve*

Source: Lipczynski & Wilson, 2001, p. 109

X axis shows firms from the smallest to the biggest (in percentages), and *Y* axis shows percentage of offer at firm's disposal in interval from 0 to 100% offer. Line *0A* at 45 degrees is seen as a total equality line, *i.e.* balanced distribution of offers among producers. If firms are along this line, then all firms are of same size. Therefore, for example point *C* shows that 50% of firms looks after 50% production and offer on the given market. It then implies that remaining 50% firms looks after 50% production and offer on the same market (Lipczynski & Wilson, 2001, p. 110). To conclude, competition on this market is made of firms of identical size. Distribution of market share is balanced among individual firms and this is somewhere halfway between a total equality and a total inequality of market shares. Main disadvantage of Lorenz curve is the fact that it is primarily focused on unbalanced distribution of market shares among individual firms. Number of firms in establishing concentration level does not play an important role hence one firm with 100% market share and ten firms with 10% market share each will be at the same 45 degrees curve.

4. Results and discussion

The table below shows market shares for loans and deposits and concentration ratio of the biggest four banks in BiH. Considering both, the first three banks have the same shares. In the case of loans, Sparkasse bank has bigger market share than Sberbank, but on contrary Sberbank has more deposits. Both ratios are about 60%. The biggest for banks for loans have 61.15% of the whole market. In the case of deposits, the share for the same number of banks is even higher – 64.08%. It is also imortant that the biggest bank – Unicredit has about one quarter of tho whole market.

Table 1. *CR4 banks for loans and deposits, BiH*

No	Bank	Loans	Bank	Deposits
1	UniCredit bank	25.23%	UniCredit bank	25.45%
2	Raiffeisen bank	18.94%	Raiffeisen bank	22.71%
3	Intesa Sanpaolo bank	9.33%	Intesa Sanpaolo bank	10.27%
4	Sparkasse bank	7.65%	Sberbank	5.65%
CR4		61.15%	CR4	64.08%

Source: Authors regarding Central Bank data

The following table summarize shares of the biggest four banks in Serbia. Banca Intesa is a leader, but in comparison to previous position of Unicredit in BiH, its share is less. Concentration ratio of the biggest four banks is lower in serbia than in BiH and these banks "own" almost half of the market. We need to say that the total number of the banks in BiH bank market is 16 and same type of number for Serbia is 30.

Table 2. *CR4 banks for loans and deposits, Serbia*

No	Bank	Loans	Bank	Deposits
1	Banca Intesa	15.55%	Banca Intesa	17.40%
2	Unicredit bank	11.52%	Komercijalna banka	14.64%
3	Société Générale	9.09%	Raiffeisen bank	8.70%
4	Komercijalna banka	8.61%	Unicredit bank	8.09%
CR4		44.77%	CR4	48.83%

Source: Authors regarding Central Bank data

The competent authorities of the United States have set the following standards or limit values of Herfindahl-Hirschman index (Hanić *et al.*, 2015, p. 62):
- If the post integration HHI is below 100 indicates a high level of competition in the market.
- If the post integration HHI is between 100 and 1,000, the market is Non-concentrated and will not start up the anti-monopoly measures.
- If the post integration HHI between 1,000 and 1,800, the market is moderately concentrated.
- If the post integration HHI is above 1,800, the market is highly concentrated.
- If the integratin would increase HHI by less than 50 points, it probably would not be disputed. But if integration would increase the HHI by more than 50 points it would cause a reaction of the competent authorities and initiation of anti-monopoly measures.

Table 3. *Herfindahl-Hirschman index for BiH and Serbia*

Country/L&D	Loans	Deposits
BiH	1,332	1,446
Serbia	758	856

Source: Authors regarding Central Banks data

Herfindahl-Hirschman index values are close within country for both loans and deposits. This index is 1,332 for loans and 1,446 for deposits in BiH in 2016, and it can be concluded that bank market in this country is moderately concentrated. Not only that there are 16 banks in this market but also 14 banks have share which is under 10% of the market and 11 of them under 6%. Herfindahl-Hirschman index values for Serbia in the same year indicate that bank market is non-concentrated so it will not be necessary to start any anti-monopoly measures. The lower of the index also indicates more banks on the market, but 25 of them have share which is less than 6% and even 16 of them have share which is less than only 1%.

Table 4. *Gini coefficient*

Country/L&D	Loans	Deposits
BiH	0.51	0.52
Serbia	0.57	0.60

Source: Authors regarding Central Banks data

Gini coefficient says a lot about the equalities between the banks with great share and banks with low share. In BiH values of 0.51 and 0.52 indicate that equality between these two types of banks. The main disatvantage is that it takes only shares and not the total number of the banks in the market. In Serbia values are little higher 0.57 for loans and 0.60 for deposits. These values says that there is inequality and the banks with the greater share are proportionally bigger than banks that have lower share.

Table 5. *Entropy coefficient*

Country/L&D	Loans	Deposits
BiH	1.0054	0.9341
Serbia	1.2258	1.2015

Source: Authors regarding Central Banks data

The entropy coefficient shows the level of stability in bank market and thus smaller entropy coefficient implies a higher level of concentration on

the market. As long as both values – for loans and deposits in Serbia are greater than those for BiH it can be concluded that there exist a higher level of concentration in BiH as it was the case in analyzing Herfindahl-Hirschman index. Both of these measures suggest the same conclusion.
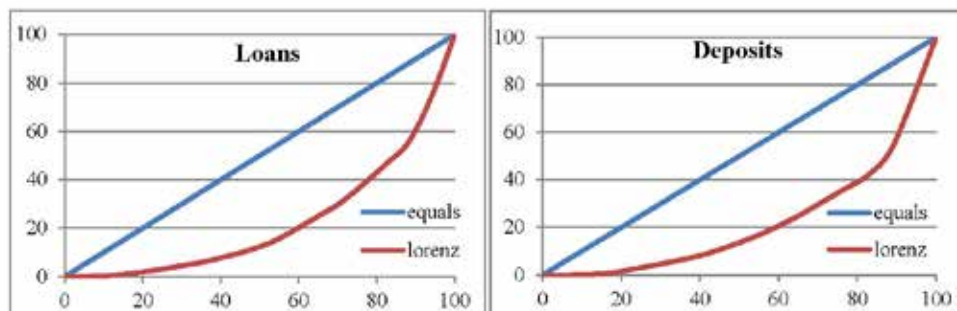
Graph 2. *Lorenz curve, BiH*

Source: Authors regarding Central Banks data

The Figure 2 shows Lorenz curve and provides the best insight in the real structure in the bank market. If analyzed from the right it can be seen that 40% of the banks with the highest share own 80% of the bank market. So other 60% of the banks share only 20% of the market. Both figures indicatea very similar picture about the bank market structure in BiH.
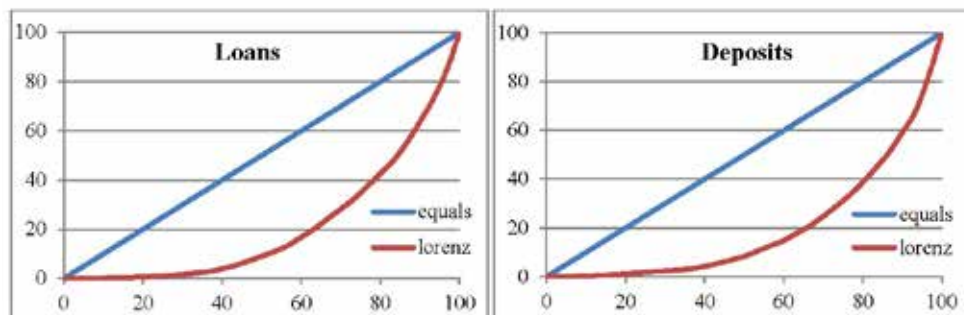
Graph 3. *Lorenz curve – loans, Serbia*

Source: Authors regarding Central Banks data

In Serbia, bank market structure is different from the one in BiH. Here 20% of the banks with the biggest share owns 60% of the whole market, which means that only 6 banks have more than a half of market and the rest 24 have 40%. As it can be seen in the Figure 3, 60% of banks with lower share in the market own less than one fifth of the market. Also, 40% banks with lower

share own less than a 5% of the market. Lorenz curve is the best solution to explain values of the Herfindahl-Hirschman index.

5. Conclusion

These countries have been chosen because both markets had changes in banking regulation, went through the same global crisis which affected bank market, both are in the process of the economic transitions, and received foreign banks. Comparative analysis between BiH and Serbia was aimed to defining market power in these two countries and identifying differencies, if any. It has been found out that bank market in BiH is much more concentrated than the bank market in Serbia.

Although both countries went through the process of consolidation from the values of group of the market concentration indicators used in this paper, it can be concludes that the bank market in BiH is more concentrated than the bank market in Serbia. Furthermore, bigger banks in BiH have greater market power than banks in Serbia. To point out, the biggest four banks in BiH own about 60% of the market and in the case of Serbia that same number owns less then one half of the whole market. All measures of the level of market concentration gave us the same results and picture about banking structure in these countries. All of the measures have some restrictions. Thus, in order to have a more clear picture of the market power and structure in this sector it is important to use a group of measures and not only one measure.

We believe that process of consolidation is still not over so it can be recommended that structures should follow in these sectors because there is a great chance of changes which will furthermore affect market power in the banking sector.

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THE RESTRUCTURING OF THE COMPANY AS A DETERMINANT OF BUSINESS SUCCESS IN BOSNIA AND HERZEGOVINA

RESTRUKTURIRANJE PREDUZEĆA KAO DETERMINANTA POSLOVNE USPJEŠNOSTI U BOSNI I HERCEGOVINI

Abstract

Modern business conditions characterized by frequent changes require companies to constantly adapt and timely response to the resulting circumstances. Inadequate business performance generally requires changes through which the company attempts to stop and reverse adverse and inadequate trends in its business. This paper aims to determine whether and to what extent the restructuring affects the business success of companies in BiH. Also, the aim of this paper is to determine the impact of the restructuring process on the efficiency and effectiveness of the company's business. The paper presents the problems that arise in the process of restructuring as well as from global flows, forms and models of business restructuring of the company. Unlike most developed countries and even developing countries, the restructuring processes in BiH are rather slow, but they represent the inevitability of most domestic companies, especially those that have a prospect for a successful business. The paper is based on the results of the research, the effects of restructuring of companies in the world and in BiH, as well as the comparative analysis of available literature. Special attention is paid to the effects of corporate restructuring in domestic and foreign ownership. Research findings show that through corporate restructuring strategies, they can lead to corporate healing and increased efficiency and effectiveness of the business. Also, it was found that the effects of restructuring of a company in foreign ownership are better than the effects of the restructuring of a company in domestic ownership.

Keywords: restructuring, competitiveness, determinants of the company development, organizational changes

JEL: G01, G32, G34

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Sažetak

Savremeni uvjeti poslovanja koje karakteriziraju česte promjene zahtijevaju od preduzeća konstantno prilagođavanje i pravovremeno reagiranje na nastale okolnosti. Nezadovoljavajuće performanse u poslovanju u pravilu zahtijevaju promjene putem kojih preduzeće pokušava zaustaviti i preokrenuti nepovoljne i neadekvatne trendove u svom poslovanju. Rad ima za cilj utvrditi da li i u kojoj mjeri restrukturiranje utječe na poslovnu uspješnost preduzeća u BiH. Također, cilj rada je utvrditi utjecaj procesa restrukturiranja na efikasnost i efektivnost poslovanja preduzeća. U radu su predstavljeni problemi koji se javljaju u procesu restrukturiranja kao i globalni tokovi, oblici i modeli poslovnog restrukturiranja preduzeća. Za razliku od većine razvijenih zemalja, pa i zemalja u razvoju, u BiH su procesi restrukturiranja dosta usporeni, ali predstavljaju neminovnost većine domaćih preduzeća, posebno onih koja imaju izgled za uspješno poslovanje. Rad je zasnovan na rezultatima istraživanja efekata restrukturiranja preduzeća u svijetu i BiH, kao i na komparativnoj analizi dostupne naučne literature. Posebna pažnja posvećena je efektima restrukturiranja preduzeća u domaćem i stranom vlasništvu. Rezultati istraživanja pokazuju da se putem ofanzivnih strategija restrukturiranja može doći do ozdravljenja preduzeća, povećanja efikasnosti i efektivnosti poslovanja. Također, utvrđeno je da su efekti restrukturiranja preduzeća u stranom vlasništvu bolji od efekata restrukturiranja preduzeća u domaćem vlasništvu.

Ključne riječi: restrukturiranje, konkurentnost, determinante razvoja preduzeće, ozdravljenje preduzeće, organizacione promjene

JEL: G01, G32, G34

1. Introduction

Modern business conditions require a great degree of adaptation, flexibility and speed of response to businesses in emerging circumstances. Enterprise Restructuring involves a series of changes in the structure, strategy and position in order to increase its efficiency and effectiveness to a higher level. It is a process based on the analysis of the existing business situation, which is focused on seeking strategies for improving positions, through eliminating weaknesses and crises, creating and maintaining competitive advantages, changing organizational structure, more effective management and more efficient functioning of all structures and systems in the enterprise (Erić & Stošić, 2013, p. 11). Fast and efficiently conducted reconstruction imposes itself as a key factor of survival of large number of enterprises in all branches of economy. The high rate of change that happens every day imposes the need

and challenges the management of the company to quickly and effectively make responsible and unpopular decisions. If the management of the company is unable to respond in a timely manner and make adequate decisions, it is very quickly faced with the problem of liquidity, solvency, and ultimately the initiation of bankruptcy proceedings and liquidation. Effectively implemented restructuring measures can represent a way out of the crisis, that is, the way to the growth and development of the company in the new circumstances. In order for domestic companies to do business in global economic market, they have to embrace global game rules that are characteristic for world companies' successful business practices, in other words they have to elevate levels of effectiveness and efficiency which are the metric for business success. In order to do that, they have to be fundamentally reconstructed (ownership, organizational, managerial, market and financial reconstruction). The aim of this paper is to highlight the significance of the restructuring process, as well as the problems and obstacles that occur in the implementation of structural changes that come with restructuring. This is a very complex issue for Bosnia and Herzegovina as a very present issue, given the large number of companies that need to carry out restructuring processes. The paper is based on a comparative analysis of the available scientific literature, as well as on the results of research on the implementation of the restructuring program through the privatization processes of the companies. Apart from the introduction and the conclusion, the work consists of three parts, and the reasons and the need for restructuring of the enterprise, and then the effects of restructuring of enterprises in Central and Eastern Europe are presented. The last part presents the restructuring of enterprises in Bosnia and Herzegovina.

2. Cause and need for reconstructing companies

Restructuring of companies in the last decade is especially important due to the constant changes that surround it. In practice, there are various forms of restructuring, which are caused by different factors and goals of the company. When it comes to the causes of restructuring, it is most commonly mentioned were: overcoming bad financial performance in the business, implementing a new company development strategy and increasing the value of the company's shares (Erić & Stošić, 2013, p. 42). Also, in some cases, restructuring can be initiated: when a company has difficulty in paying due obligations, sales stagnate or decreases, and product stocks are accumulating, changes in technological development require a change in production processes, productivity decreases, stock value decreases, and the like. According to a 2003 survey conducted in

Japan (ABeam Research Japan Corporate Restructuring – Shrink to Grow, 2004, p. 8), 55% of surveyed companies underlined reasons for reconstructing were strengthening of core business, 43% increase of stock value, 40% realization of faster growth, and 32% correction of financial position. Based on the above, the main motive for restructuring the company is the company's endeavor to stop and, as soon as possible, reverse the realization of bad performance in the business. In the foreground, the company's efforts are focused on solving operational problems, with partial changes in the way they do business. However, if partial changes do not yield the desired results, the company is forced to undertake structural changes that fundamentally change the way businesses operate. As a direct cause of company restructuring, there are a number of different factors that, depending on the criteria, can be grouped in several ways (Erić & Stošić, 2013, p. 43):

■ Unfavorable business results (loss of profit and operating losses, high operating costs, insolvency, *etc.*);
■ Inadequate market orientation and loss of competitiveness (loss of key customers, increased competition, overproduction, poor customer service, *etc.*;
■ Inefficient management system and poor human resources structure;
■ Inefficient business organization;
■ Irrationalities in production activity and technology;
■ Financial and structural phenomena related to the change in the ownership structure, then the increase in value through the sale of a part of the company or the separation of shares;
■ Undefined ownership structure.

As far as the developing countries are concerned, therefore, Bosnia and Herzegovina, as one of the causes for the restructuring process is privatization. In order for domestic companies to successfully operate on the global market, they must accept new rules of the game that represent the business practice of global corporations. Domestic enterprises, in order to raise the level of efficiency and effectiveness, must be fundamentally restructured (ownership, organizational, managerial, market and financial restructuring). Companies in Bosnia and Herzegovina have largely started their business according to market criteria. For them, restructuring is not only a necessary procedure, but something they cannot survive without, in a market economy concentrated on ownership risk and a competitive battle in the global market. They have to be fundamentally reformed, which means they have to adopt ownership, organizational and market wise as companies from developed countries did.

Ownership transformation. Dominant private ownership is the main driver of a market economy and offers greater efficiency than other systems for the following reasons: it offers more efficient management, the capital market affects private companies much stronger than the publicly-owned enterprise, private companies are much more likely to leave the market, are more often the subject of bankruptcy, liquidation and hostile takeover, the influence of holders of public functions is much lower than for publicly-owned enterprises, private companies are subject to more robust supervision of shareholders and members of supervisory boards, on the basis of which they make more efficient use of capital and other resources.

Organizational transition. If companies in Bosnia and Herzegovina want to participate in a global market match and thus increase the quality of the domestic economy, it is necessary, in addition to ownership transformation, to perform organizational restructuring. They must base their organization on knowledge. The development of information and communication technologies will enable everyone much more knowledge in the process of making business decisions. The organizational structure with many hierarchical levels, among many different functions in the enterprise, is not able to maintain flexibility and efficiency, therefore the future is in a shallow organization, with few staff at the top and a number of independent interdisciplinary teams formed on the principle of project assignments.

Management transition. This transition of companies will have greater autonomy in decision-making, but will therefore be responsible for the consequences of wrong decisions, loss of profit, and even liquidation. Owners of the company will not tolerate bad managers, and the evaluation of the efficiency of their work will be given by the market share price as well as the amount of the dividend paid. The ultimate goal of this restructuring is the introduction of professional management, which companies in developed countries have. Professional management system is based on: separation of management and ownership, improvement and professionalization of managers, introduction of standards and norms of performance of management and signing professional contracts. Based on the above, efficient management is a prerequisite for success in a market game; therefore, in addition to ownership and other transition, it is necessary to introduce a management system in a timely manner.

Market transition. Market restructuring of an enterprise represents the company's orientation to the market economy system, which means confronting

demanding, organized and sophisticated consumers and aggressive competition. Domestic companies, in order to succeed in the market game, must audit their production programs and target markets, as well as the strategy of market entry. Market restructuring will have to answer very difficult questions, such as: what kind of business we want to do, where we are now, where do we want to get, how do we get there, how much human and material resources we need, which are our target markets, how to position ourselves in relation to the competition, what products and services to offer to the market, under what conditions, how to distribute and promote them. These are essential issues for every company in the market economy, and their success on the market depends on the success of their responses and actions taken (Đogić & Brdarević, 2015, p. 43).

When designing and implementing a restructuring process, as a rule, there are conflicts of interest among several key groups, such as: creditors, management, owners, employees, customers and the general public. The mentioned interest groups often have very contradictory requirements with their demands and expectations and under such conditions it is very difficult to form restructuring measures, and their implementation seems impossible. In such cases it is crucial to engage an independent party that has knowledge and experience in determining the situation in the enterprise and defining the necessary restructuring measures. Also, it is important that a third (independent) party takes on responsibility for the implementation of defined programs and measures, that is, the responsibility for achieving the defined effects. Also, it is important to emphasize that a completely inaccurate step in every restructuring process is a ruthless reduction in the number of employees and salaries of employees, without previously analyzing the impact of such moves on the company's operations. In every company, employees are a key factor of success and they should be treated as such. Without satisfied and motivated workers, no company can survive in the long run, regardless of all the plans, goals, strategies that management is putting in front of them.

3. Effects of restructuring of enterprises in Central and Eastern Europe

In the last twenty-five years, in the countries of Central and Eastern Europe, thousands of companies have been privatized and restructured. Apart from ownership transformation, privatization in these countries had positive effects on increasing the performance of the companies (Kontić, 2014, p. 160). The analysis covered relevant research carried out in the countries of Central and Eastern Europe, and the main goals and results were presented in a

chronological order. Based on a study by Claessens and associates (Claessens *et al.*, 1997, p. 3), factors that influence the improvement of the performance of privatized companies in the Czech Republic in the period 1992-1995 have been analyzed. Based on the analysis, it was concluded that the concentration of ownership influenced the higher profitability and market value of the companies. Research by Pohl and associates (1997, p. 3) was conducted on 6,300 companies in Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia, and Slovenia. The following benchmarks were used to evaluate the effects of transformation processes: profitability, labor productivity growth, overall productivity and export growth. A comparison of the performance of state-owned enterprises with privatized companies operating under the same conditions was performed; the impact of privatization on the restructuring of the enterprise was analyzed. The results of the research have shown that concentrated ownership stimulates restructuring processes. Also, it was concluded that the privatization method does not affect the subsequent restructuring of the company.

Research from Smith and associates (1997, p. 177) carried out in Slovenia from 1989 to 1992, was based on the study of the effects of different forms of ownership on the company's performance. The results showed that external ownership positively influences the performance of the companies. The aim of the research of Claessens and Djankov (Claessens & Djankov 1998, p. 19) was to compare the performances of privatized and state-owned enterprises, and it was done on a sample of 6,300 companies from Bulgaria, the Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia. The survey showed that there were changes in the finances, employment and efficiency of the companies. Transformation processes have influenced the increase of productivity, but also the reduction of employees. In his research, Bornstei (Bornstei, 2000, p. 14) conducted a comparative analysis of companies in the Czech Republic, Hungary and Poland. The results indicated that foreign investors are much more efficient in implementing the restructuring process than domestic ones. Privatization and restructuring from external owners had a positive effect on the performance of the companies, one of the conclusions of Djankov and Murell (2002, p. 21). Several researches on the effects of restructuring have been carried out in Serbia. According to the results of the Republic Institute for Development (2006), it was determined that the restructuring of the company in the post-privatization period improved performance. Also, it has been established that the method of sale affected the performance of the companies. Examination of the process of privatization and restructuring in 48 large companies in Serbia showed that the

restructuring process in 79.17% of enterprises was successful (Kondić, 2014, p. 161). The results of the Kondić research (2007) showed that in most of the privatized companies, there were a changes in top management and simplified the management structure for more efficient management. Summing up the results of previous research, it can be concluded that the most important privatization effects on the increase in the performance of enterprises in the transition economy are the following: concentrated external ownership contributes to better performance of the companies, restructuring affects the performance improvement in the post-privatization period, in large numbers of the analyzed companies leads to a change in management, in all privatized companies there was a decrease in the number of employees (Kondić, 2014, p. 162).

4. Restructuring of enterprises in Bosnia and Herzegovina

The globalization of the economic space has largely changed the rules of business in transition countries, even in BiH. In order for domestic companies to do business successfully, they must be qualified for such a challenge, must adopt the global rules of the game that are immanent to the successful business practice of global global corporations (Đogić & Brdarević 2015, p. 40). In other words, domestic companies need to raise the level of effectiveness and efficiency that measures business success. In order to achieve this, they must be fundamentally restructured (ownership, organizational, managerial, market and financial restructuring). Companies' restructuring is the way to achieve the goals of one company from the aspect of its internal and external stakeholders in the most efficient and most effective way. Enterprises in Bosnia and Herzegovina have largely entered into business according to market criteria. For them, restructuring is not only a necessary grip, but something that they cannot survive without in a market economy based on ownership risk and a tough competition in the global market. Companies in Bosnia and Herzegovina that have adequately implemented transformational processes through restructuring and privatization have achieved an increase in business performance through: production growth - business, investment growth, employment growth and profitability, increasing export orientation, improving the technical and technological level of production - businesses. Among the companies that successfully conducted restructuring through the privatization process, we highlight: "TMD Ai" Gradačac privatized by "Cimos Koper", "FEAL" Široki Brijeg privatized by "Jotza Bogdan", "Milkos" Sarajevo privatized by "Teloptica (Avaks)" Sarajevo, "Željezara" Zenica privatized by "ArcelorMittal", "Natron-Hayat" Maglaj, which is

the result of a joint venture of "Kastamone Integre" from Turkey with 70% ownership and "Natron-Maglaj" 30% of ownership, "Abanos" Bužim bought from the Italian company "Top Sedia", "Lukavac cement factory" privatized by "Alas International" Austria, processing and milk supply Tuzla privatized from "Ljubljanske mlekarne" with 60% of ownership, "Unico filter" Tešanj privatized from "Man-Hummel" Germany, "Cement factory" Kakanj privatized by "Heidelberg Zement", "BPI" Hadžići privatized by "Coca Cola Beverage Holding" Netherlands, "Pobjeda" Goražde privatized by "Bekto" Austria, "Sarajevski kiseljak" privatized by "Jamnica" dd Zagreb, "Soda Sisecam" Lukavac, joint venture of the firm "Sisecam Soda" Sanayii 80% and "Soda" Lukavac Factory 20%, Cable factory "Tomislavgrad" privatized from "Kapisa" Slovenija, "Bihać Mljekara" privatized from "Meggle" Germany, "Global Ispat Coke Industry" (GIKIL) privatized as a joint venture between "KHK" Lukavac and "Global Infrastructure Holdings" Ltd (GIKIL) from Great Britain (Domazet *et al.*, 2008, p. 79).

Determinants that influenced the efficiency of transformation processes are:
1. The location determinant which implies the economic and political-social environment of Bosnia and Herzegovina, Federation of Bosnia and Herzegovina, cantons and local communities;
2. The business environment determinant that enabled the achievement of competitive advantages arising from the characteristics of the business with the following factors: the quality of the business environment, the size and dynamics of the market, the resources that the company has at its disposal, the competitive structure among companies;
3. The performance determinant of the company relates primarily to: the company's market position, the profitability of the company, the financial obligations of the enterprise, the state of the labor force in relation to the need, the technological state of the enterprise, the micro-location of the company and the value of the real estate it has, the ownership structure;
4. The determinant of the privatization process significantly affects the investors' interest in investing and restructuring the enterprise;
5. Determinant of investor performance which greatly affects the efficiency of restructuring.

The greatest influence on the success of restructuring of companies through the privatization processes according to the research sample has a determinant of the business performance of the investor, which is expressed in the rating of 5.6 on the scale from 1 to 7, the second most important is the determinant

of the business which has a rating of 4.1, and the third is business location determinant with rank 3.9. The determinants of the performance of the company and the determinants of the privatization process are on the fourth and fifth places respectively (Domazet *et al.*, 2008, p. 80).

By analyzing the results obtained, it can be concluded that the effects of restructuring are more significant in foreign investors than in domestic ones. Foreign investors have developed global and regional business networks that provide domestic companies with quality restructuring and inclusion on the international market. In order to successfully realize the restructuring of domestic companies, a number of fundamental changes in the business climate and corporate culture need to be implemented. This is the acquisition of a whole range of new skills in key business areas (production, finance, research and development, management, organization, human resources structure, *etc.*) and the formation of a significantly different organizational culture that participates in the design of other components of organization and management. Depending on the values and norms contained in the organizational culture, top management chooses a strategy and designs an organizational structure, forms a management style, employees define their motives and needs (Janićijević, 2012, p. 284). On the basis of this, adapting to modern business conditions requires domestic companies to introduce professional management, as well as marketing concepts as a philosophy that focuses on the consumer and his need.

5. Conclusion

The process of restructuring is increasingly being imposed as inevitability in a large number of companies in Bosnia and Herzegovina. Restructuring of companies is an activity that accelerates economic development. This activity has been present in developed market economies for years, and it is reflected in the implementation of various transformation processes in the domain of change of owners of capital, organization, management, market and financial restructuring. The ultimate goal of structural changes in the company is to increase the efficiency and effectiveness, and hence the competitiveness of the company to a higher level. Restructuring of companies in Bosnia and Herzegovina represents inevitability and a requirement for efficient and effective business. Domestic enterprises that are in the stagnation phase have two possible directions of movement, or healing through restructuring processes or liquidation as some domestic companies that have failed to adapt new business conditions. Enterprises entering the global market game must

be fundamentally reformed and adapted to global flows based on intense competition and ownership risk.

Unlike most developed countries and even developing countries, restructuring processes are slow in Bosnia and Herzegovina, but the inevitability of most domestic companies, especially those that have the prospect of a successful market operation, are inevitable. Based on the analysis that has been processed, it can be seen that companies in Bosnia and Herzegovina can successfully restructure and adapt to modern business conditions. Also, it was stated that companies in foreign ownership are more efficient and easier to implement restructuring processes than those in domestic ownership. It is important that the strategic changes made through the restructuring process are continuously upgraded through changes that occur in the current business.

A very significant transition in the management transformation is the introduction of professional management with the enterprises of developed countries. Professional management system represents a strict separation of management and ownership, professionalization of managerial staff, introduction of performance norms for managers, rewarding successful and punishing unsuccessful managers, signing professional contracts, *etc*. The lack of professional management is particularly evident in domestic enterprises, which is one of the significant obstacles in the process of restructuring the company. An important element of enterprise restructuring is the introduction of marketing concepts and marketing philosophy, which put the consumer and his need into the focus of business, as well as the efforts to satisfy customers better than the competition.

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THE CONCEPT OF CORPORATE SOCIAL RESPONSIBILITY FROM THE ISLAMIC ECONOMICS PERSPECTIVE

KONCEPT DRUŠTVENO ODGOVORNOG POSLOVANJA SA ASPEKTA ISLAMSKE EKONOMIJE

Abstract

Relationship between business and society is important because business activities have direct impact on social trends. This impact is analyzed through the concept of Corporate Social Responsibility (CSR). Although CSR has many definitions, it can be considered as a business approach that requires compliance with social, economic and environmental standards. Islamic banks, as business entities, are included in the economic activities of the society in which they operate, taking into account the public interest (Arab. Masleha). Regarding that approach, CSR is considered as inseparable part of Islamic moral economy whose primary goal is the achievement of social justice and social good. CSR in Islamic banking is related to Islamic business ethics based on the four ethical axioms; Unity of God, Equilibrium, Free will, and Responsibility and the principles of justice (Arab. Adl), charity (Arab. Ihsan) and trust (Arab. Amanah). The aim of this paper is to provide an insight into CSR in Islamic banking focusing on fundamental approach to CSR in Islam and how Islamic banks apply CSR comparing to the conventional banks.

Keywords: Islamic banking, Islamic moral economy, ethical axioms, CSR, CSR practice

JEL: G21, G34

Sažetak

Odnos između poslovnih aktivnosti i društvenih normi je važan jer poslovne aktivnosti imaju direktan uticaj na društvene tokove. Ovaj uticaj se analizira kroz koncept društveno odgovornog poslovanja (engl. Corporate Social Responsibility ili CSR). Iako postoji više definicija, CSR se može smatrati kao poslovni pristup koji zahtijeva usklađenost sa socijalnim, ekonomskim i ekološkim standardima. Islamske banke, kao poslovni subjekti, uključeni su u ekonomske aktivnosti društva u kojem djeluju, uzimajući u obzir javni interes (arap. Masleha). S tim u vezi, CSR se posmatra kao neodvojivi dio islamske moralne ekonomije čiji je primarni cilj postizanje socijalne pravde i društvenog dobra. Društveno odgovorno poslovanje u islamskom bankarstvu podrazumijeva primjenu islamske poslovne etike zasnovanu na četiri etička aksioma; Tevhid ili vjerovanje u jedinstvo Boga, jednakost, slobodna volja i odgovornost. Pored ovih etičkih aksioma primjenjuju se i principi pravde (arap. adl), milostinje (arap. Ihsan) i povjerenja (araa. Amanah). Cilj ovog rada je da pruži uvid u CSR u islamskom bankarstvu fokusirajući se na fundamentalni pristup primjene CSR u islamu i na koji način islamske banke primjenjuju CSR u odnosu na konvencionalne banke.

Ključne riječi: islamsko bankarstvo, islamska moralna ekonomija, etički aksiomi, CSR, CSR praksa

JEL: G21, G34

1. Introduction

The concept of corporate social responsibility (CSR) does not have a unique definition, because it is an evolving concept, but it can be considered as a business approach that requires compliance with social, economic, and environmental standards. European Commission (2011) defines CSR as "the responsibility of enterprises for their impacts on society". At the same time, it outlines what an enterprise should do to meet that responsibility. The term "voluntary" is omitted, which shows that corporate social responsibility became an imperative of modern business. It is particularly emphasized that "respect for valid legislation and collective agreements between social partners is a requirement for the fulfillment of this responsibility". The aim of the European Commission's Corporate Social Responsibility Strategy, for the period 2015-2020, is to release the full potential of CSR in a way that it has provided rewards and benefits to companies that promote and implement

the CSR concept. In order to fully implement the principles of CSR, all business entities must establish a process that integrates human rights, social, environmental, ethical, and consumer issues into their business and core strategy with the following objectives (Rinčić Lerga, 2009):

■ Creating common values for their owners/shareholders and other stakeholders as well as the society,
■ Identifying, preventing, and mitigating their possible adverse effects on the environment.

Although some early references about social responsibility appeared during the 1930s, the modern, academic approach has its roots back in the 1950s when Howard Bowen published "Social Responsibilities of the Businessman". According to Bowen (1950), social responsibilities of the businessman can be defined as "the obligations of businessmen to pursue those policies, to make those definitions, or to follow those lines of action which are desirable in terms of the objectives and values of our society". The question is what actually does it mean for a corporation to be socially responsible?

The answer can be analyzed through "the pyramid of corporate social responsibilities", introduced by Archie B. Carroll (1979, 1991), claiming that four kinds of social responsibilities composite total CSR: economic (be profitable), legal (obey the law), ethical (be ethical), and philanthropic (be a good corporate citizen). If they are considered separated, most critical tensions would be between economic and legal, economic and ethical, and economic and philanthropic. According to Hohnen (2007), factors such as sustainable development, globalization, governance, impact of corporate sector, advances in communications technology, risks and opportunities related to social and environmental issues, ethical values, society standards of social and environmental care, leadership, and business tools led to increasing attention towards CSR. On the other hand, public is more interested in companies activities because of the major scandals that happened over the years and after the global financial crisis in 2008. In this aspect, the concept of CSR needs to be considered again as an business orientation that changes from short-term to long-term goals and from maximum to optimum profit (Moravcikova, Stefanikova & Rypakova, 2015). According to previously, the aim of this paper is to analyze to concept of CSR from an Islamic economics perspective because most of the literature in this area observes the Western perspective of CSR and its impact on the society.

2. Theoretical background

The concept of corporate social responsibility (CSR) united the effect of company's activities on stakeholders and shareholders. Before it became recognized as an inseparable concept of a company's business, several theories about CSR were developed over the time. To understand those theories, it is necessarily to define company's attitude towards CSR. All those theories, according to Windsor (2006), can be analyzed by company's approach towards CSR; "ethical responsibility theory, which presents strong corporate self-restraint and altruistic duties; economic responsibility theory, which advocates market wealth creation subject only to minimalist public policy and perhaps customary business ethics, and corporate citizenship, which provides neither true intermediate positioning nor theoretical synthesis".

In 1970, Milton Freedman stated that corporation basic purpose is to maximize profit of its shareholder. In that case management was seen as a shareholders agent. These were the foundations of classical theory. This theory advocated an opinion that there was a negative relationship between CSR and companies financial performances because CSR was considered as an additional cost for the company. On the opposite of this theory, one of the most developed and present in CSR literature is stakeholders theory deeply developed by R. Edward Freeman in his book "Strategic Management: A Stakeholder Approach". This theory unites business, ethics and society because it creates value for customers, suppliers, employers, communities and financiers whose interest has to go together.

Generally, the impact of CSR on corporation performances can be observed at the micro and macro level. According to Wu and Shen (2013), macro performance includes environmental issues and reduction in social inequality and in the case of micro-performance it includes reputation enhancement, potential to charge a premium price for products as well as the enhanced ability to recruit and to retain high-quality workers. Ward (2008) states that business becomes an integral part of society and one of the role of CSR is to analyze how efficiently business is dealing with social issues and how CSR can increase socially beneficial decisions of companies.

If a company is considering to implement CSR, Hohnen (2007) notes some key potential benefits of such a decision such as: better anticipation and management of an ever-expanding spectrum of risk, improved reputation, ability to recruit,

develop and retain staff, improved innovation, competitiveness and market positioning, enhanced operational efficiencies and cost savings, improved ability to attract and build effective and efficient supply chain relationships, enhanced ability to address change, more robust "social license" to operate in the community, access to capital, improved relations with regulators and a catalyst for responsible consumption.

3. Religious perspective

During the 1990s interest in CSR increased where business ethic and corporate social responsiveness were used to discuss business performances by the companies. One of the aspects of CSR that gain more attention than others was the issue of religion. Frederick (1998) notes that religious belief is important in CSR because it can influence organisational decision-making and workplace behavior. One such an example is the "Interfaith Declaration: A Code of Ethics on International Business for Christians, Muslims, and Jews" with the aim to unite the shared moral, ethical and spiritual values that are inherent in the common Abrahamic tradition. The Declaration (1994) found four common key concepts of Christianity, Islam and Judaism that are applicable to business: justice (fairness), mutual respect (love and consideration), stewardship (trusteeship) and honesty (truthfulness).

Author Yhja Abudl Rahman (2010) notes that it is the responsibility of everyone who feels helpless and oppressed to find another location where freedom and human dignity are prevalent. In doing so, a believer, in his/ her pursuit of business, carries with him/her the Judeo-Christian-Islamic way of life and values. In this climate, organized religion has sought to play a significant role in establishing and disseminating moral and ethical rules that are consistent with religious doctrines and that offer practical guidance to those involved in business concerning ethical conduct (Brammer, Williams & Zinkin, 2007). In this aspect, "religion's impact on business is also seen through debate in the legislative and rule making processes whereby societies regulate businesses. As corporations are granted a license to operate they are expected to comply with the principles and constraints that are included. Basic values such as honesty, transparency, responsibility, fairness and integrity that are common to most faith traditions are included in this social contract".[1]

CSR is considered as inseparable part of Islamic moral economy where social responsibility refers to the responsibility towards society ("Therefore,

as for the orphan protect him, as for the beggar, oppress him not, and as for thy Lord's favor, declare it"; Quran: 9:11). Public interest in Islam is deeply rooted it's ideology and from an economic point of view, ideology is important because the stronger the ideology the less the divergence between the choices individuals make and those expected of them by the objectives of institutions and, consequently, the lower the cost of enforcement of contracts and rules of conduct. Therefore, asymmetry and moral hazard are minimized since a large part of uncertainty will be eliminated with rule compliance (Iqbal & Mirakhor, 2007).

Some authors related to Islamic philosophy, business ethics and banking, state that Islamic CSR can be seen from the Prophet's *hadith*: "Each of you is a shepherd and each of you is responsible for his flock. The amir (ruler) who is over the people is a shepherd and is responsible for his flock; a man is a shepherd in charge of the inhabitants of his household and he is responsible for his flock; a woman is a shepherdess in charge of her husband's house and children and she is responsible for them; and a man's slave is a shepherd in charge of his master's property and he is responsible for it. So each of you is a shepherd and each of you is responsible for his flock".[2]

The aspect of CSR in Islam in this paper will be observed through the Islamic economy, taking into account Islamic banks, as business entities, because Islamic banks are included in the economic activities of the society in which they operate. CSR in Islamic economy is related to Islamic business ethics based on ethical axioms: unity of God, equilibrium, free will, and responsibility including the principles of justice, charity, and trust.

4. Perspective of Islamic economics

In the Western perspective, CSR is derived from the philosophy of economic rationalism, that is, based upon the doctrine of human logical argument and a secular concept of law (Baydoun & Willett, 2000). In that regard, CSR concept is more considered to be as a recommendation while in Islam, the Islamic business ethics dominates the economy, not vice versa, since according to (Naqvi, 1981) business ethics can't be separated from the ethics already contained in the postulates of Islam. In that case, CSR is considered as an obligation where the Islamic view of the role of stakeholders is based on two fundamental concepts of the Islamic economic system − property rights and contracts (Iqbal & Mirakhor, 2011).

The concept of CSR in Islamic literature is relatively new because it wasn't seen as a separate or special part of the social paradigm. Justice and social welfare in Islam are prioritized and according to Platonova (2013), paradigm of Islamic moral economy (IME) with its axioms and principles have direct implications and provides rationale for CSR in organisations through articulating the ideals of IME in personal and organizational levels.

Principles of Islamic economy are derived from *Shariah* related to economic activities (Hadžić, 2014). In accordance with the above, the Islamic economy is also based on the sources of *Shariah*, primarily the holy Quran and Sunnah, but also other sources of Islam (Elasrag, 2015). As defined here Islamic economy has very clear goals that are consistent with the purpose and goals of *Shariah* or *"Maqasid al-Shariah"* (Asutay & Harningtyas, 2015). Some authors like Bedoui (2012) offer a very comprehensive concept of those goals based on:

■ Safeguarding the value of human life,
■ Safeguarding the human self,
■ Safeguarding the society, and
■ Safeguarding physical environment.

All previous goals should be balanced and equally represented to ensure their equal participation. In other words, as can be seen from the previous list of goals of the *Shariah*, they are very oriented towards the social, but also on the protection of the individual without forgetting individual interests. In this way, the Islamic economy is at the same time a moral economy (Asutay, 2013). According to that, CSR in Islam is derived from the Quran and Sunnah and themes that dominate the Quran are truth, man, life and death, moral, manners, family, society, environment, world and history of nations. In that regard CSR concept wasn't analyzed separately from its source until the development of the Islamic business ethics. According to Naqvi (1981) Islam is a philosophy of the "right" and the "right" is best spelt out by four ethical axioms: (a) unity (*tawheed*); (b) equilibrium (*al'adl wal ihsan*); (c) free will (*ikhtiyar*), and (d) social responsibility (*fardh*). The axiom of benevolence was added on this list by Beekun (1997).

Author Hasanuzzaman (2003) states that ethical axioms such as justice and equity, honesty, integrity, veracity, leniency, compassion, tolerance, selflessness, benevolence, cooperation, mutual consideration, sacrifice and harmlessness, are the guiding values in Islamic business ethics and everyday

life. One such example is the one quoted by Al-Maki (1995) cited in (Ali, 2014) in which the Islamic scholar Sari Al-Sagdi was one night informed that a great fire broke out in the market and that his store was burned. On his way to the market, he met a group of people who told him that other stores were destroyed but not his. His initial response was, "Thanks God". But then he paused and thought, saying, "I thanked God for protecting my property but did not care about others whose properties were destroyed in the fire". After that, Al Sagdi distributed all the goods he had in his store as a charitable act to erase his sin.

Economic and financial systems over the world have the same function but those internal processes that construct financial system are not the same. Islamic financial system is based on a paradigm as explained by Chapra (1992) which has socio-economic justice as its primary objective. This objective takes its roots in the belief that human beings are the vicegerents of the One God, Who is the Creator of the Universe and everything in it. They are brothers into each other and all resources at their disposal are' a trust from Him to be used in a just manner for the well-being of all They are accountable to Him in the Hereafter and will be rewarded or punished for how they acquire and use these resources.

In conventional financial system the attention is on economic and financial features of a business transaction while in Islamic, the effect of business transaction is being analyzed through the dimensions of social, religious, ethical and moral values. The relationship between commercial activities and civil society reaches beyond motivation and expectation, embracing the value of righteousness (*taqwa*) in all situations (IRI Report, 2017).

The most developed part of Islamic financial system is Islamic banking which has his own history and path, rules, principles and ways of doing business (Hadžić & Hanić, 2015). Islamic banking assets value in full-fledged Islamic banks, subsidiaries and windows amount to approximately USD 1.5 trillion as at first quartile in 2015 (IFSB, 2016). Most important characteristics of Islamic banking are the prohibition of interest (*riba*), prohibition of speculative activities (uncertainty or *gharar*), prohibition of gambling (*maysir*) and the promotion of risk sharing. Reason for prohibition of interest is based on public interest because profit is as ex post and symbolizes successful entrepreneurship and the creation of additional wealth. On the other hand interest is ex ante and represents cost that is accrued irrespective of the outcome of business

operations and may not create wealth if there are business losses (Iqbal & Mirakhor, 2011).

Hayat and Malik (2014) state that Islamic finance, beside the prohibition of interest and speculation is concerned with the structure of financing which means that each phase or structure of a business investment must be in accordance with *Shariah*. Generally, there are five types of activity in Islamic religious law (*fiqh*) that can serve as a guideline in everyday life and in business:

a) Obligation (*fardh*) activities are mandatory for every Muslim like daily prayer,
b) Recommended (*mustahabb*) activities that are not mandatory but highly recommended like giving charity,
c) Neutral (*mubah*) activity that is religiously neutral which means that there is no reward or sin if it is done,
d) Detestable (*makruh*) activity that is not forbidden but also not recommended to do,
e) Prohibited (*haram*) activity is strictly forbidden.

The social impact of Islamic banking should be measured by the impact that it has on society, especially in the area of education, health, poverty elevation and donation as a key determinants of CSR. Such an example is *zakah* which is not charity or a tax but an obligation in order to help the one in need because God is the real owner of all wealth. According to authors Ismail, Tohirin and Ahmad (2013), business *zakah* is obligatory for all types of businesses and it is 2.5% of surplus wealth that a company has possessed for a full lunar year with a notion that fixed assets are not liable for zakat but all other assets, categorized into current assets, should be included. The category of *zakah* is old over 1430 years and presents an exquisite example of the responsibility of man to others, to the society. In the Quran, the categories of *zakah* are precisely mentioned. Based on the fact that *zakah* is transferred to the community, in this case to the corporations, its application in Islamic economy is mandatory.

Unity (*tawheed*) is a concept of monotheism in Islam. It states that God is one and single (say, "He is Allah, the One and Only, Allah, the Eternal, Absolute, He neither begets nor is born, Nor is there to Him any equivalent."; Quran, 112:1-4) and a human being is a trustee of God. In that aspect the concept of Unity is related to the concept of Vicegerency because Islam holds that each person is a vicegerent (*khalifah*) or representative of Allah on earth and as such is a steward for all of Allah's resources (IRI Report, 2017). According to

Iqbal and Mirakhor (2011) Islam is different than other religions in the aspect of unitary perspective, which unites sacred and the profane and observe their elements as a whole. That means that political, economic and social activities of an individual are integrated into one whole.

One of the important aspects of Islam, and therefore CSR, is the realization that Allah supervises and monitors all human activities. Man like God's steward is obliged to act according to the rules prescribed by his Creator or Owner. This regulation was given in the form of *Shariah* which is not a constitute law in the conventional sense of the word. It is a set of legal norms derived from God's Message in order to regulate every aspect of human life. *Shariah* is a path that leads to the Source. It includes worship (*ibadet*), moral, education, politics, economy, environment protection and details of how a Muslims should behave in everyday life. *Shariah* is universal and applicable in every time of human kind. It demands doing good and forbids evil and it is immutable and obligatory for all Muslim believers. In other words, everything that is bad for man, his family and society is forbidden while everything that is good for man, his family and society is allowed. In that aspect, since the Islamic economy based its teachings on the *Shariah*, in the professional and scientific circles is often recognized as ethical or moral economy. As such, it is fundamentally deeply socially responsible.

In Islam, a system of rewards and punishments has been established. No human act will remain unnoticed. Everyone will receive the prize or punishment. Islam knows the concept of the so-called "Time totality" of the present and future lives. The time cycle in Islam is incomparably longer than the conventional one. It is virtually eternal, or time unlimited because it includes the future or eternal life. In a conventional sense, a person is limited to this world and this life, which has its own "lifetime". Islam emphasizes that after this life, which is short and passable, there is another one that is eternal. Paradise (*jannah*) and hell (*jahannam*) is prepared for those who believed and done good things and for those who have forgotten their Lord. For a Muslim believer, there is no worse punishment than *jahannam* and it can't be compared to the punishment in this world, either by its duration or by intensity. In a conventional term, reward is seen in a material aspect while in Islam the main reward is *jannah* in which person will remain forever.

The aspect of rewards and punishment can be observed through the concept of motivation. The main motivation of individual in Islam is expressed by contributing to the increase of God's satisfaction. In the business aspect, a manager

will undertake only those activities that are allowed and will avoid those that are forbidden. By doing so in his actions the recommended altruism will overcome and replace selfishness and greed ("but true righteousness is in one who believes in Allah, the Last Day, the angels, the Book, and the prophets and gives wealth, in spite of love for it, to relatives, orphans, the needy, the traveler, those who ask for help, and for freeing slaves; and who establishes prayer and gives *zakah*; those who fulfill their promise when they promise; and those who are patient in poverty and hardship and during battle. Those are the ones who have been true, and it is those who are the righteous"; Quran: 2:177) or ("indeed, Allah loves the doers of good"; Quran: 2:195) and ("Indeed, Allah orders justice and good conduct and giving to relatives and forbids immorality and bad conduct and oppression. He admonishes you that perhaps you will be reminded"; Quran: 16:90).

Allah stimulates people to work and do other activates. He motivates and encourages individual to work and create ("And when the prayer has been concluded, disperse within the land and seek from the bounty of Allah, and remember Allah often that you may succeed"; Quran: 62:10). By working and creating, individual satisfies his and his family's needs. He acquires material goods and contributes to the fulfillment of one's own satisfaction. As far as wealth is concerned, Islam does not find anything bad if those who possess it are grateful to Allah. According to the above, profit is not that basic goal that motivates am individual to work and earn like in the case of Western economic philosophy. If we are guided only by profit, in the aspect of a business, the financial institution will undertake activities that are not socially responsible. If profit maximization is the only goal, that will lead to socially irresponsible behavior which threatens to destroy or significantly endanger established balance on Earth. Whether actual climate change is not a good reminder and an example?

In the process of doing business there are four golden ethical rules of *Shariah* (Nomani & Rahnema, 1996, p. 143):
1) Maximization of social benefits and general interest;
2) Prohibition of causing injury or grief to others, or minimizing social uselessness;
3) Giving priority to social over private welfare and alleviating the lives of others and alleviating their difficulties, especially in the conditions of need and imperative needs.

Islamic economy doesn't accept the concept that if something is legal it is moral. Islam strongly condemns gambling and betting as socially harmful

and immoral activities and *Shariah* prohibits them. In many countries, these activities are legal, although they are harmful for individual, his family and society. Societies that legalized these activities, over time, face with numerous and serious social consequences of such actions. Cost of treating addiction of gambling and alcohol, globally, are enormous. In this context, can we also talk about the social irresponsibility of a country that legalized these harmful and unethical activities? The question is whether there is a state social responsibility (SSR)?

In the case of CSR, in Islamic perspective, the postulates are designed by the Creator and in the Western perspective the postulates are designed by humans and approved by society. In that aspect the CSR in Islam, in the case of an individual, can be explained through the relationship between man and God ("If any one does a righteous deed, it is for the benefit of his own soul; and if he does evil, it works against (his own soul."; Quran; 45:15), relationship between man and human beings ("Adhere to justice, for that is nearer to piety; and fear God. God is informed of what you do". Quran; 5:8), and a relationship between man and environment ("Glorify the name of your Lord, the Most High, who made and perfected and who after estimation guided". Quran; 1:3). In the case of a company, CSR can be viewed as a relationship with God in order to achieve halal revenue, relationship with stakeholders considering the aspect of permitted (halal) and unpermitted (haram) activities and relationship with the environment in order to preserve it.

Equilibrium *(al-adl)* is a concept related to the balance between this and life after ("And the sky, He raised; and He set up the balance so do not transgress in the balance but maintain the weights with justice, and do not violate the balance". Quran: 55:7-9). According to Chapra (1992) this concept is reflection to the concept of balance while Naqvi (1981) states that justice is related to Equilibrium. In that aspect, equilibrium can be observed as a way to maintain the good relations between each other. According to Elasrag (2015), equilibrium in CSR must be practiced by treating people fairly and justly in wage distribution without discrimination where through the principle of justice and equilibrium, organization can create harmonious lives in all societies. In order to ensure the principle of justice, Islam advocates that all conditions, regarded to trade, are clearly and precisely defined so that both parties are protected ("O you who believe! When you deal with each other, in transactions involving future obligations in a fixed period of time, reduce them to writing"; Quran: 2:282).

If equilibrium is observed as justice, Abeng (1997) states that there are six matters of justice that need to be fulfilled by Islamic business organizations in daily business activities:

1. Fulfillment of promises (pacts and contracts, verbal and written);
2. Exactness in weights and measures (specifications) in all business related items, including work, wages and payment, and labor movement;
3. Truthfulness, sincerity and honesty;
4. Efficiency, for example, jobs should be carried out without any lapse or omission, with best planning, and to the best of one's ability and competency;
5. Selection of merit;
6. Investigation and verification. These are essential because they constitute a prelude to right and ethical conduct.

Free will (*ikhtiyar*) is related to individual liberty and freedom of choice of opportunities Platonova (2013)but Islamic moral economy foundations of Islamic finance necessitates that Is-lamic norms must be integrated as \u2018substance\u2019 in financial activity. This is considered as the distinguishing point of Islamic finance, and is also the meaning of the suffix \u2018Islam\u2019 in Islamic finance. The sub-stance, hence, refers to real economic activity, observing social good, contributing to human and economic development, and enhancing and protecting individual, society and environment. In modern times, this is considered as \u2018corporate social responsibility\u2019 (CSR. In that aspect, although there is a free will in order to choose which path to follow, individuals have a responsibility towards themselves, society and the Creator (Naqvi, 2003).

Social responsibility (*fardh*) is related to the aspect that person is not allowed to do certain activities in order to protect the public interest because individual is responsible for its acts. According to Naqvi (1981), individualism like in the West is constrained in Islam. In that aspect, social justice is an extension of the ideals of the individual to the collective because it is crucial to maintain equilibrium (IRI Report, 2017).

5. Measurement of CRS

In order to indicate the need to measure CSR in various financial and other institutions, including Islamic banks, in this paper the concept of CSR index and corporate social responsibility disclosure (CSRD) will be used. During years, certain ways of measuring CSR was developed. In the case of Western

society one of the example is "The Business in the Community", whose CSR index measures: savings from operational effectiveness, new contracts (bids), social value, economic contribution, funding opportunities, media coverage and other. Businesses would benefit from measuring the value that CR brings to them as well as to other stakeholders (The 2016 CR Index Insights Report).

Because public is more interested in the activities of financial institution, CSR can be measured using the approach of CSRD. Gray (1987) describes CSRD as communicating the social and environmental effects of organizations' economic actions to particular interest groups within society and to society at large. As such it involves extending the accountability of organizations (particularly companies), beyond the traditional role of providing a financial account to the owners of capital, in particular, shareholders.

Taking into account five distinctive features of Islamic banks: underlying philosophy and values, provision of interest-free products and services, restriction to Islamically acceptable deals, focus on developmental and social goals and subjection to additional reviews by the *Shariah* Supervisory Board (SSB), Haniffa and Hudaib (2007) developed an ethical identity index. The aim of the Index is to analyze the annual report of Islamic banks in order to measure the degree of ethics of the bank based on information published in the report. This index is based on the analysis of 78 indicators grouped into 8 dimensions: vision and mission statement, BOD and top management, product, Zakah, charity and benevolent loans, employees, debtors, community, *Shariah* supervisory board (SSB). The index reveals the extent of implementation of the unity, equilibrium, free will, and social responsibility as key dimensions of Islamic CSR. Beside these axioms, the principles of justice, trust and benevolence are also taken into consideration.

In that aspect, CSR index can be calculated:

$$CSRDI_{jt} = \frac{\sum_{i=1}^{n} x_{ijt}}{N}$$

where:

CSR index – CSR index for dimension *j* and period *t*;
X_{ijt} is variable X (1, …, n) for dimension *j* and time t;
N is the number of variables/statements.

Authors Dusuki and Dar (2005) examined the views of IBs' stakeholders in Malaysia about CSR on a sample of over 1500 respondents from several stakeholder groups in two full-fledged Islamic banks in Malaysia. The research has discovered that, in Malaysia, stakeholders of Islamic banks are concerned with socially responsible and ethical banking. On the other hand, Sairally (2005), on a sample of 250 respondents, showed that 41.7% are interested only in requiring economic and legal responsibilities. Because of a still low level of a CSR implementation and reporting practice among Islamic banks, in April of 2015 the Islamic Reporting Initiative (IRI) was launched. "The IRI aims to create the first mainstream reporting framework for Corporate Sustainability and Social Responsibility (CSR) based on Islamic principles and will enable organizations to inclusively assess report, verify, and certify their CSR programs".[3]

6. Conclusion and recommendations for future research

The importance of religion in the context of CSR should not be underestimated. It has a great potential that could be used in society interest in order to develop socially responsible business and behavior. Religious people will be additionally cautious when making decisions both inside and outside the company. Reviewing and promoting the ethical codex of all religions can contribute to the further development of the CSR concept and give it a new, so far, insufficiently recognized dimension. The Islamic economy is based on ethics and therefore many authors and researchers call it an ethical or moral economy. If it is ethical, and it is, then it is also socially responsible in the broadest sense of the term.

The Islamic economy is, in essence, socially, and therefore corporately responsible, because without ethics there is no Islamic economy. There are numerous examples of direct indications of good and deterrence from evil that we recognize in numerous verses in the Quran and in the *hadiths*, that are dealing with economic and social issues. In the context of the Islamic economy, profit is not the main goal. The main goal is to increase God's satisfaction. We will increase that satisfaction by doing what He has commanded and recommended for us, and we will avoid what is forbidden for us. This is achieved in the manner that the welfare of man and his family, employees, customers and suppliers, the environment, *etc.* is taken into account. If we compare this approach to conventional economy we can conclude that this is the basics of stakeholder theory but with the difference that Islamic approach

is 1430 years older. Such an approach greatly changes the role, but also the responsibility of the corporation. Promotion of the public in relation to the private interest is especially evident in the context of the "*Shariah* golden ethics". Some of these rules of mutual relations of the West have only recently started to promote and apply more intensively.

Quantifying and measuring the CSRD index can contribute to the improvement of the overall process by providing the necessary comparisons between the same or different institutions (as well as entire countries) both at the local and global level.

Further research in the context of social responsibility could also include the role of the country that legalizes activities such as gambling or even the production and distribution of alcohol. In that aspect, the research topic would be the exploration of the concept of state social responsibility (SSR). Bosnia and Herzegovina could be a good example for that research.

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SUPERVISION AND SITUATIONAL ANALYSIS – CASE STUDY OF THE PROCESS OF FINANCIAL CONSOLIDATION OF THE COMPANIES IN TUZLA CANTON

NADZOR I ANALIZA STANJA – CASE STUDY POSTUPKA FINANSIJSKE KONSOLIDACIJE PRIVREDNIH DRUŠTAVA U TUZLANSKOM KANTONU

Abstract

The subject of interest in this article are the companies in Tuzla Canton, Federation of Bosnia and Herzegovina, which are majority owned by the Government Tuzla Canton, or whose majority share is over 50% of the state capital, according to article 1, paragraph 2, of the Law on Financial Consolidation of Enterprises of the Federation of Bosnia and Herzegovina (hereinafter: ZFKPD FBiH). Supervision, control, and monitoring of the implementation of the financial consolidation process in certain companies is mostly represented in the work, therefore, all of the assemblies will be backed up by examples from practice with appropriate statistical and analytical data processing. The aim of the article is to show the importance of supervision, control, and monitoring of the implementation of process of financial consolidation of the companies in order to realize the success of its realization. The control involves the regular submission of the Report, the Ministry and the Government, which should aim at successfully overcoming the financial, legal, and economic problems in these companies, while on the other hand it represents a justified basis for the departure of companies into bankruptcy. Based on the comparison and analysis of the final results of the conducted control and supervision of the companies in Tuzla Canton, will be presented results of the successful or notsuccessful procedure.

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Sažetak

Predmet interesovanja ovog rada su privredna društva Tuzlanskog kantona, koja se nalaze u većinskom vlasništvu Vlade Tuzlanskog kantona, odnosno čiji je većinski udio preko 50% državnog kapitala, prema članu 1, stav 2, Zakona o finansijskoj konsolidaciji privrednih društava Federacije Bosne i Hercegovine. Nadzor, kontrola i praćenje realizacije postupka finansijske konsolidacije u određenim privrednim društvima je najvećim dijelom zastupljena u radu, shodno tome, sve skupa će biti potkrijepljeno primjerima iz prakse uz odgovarajuću statističku i analitičku obradu podataka. Cilj rada je da prikaže koliki je značaj nadzora, kontrole i praćenje realizacije postupka finansijske konsolidacije privrednih društava kako bi se uvidjela uspješnost realizacije istog. Kontrola podrazumijeva redovno podnošenje izvještaja Ministarstvu i Vladi, što bi trebalo da ima za cilj uspješno prevazilaženje finansijskih, pravnih i ekonomskih problema u tim privrednim društvima, dok s druge strane predstavlja opravdan osnov za odlazak privrednih društava u stečaj. Na osnovu usporedbe i analize krajnjih rezultata provedene kontrole i nadzora privrednih društava u Tuzlanskom kantonu, bit će realno predočeni rezultati (ne) uspješno provedenog postupka.

1. Introduction

All the processes of business are closely linked to one global, regional and local area, which ultimately can partly reflect positively on the gradual development of the economy, part, and then the state as a whole. This is also the case with the influence of the newly established financial consolidation institute that should improve the economic (non)opportunities in the business of companies in the Federation of Bosnia and Herzegovina (hereinafter: FBiH) and BiH.

Through the gradual implementation and the beginning of the process of financial consolidation, the objective is to improve the quality of life and to

improve economic growth, which at first does not seem to be just as dominant and positive as the laws of insolvency dominate in the predominant sense of the economy of BiH.

Thus, the process of financial consolidation is not an end in itself, but aims to improve the economic and economic flows on which one economic-legal system rests - in this case the entities, and also the state, i.e. concreto Tuzla Canton.

2. Previous research

2.1. The process of financial consolidation of companies − importance and purpose of law

In this particular case, when adopting an *ad hoc* Law on Financial Consolidation of Economic Companies in the Federation of BiH (hereinafter: ZFKPDFBiH)[1] (Čokić-Džinić, 2015), related to the consolidation of corporate debts (Gayghan, 2002). The aim is to make a list of debts with the record of negative business in a given company. The law should be a saving to a prospective business society and to present the current state and business aspect of the same on a realistic basis. With the submission or application of certain companies to the proceedings, it is also essential for the execution of supervision and control of the realization of this procedure. For this purpose, the way of reporting by business entities to the directly superior or authorized bodies, which are as such titled in the applicable norms, is used. Namely, the significance of the Reporting, which is prescribed by the relevant provision of the Act, article 17 (Fialski, 1994).[2]

It is noteworthy that supervision, control and monitoring has a psychological aspect when it comes to asking for a procedure related to the financial consolidation of companies in the FBiH and it is the responsibility of the authorized entities for the purpose of realizing the provisions of the said law as well as the procedures.

Namely, in the context of better reporting and analysis of potential data as well as the success of the application of the aforementioned Act, the author uses examples from practice in the narrow sense, which includes the Tuzla Canton area. More precisely in this paper are presented those companies that had the potential to financially consolidate and thus exploit the positive aspects prescribed by the ZFKPD in the Federation of BiH.

One of the basic goals is to record the losses, to determine the current state of affairs and business operations, as well as potential opportunities for continuation of business and reorganization, in a way and with the help of opening a new transaction account for a "new" company (Hashi, 1995; LoPucki & Doherty, 2004; Frey, Swinson & Frey, 2006).

In accordance with the existing state of affairs in companies, there are evident problems that arise and exist with the (not) possibility of opening a new business account for the company, and in what will be the words and will be a more detailed analysis of the work.

3. Research methodology

The research methodology is based on the case study of each individual company in the area of Tuzla Canton. In this sense, each individual company represents the basis for the research as well as for additional observations in the period 2014-2017, interval, which is why – goal of this article is shows the success of the ZFKPD FBiH from application to final realization. Thus, with the application of the ZFKPD FBiH (limited time duration) and in the Tuzla Canton area, the crisis situation can be overcome if, from the application phase − without normative barriers − disciplined and fully submit the future development plan and the necessary documentation.

4. Empirical research results

4.1. Case study of the companies in Tuzla Canton − application and realization

Authorized bodies for the receipt of prepared documentation under the Financial Consolidation Act are management as a party actively participating in the process and the other one that is applying for (as a passive side) the realization of the process of financial consolidation, the Ministry of Industry, Energy and Mining Tuzla Canton. In this case, it is a question of the possibility of applying in this proceeding to six companies within the jurisdiction of the Cantonal Government. While, for example, some of them in strict federal jurisdiction (more because of the importance and general interest of the government in given companies) one of them is "Konjuh" Inc. Zivinice (Revitalization Program of the Business of "Konjuh" Inc. Zivinice, July 2012).

Accordingly, on the other hand, these companies are the applications of which they submit, the original submission of the valid - essential documentation, to the competent body, then the stage of consideration and at the end of the decision on further position in the process of financial consolidation, acceptance or rejection. This was also the case with practical examples, that is, the cases that were the subject of a complex discussion in the above-mentioned Ministry, the Commissions as well as at the sessions of the Government of the Tuzla Canton.

These are the six companies that applied in this process, namely:
1. "Tvornica transportnih uredaja" (TTU) Inc. Tuzla,
2. "Koksno-hemijski kombinat" Ltd. Lukavac,
3. "Fabrika obuce Aida" Inc. Tuzla,
4. "Elektromontaza" Ltd. Tuzla,
5. "Livnica celika" Bosnia Valves Ltd. Tuzla, and
6. "Rudnik soli Tuzla" Ltd. Tuzla.

Judging by the submitted documentation, at the outset, three out of six registered companies fulfilled realistic assumptions that were standardized by article 7, paragraph 1, of the Law on Financial Consolidation of Economic Companies in the FBiH, which makes a total of 33.33% of successful applications in the process of financial consolidation (shown in Graph 1):
1. "Tvornica transportnih uređaja" Inc. Tuzla,
2. "Rudnik soli Tuzla" Ltd. Tuzla, and
3. "Elektromontaza" Ltd. Tuzla.
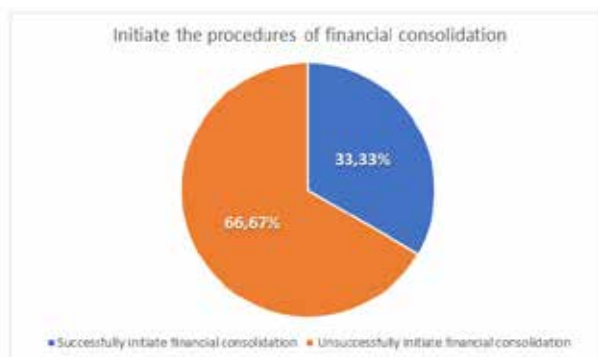
Graph 1. *The percentage of successful applications of companies in the process of financial consolidation in the Tuzla Canton*

Source: Authors' research

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In the context of the aforementioned fact, it is not the fact that due to the submission of the relevant documentation, pursuant to the provision of article 7, paragraph 1, of the ZFKPD FBiH, one of the three companies, or "Elektromontaza" Ltd. Tuzla, denied documentation and possibility for realization of the process of financial consolidation.

In order to further implement a successful financial consolidation process, the Management Board of the Company and the Supervisory Board have the role to take certain statutory activities in order to successfully complete the process of financial consolidation. The procedure implies compliance with the imperatively established deadline of the law while the abovementioned bodies are assisted by the competent authorities, which, in order to achieve the quickest and most efficient realization of financial consolidation, are required to take the appropriate measures prescribed by article 8, of the ZFKPDFBiH. Namely, the deadline of 30 days from the date of submission of the financial consolidation documentation is imperative and preconditioned for the deadline, so that for the purpose of the realization of the procedure there will be no delay of the procedure, and thus exceeding the deadline of 3 years.[3]

Finally, in order to record some final results when comparing, analyzing and interpreting all data relating to financial consolidation of companies in the Tuzla Canton, it is necessary to list below some of the most important facts that will resolve the dilemma of (non)success of the ZFKPDFBiH application in the Tuzla Canton.

4.2. Case study of the financial consolidation at the "TTU" Inc. Tuzla

"TTU" Inc. Tuzla is one of the three companies that applied for financial consolidation in the Tuzla Canton. This company represents a very important support of the economic system of the mentioned Canton.

The aim was to improve the business prospects for further cooperation, improvement and continuation of the business of this company, of course with the opening of a new account. Along with the appropriate Elaboration on justification for further cooperation and continuation of business in this company, all the necessary documentation provided in article 7, ZFKPDBiH has also been submitted.

The value of capital in a company is shown through Elaborat as a clear basis for the possibility of continuing production activity in this company with a some investments. Thus, the capital value is presented in the following way - shown in Graph 2.
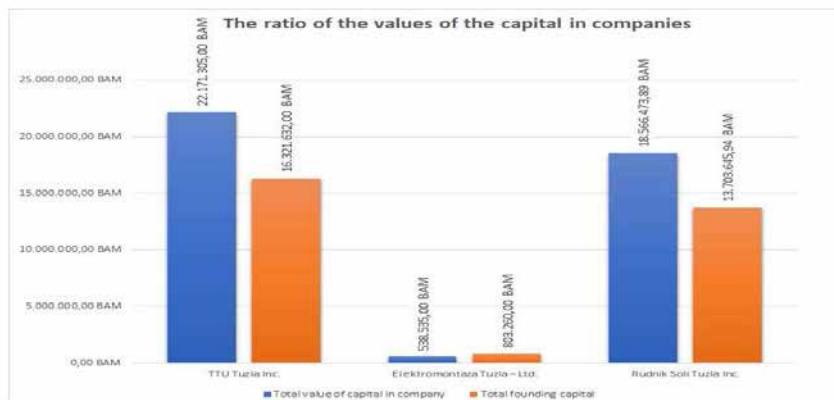
Graph 2. *Capital value in "TTU" compared to the others*[4]

Source: Authors' research

With the aim of these indicators, it can be clearly concluded that there are grounds for justifying the realization of the financial consolidation process in "TTU", which will eventually lead to bankruptcy, and the reasons will be some other bases and parameters.

Namely, at the session of the Government of the Tuzla Canton, pursuant to article 8 (paragraph 1) of the ZFKPD FBiH and article 1 of the Decree on the Procedure of Financial Consolidation, a decision on the financial consolidation of the "TTU" Inc. Tuzla 20/01/2015, basis on which it can be concluded that it is justified to perform financial consolidation. However, the changes in the structure of functioning and work in the "TTU" have not occurred and there has been no notification of the Tuzla Canton Government through the Ministry, which indicated the need for a Report on the state and the course of financial consolidation. To the goal, the conclusion of the Tuzla Canton Government is that[5] ordered the Ministry to obtain and report to the Tuzla Canton Government, in what state "TTU" is in the state of affairs and whether it is in the process of financial consolidation. Thus, when it was established that the procedure continued to take place, "TTU" asked for an account to be opened at Nova Bank, which is a step forward and very significant progress and fulfillment of one of the basic objectives of this procedure.

However, this "TTU" faces the resistance to the application of article 9 (2) of the ZFKPDFBiH (based on the statement by the Federal Tax Administration about the opening of the account in "Konjuh" Inc. Zivinice - whereby in mid-2016 it will open bankruptcy) by the Tax Administration, which interprets its right to inability Granting consent or giving an unauthorized consent, as this would be contrary to the conduct of the business carried out by the Tax Administration but contrary to Art. 2, of the Tax Administration Act. The above-mentioned provision was later overturned[6] with the amendments of the existing legal regulations, i.e. the Law on Tax Administration of FBiH, and ZFKPDBiH, but which unfortunately has come to late for certain companies.

According to ours opinion, the Tax Administration should take over the responsibility and give consent when opening accounts in those companies where financial consolidation is carried out at the moment of actuality,[7] especial according to specialty of the law as well as by the provisions of article 5, paragrah 2.[8] Specifically, the time has been taken away from this company as well, and it has not achieved one of the basic goals of the law, so that the business could be reluctant to act independently on the market and remove some of its earlier obligations. After all, the competent Ministry addresses the Legislative Office, which is unambiguous in the Act No. 02 / 4-14-8680 / 15, dated 06/04/2015. Of the year states that the ZFKPD FBiH and article 9, paragraph 2, clearly stipulated the obligation for the Tax Administration to approve the opening of the account, which it did not give. In this way, whether deliberately or not deliberately blocking the initiated process of financial consolidation in TTU. Which will be later (within a limited - time limit of 60 days[9]) to undermine the possibilities of continuing business operations and carrying out production activities in this business society and thus to dampen the primary task that was intended to be carried out by the Law.

Finally, failure to report due to changes in organizational and functional structure of the company as well as non-approval of the Tax Administration, *i.e.* no opening of accounts, and therefore non-settlement of debts in precarious terms, resulted in a consequence called bankruptcy. Because of this state of affairs, the Tuzla Canton Government is at its session of 27/05/2015. Adopted a Decision abolishing the Decision on Financial Consolidation of the "TTU" Inc. Tuzla[10] with the explanation that this is the reason for not signing the agreement with the creditors within 15 days from the time of the decision on financial consolidation. But that is not the only reason, as we see, accountability can be attributed to both sides and for several reasons.

So with a proposal dated 05/08/2015 the Tuzla Canton Government and the Ministry, presented to the advocates the proposal for the opening of bankruptcy proceedings for failure to meet the conditions for the implementation of the financial consolidation procedure. The bankruptcy proceedings are open with the fulfillment of alternative conditions prescribed by the Law on Bankruptcy[11], and accordingly within 05/11/2015 at 12.00 am[12] and bankruptcy was opened, and a lawful entry into the public register was made.[13]

4.3. Case study of financial consolidation in "Elektromontaza" Ltd. Tuzla

"Elektomontaza" Ltd. Tuzla is an economic company operating in the Tuzla Canton area, which is true of some smaller capacities but very important for the economy. The basics of the business of this company were mainly in electrical installation, installation, work of works, sanitation works, construction, crafts *etc*. The constant problem emerged due to the "departure" of staff to retirement and borrowing of this business. With this adoption and the entry into force of the ZFPPDFBiH, this company has made the opportunity for a new beginning.

By applying to the financial consolidation procedure, the company has provided all the necessary documentation that is considered necessary to enter this procedure, pursuant to article 7, paragraph 2, ZFKPDBiH.

Elaboration also implied a description of the state of affairs and further business and the preparation of business projections for the period of its repair from 2015 to 2017 (see Table 1).

Table 1. *Projections of the income statement of the electricity company for the period 2015-2017*

in BAM

	2015	2016	2017
I – Total income	131,390	218,990	238,895
II – Total expenses	131,390	213,515	226,945
1. Basic and auxiliary materials	12,650	20,642	29,675
2. Gross salaries	100,240	176,123	178,495
3. Depreciation costs	15,000	1,500	2,000
4. Other costs	3,500	15,250	16,775
III - Profit	0	5,475	11,950
IV - Income tax	0	547	1,195
V - Net profit	0	4,928	10,755
VI - Net loss	0	0	0
Number of employee	9	13	13

Source: Authors' research

Thus, Table 1, foresees a business projection for the period 2015-2017, which would fulfill and justify the appropriate basis for its further continuation of business. The problems in this company are particularly evident in the context of the functional structure of this business, as it is fiscally burdened, blocked by all the transaction accounts by the Cantonal Tax Administration, and then increased the number of claims by creditors playing a very important role here. Due to the non-signing of the agreement with the creditors (which constitutes the fundamental problematic issue that is imposed due to the existence of a debt), as well as the non-submission of documents relating to the obligations of the respective Working Groups and the Commission appointed by the Tuzla Canton Government and the Ministry claim, 03/02/2015. Rejecting the application for the application of the financial consolidation procedure "Elektromontaza" Ltd. Tuzla.[14]

Following the Government's involvement with Tuzla Canton, a Conclusion has been passed that stipulates that in cooperation with the Company's Management the decision is to be made through restructuring through the recruitment or retirement of prospective employees in a given company.[15] This is done, after which, along with financial assistance from the Government of Tuzla Canton, the bankruptcy proceeding is initiated, ie the previous procedure[16] that was necessary to calculate all the parameters of whether the company is ready to go bankrupt.[17] During 2015, the reasons for opening bankruptcy were established, in order to start the bankruptcy proceedings in this company in early 2016. In this way, the business community ceased to exist, and in our opinion there were the reasons, the basis, but also the will to undergo the process of financial consolidation or some other form of reorganization, as well as revitalization or reorganization in the form of measures or forms such as merging or merging with another business association.

4.4. Case study of financial consolidation in "Rudnik soli Tuzla" Inc. Tuzla

One of the positive examples of the process of financial consolidation of companies in the area of Tuzla Canton is certainly an example of "Rudnik soli Tuzla" Inc. Tuzla. Although a rare example of successful application of the mentioned institute, it is the same as a few other examples in the field of Tuzla Canton has gone through a painstaking process as it tackles the problems that followed this procedure.

Namely, "Rudnik soli Tuzla" Inc. Tuzla[18] is respecting the legal deadlines, filed a request for Financial Consolidation, by 10 December 2014., which

was considered justified and timely, and was taken into consideration. The request was submitted with the previous decision of the management of this company dated 23/09/2014. The year in which the consent was given to both the Supervisory Board and the Board of Directors of this company.

The request was subject to negligence, working groups, government departments, the Commission, and the relevant ministry, including the Government Tuzla Canton to finally approve the implementation of the procedure of financial consolidation on a predefined basis. Competing with the material as a whole, also with decision of the company's management on the readiness to enter the financial consolidation process, whose total state share of state-owned capital is about 73% and remains privately owned, the company has striven to make the final decision of the Government Tuzla Canton on the approval of the procedure of financial consolidation in "Rudnik soli Tuzla" Inc. Tuzla. This is a very important requirement for a fulfillment in the sense of article 1, paragraph 1, ZFKPD BiH, in order to implement the process of financial consolidation in time.

The decision on the possibility of entering into the process of financial consolidation is certainly based on the principle of volunteering of the management of the company to enter the process. This has been confirmed by the adoption of the aforementioned Decision – 23/09/2014. But, besides that, due to the existence of various debts, it had to reach an agreement with the creditors.

The debts of "Rudnik soli Tuzla" Inc. Tuzla mainly referred to and in this case look like this:[19]
– Health insurance contributions: BAM 1,233,732.15;
– Unemployment insurance contributions: BAM 143,570.90;
– The debts for electric energy in amount of: BAM 191,485.41.

Therefore, prior to the approval of the Government Tuzla Canton and the entry into the process of financial consolidation, there should be a contract or agreement with the creditors[20], in this case with "Elektroprivreda BiH" Inc. Sarajevo - Branch of Elektrodistribucija Tuzla.

Thus, the Government Tuzla Canton, through the competent ministry, has submitted a decision on voluntary inclusion in the process of financial consolation, which will ultimately be a condition for the final decision of the Government Tuzla Canton,[21] and undisturbed rationalization of the process

of financial consolidation. In addition, the Tuzla Canton Government set a conditions for a company to conclude a contract within 15 days from the adoption of the final decision approving the financial consolidation procedure to agree on the reprogramming of the debts with Elektroprivreda - Branch of the Elektrodistribucija Tuzla,[22] also the Employment Service Tuzla Canton and the Health Insurance Institute of Tuzla Canton, and to deliver it to the Federal Tax Administration through the Tax Office of Tuzla.[23]

Decision of the Tuzla Canton Government, with the obligation to respect the previously issued and submitted decisions of the management of the company "Rudnik soli Tuzla" Inc. Tuzla was adopted on 20/01/2015, by which this business has fulfilled one of the first preconditions for a positive process of financial consolidation and road for a "healing".

Until then, some of the essential prerequisites had to be met, i.e. to get an agreement from the creditors to enter the process of financial consolidation, and after the final decision on approving the process, it is necessary to reach agreement on the repayment of debts, In favor of unemployment insurance as well as health insurance. The Tuzla Canton Government, through the competent ministry, has allowed the capital increase in this company to repay the debts on the basis of delivery el. Energy, as well as those related to health insurance and unemployment insurance. These conditions and deadlines are respected, and in the company of "Rudnik soli Tuzla" Inc. Tuzla, could be further discussed on the successfully initiated financial consolidation process, and on possible business projections and reduction of the cost of debt or investment for the period 2015-2019, as can be seen in Table 2.

Table 2. *Possible planned activities for the period 2015-2019 in*
"Rudnik soli Tuzla" Inc. Tuzla

I INVESTMENT ACTIVITY						
Planned activity	Planned investment dynamics by years					
	2015	2016	2017	2018	2019	2015-2019
Production of hollows	2,665.000	4,230.750	4,230.750	5,641.000	4,230.750	20,998.250
Sanation B-97	168,000	-	-	-	-	168,000
Construction of pipe-lines in the field of exploitation	370.000	-	-	-	360.000	730.000
Production of sonnets 250mm and 300mm	160.000	-	-	-	-	160.000
Creation of handy reservoirs	265.000	-	-	-	-	265.000
Bridging the Jala	70.000	-	-	-	-	70.000
Equipment	565.000	400,000	400.000	400.000	400.000	2,165.000
Production of pipe-line 500mm from Thermoelektrana to Tusanj	-	1,200.000	1,200.000	-	-	2,400.000
Total I	4,263.000	5,830.450	5,830.450	6,041.000	4,990.750	26,956.250
II DEVELOPMENT ACTIVITIES						
Planned activity	Planned investment dynamics by years					
	2015.	2016.	2017.	2018.	2019.	2015-2019
Production of liquid hydrocarbon and waste storage	-	1,000.000	-	-	-	1,000.000
Alternative supply of technological water	-	-	114.000	-	-	114.000
Introduction of automation into the transport system	215.000	150.000	150.000	150.000	135.000	800.000
Works on increasing the level of utilization of reserves	-	-	100.000	100.000	100.000	300.000
Bilding a mini-central	-	-	190.000	-	-	190.000
Bilding a photovoltaic el.	-	80.000	30.000	50.000	-	160.000
Installation of a heat pump	-	20.000	-	-	-	20.000
Geological research on stone salt	-	100.000	700.000	700.000.	400.000	1.900.000
Feasibility studies on the use of salt water for other purposes	-	-	100.000	100.000	100.000	300.000
Total II	215.000	1,350.000	1,384.000	1,100.000	735.000	4,784.000
TOTAL I+II	4,478.000	7,180.750	7,214.750	7,141.000	5,725.750	31,740.250

Source: Authors' research

In the context of the aforementioned and projected investment projections for the period 2015-2019, there are significant parameters indicating that, to date, most of the agreement has been met and the Decision of the Tuzla Canton Government on the realization of the procedure for financial consolidation. During the entire procedure of financial consolidation, neither the Ministry nor the Tuzla Canton Government had any need for intervention except in the part related to the Reporting. Reporting in the sense of article 14, ZFKPD FBiH, we consider it very important, because it introduces in a certain way the responsibility of a prospective company for the purpose of positive business.

In addition, there is a great deal of management's will, as well as the taking of all the actions that were a condition for entering into the process of financial consolidation and at the same time some kind of responsibility before the Ministry or the Government Tuzla Canton, which gave *"green light"* to the enter in this process. By legal analogy, all of this was represented by the application of article 14, ZFKPD FBiH, both at federal and cantonal level, which in one way introduces the order in which the business and respect of what was the subject of an earlier agreement between the parties.

In support of the successful and positive realization of the process of financial consolidation in the "Rudnik soli Tuzla" Inc. Tuzla, apart from will, contracting, meeting deadlines, making decisions, constituting significant financial projections goes in favor of Reporting, Supervision, Control and Monitoring. In this way, through the six-monthly reporting, this is ultimately achieved by the fact that the "Rudnik soli Tuzla" Inc. Tuzla on April 2016., finally settled debts, and continued a positive business trend, i.e. successfully implemented the process of financial consolidation.

5. Conclusion

In order to achieve the maximum effect of the application of the new *ad hoc* of ZFKPD FBiH, the minimum conditions and basic parameters for its application, *i.e.* the potential state in which the business entity should be located, were not provided.

This means that, for these reasons, in most cases, those companies applying for this program have failed to recover and exploit all positive aspects of the law in order to continue work. In addition, most of them failed to enter the process of financial consolidation due to the lack of and failure to meet the appropriate conditions set out in article 7, ZFKPD FBiH.

First of all, there was no willingness of potential creditors to conclude a valid agreement on the manner in which debts were due (article 4, paragraphs 2 and 3, and article 5, ZFKPDFBiH), while the provisions of the Tax Administration Act did not allow it to be successfully applied in this process (provisions of article 2, paragraph 1, of the Law on Tax Administration of FBiH and article 9, paragraph 2, ZFKPD FBiH) – obvious dislocation/in contrary are all this provisions. Unfortunately, (with a new provisions) that was too late for some companies, with a new amendment to the Tax Administration Act in article 2, paragraph 2. The reason for the complete shortage and the inability to apply in the process of financial consolidation can be seen in the fact that at that time (the procedures of amendments), and already in application of this procedure, a number of companies have already fulfilled the reasons for leaving in bankruptcy. Finally, it has caused negative consequences for the economy, but also the economic system of the state in general, the consequences of which will be felt particularly and after 2017.

Namely, it is a matter of commonality and goodwill of all relevant authorities, authorized bodies of the processor, but also individuals (including employees) and creditors, how they will, in due course, until mid-2017 (up to when it is also the official application period of the ZFKPDFBiH), with the aim of improving economic growth and prosperity at the local level, to help the developmental bases at the state level, which should also be reflected at the regional level.

We consider that nothing particularly happened with the last amendment of this law, which dates of financial reports but also the financial state of the companies applying in this process, instead of 30/09/2013, on 30/06/2014 years.

Furthermore, there are a very small number of companies in the FBiH and also in the area of Tuzla Canton, which will seem to be successfully completed by the process of financial consolidation. Of course, to overcome the goal that is to be achieved, the continuation of business and the business of the company with an emphasis on the opening of a new account, and what was needed above all, how many companies should be sanitized. In addition, the target was the existence of companies and after the end of the law, by mid 2017.

Despite the existence of financial disparity, instability of business relations and contacts, lack of availability of additional material used to estimate the overall state of the company, lack of willingness to relinquish and negotiate

by creditors in certain situations, and the unwillingness of authorized state organs in the realization of a prioriotet goal a crucial role, such as the Tax Administration of the Tuzla Canton and the FBiH, how much the percentage of the rehabilitation of at least one economic entity is important ("Rudnik soli Tuzla" Inc. Tuzla), enough to speak of the purpose of passing this law.

In part, we see the meaning of passing this law, which perhaps for the last time has been attempted by the state institutions for the last time to help the disadvantaged economy of the Tuzla Canton, but also the FBiH and the whole BiH.

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7) *Revitalization Program of the Business of "Konjuh" Inc. Zivinice*. (July 2012). Document prepared by the Supervisory Board and the Management Board of the Company and created by the help of external consultants and researchers of the Sarajevo Institute of Economics Legislation.
8) Legislation:
   – Law on Financial Consolidation of Companies in the Federation of Bosnia and Herzegovina ("Official Gazette FBiH" No. 52/14)
   – Law of Bankruptcy Procedure FBiH ("Official Gazette FBiH", No. 29/03, 32/04, and 42/06)

- Law on Tax Administration of the Federation of Bosnia and Herzegovina ("Official Gazette FBiH", No. 33/02, 28/04, 57/09, 40/10, 27/12, 7/13, 71/14, and 91/15)
- Instructions on Opening and Closing Accounts for Performing Payment Transactions and Keeping Records ("Official Gazette FBiH", No. 55/00, 61/05, and 62/11)
- Regulation on the Procedure of Financial Consolidation ("Official Gazette FBiH", No. 70/14 and 13/15)

Endnotes

1   Law on Financial Consolidation of Economic Companies in the Federation of Bosnia and Herzegovina ("Official Gazette F BiH", No. 52/14)
2   Article 17, ZFKPD FBiH
3   Strongly defined deadline article 8, paragraph 1, and pt. 5, ZFKPDFBiH - the duration of the process of financial consolidation for companies with the majority share of state capital.
4   Capital ratio "TTU"Inc. - on the basis of case study - case from "TTU"Inc. - submitted material to Tuzla Canton Government to analyze the situation of 31/12/2013
5   Conclusion of the Government, dated 3/3/2015 (No. 02/1-05-008261/15) and 17/03/2015 (No. 02/1-14-1606/15)
6   Law on Tax Administration of the Federation of Bosnia and Herzegovina, "Official Gazette F BiH", No. 33/02, 28/04, 57/09, 40/10, 27/12, 7/13, 71/14, and 91/15. The problem has been overcome with the help of the new provision in the Tax Administration Act of 2015. Extremely, the provision of paragraph 1 of this article does not apply to matters governed by the Law on Collecting and Partial Dismissal of Collective Debt ("Official Gazette of F BiH", No. 37/14), Law on the amount of default interest on public revenues ("Official Gazette F BiH", No. 48/01, 52/01, and 42/06), *The Law on Financial Consolidation of Economic Companies in the Federation of Bosnia and Herzegovina* ("Official Gazette F BiH", No. 52/14).
7   A moment of actuality reflects the state of submission of a company request for a financial consolidation process, which was temporal.
8   Article 5, paragrah 2, of the "*Guidelines on opening, closing accounts for performing payment transactions and keeping records*"
9   ZFKPDBiH, article 8, paragraph 5
10 Decision on Decommissioning of Decision on Financial Consolidation "TTU" Inc. Tuzla, No. 02/1-14-13416/15, dated 27/05/2015
11 Law of Bankruptcy Procedure FBiH, article 6.
12 "... The bankruptcy proceedings are opened on 05/11/2015 at 12.00 am, when the decision to open a fraudulent proceeding stands out in the Appellate Panel of the Court. Announcement on opening bankruptcy proceedings will be announced in "Official Gazette F BiH" – Decision of the Tuzla Municipal Court on opening of bankruptcy proceedings in "TTU" Inc..Tuzla, No. 32 0 St 244441 15, dated 05/11/2015.
13 Law of Bankruptcy Procedure FBiH, article 49, paragraph, 1, p. 1
14 Government decision, No. 02/1-02-3414/15, dated 03/02/2015
15 Conclusion of the Government, No. 02/1-02-3414-1/15
16 For the realization of the previous procedure, an advance was approved in the amount of BAM 5,000.00, with the Decision of 08/01/2016 - Decision of the Ministry of Industry, Energy and Mining Tuzla Canton on the Approval of Financial Resources for "Elektromontaza" Ltd. Tuzla, No. 03/1-14-29852/15 dated 08/01/2016.
17 ZOSP FBiH, articles 4 and 6.

18   Decision of the Municipal Court in Tuzla No. 032/0-Reg-08-001668, dated 12/01/2009 - the name change of the company was entered, so that the full name of the company reads the company "Rudnik soli Tuzla" Inc. Tuzla.

19   The Commission for analysis of the requirements of the company "Rudnik soli Tuzla" Inc. Tuzla for financial consolidation, dated 29/12/2014, No. 14-29787/14.

20   Article 2, Regulation of financial consolidation process ("Official Gazette of F BiH", No. 70/14 and 13/15)

21   Decision on Financial Consolidation of the company "Rudnik soli Tuzla" Inc. Tuzla, No. 02/1-14-29787/14, dated 20/01/2015.

22   Article 4, ZFKPD FBiH in connection with article 13, Regulation on the Procedure of Financial Consolidation of Economic Companies in FBiH

23   Article 3, paragraph 1, ZFKPDFBiH and articles 5 and 9, Regulation on the Procedure of Financial Consolidation of Economic Companies in FBiH ("Official Gazette of F BiH", No. 70/14 and 13/15)

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DEFERRED TAX IN THE RETAIL TRADE

ODLOŽENI POREZI U MALOPRODAJI

Abstract

The issue of deferred taxes (deferred tax assets and deferred tax liabilities) have been intensively analysed from different perspectives. However, there is almost no paper entirely devoted to the analysis of the effects of deferred taxes on the performance of trade enterprises. Regarding this fact we attempt to conduct thorough analysis of the impact of deferred taxes on the performance of trading companies, with special insight into Serbia. Empirical analysis shows that deferred taxes are significant factor of performance of trading companies in countries with developed market economy, what is also the case with trade companies in Serbia. All this suggests that managers of trading companies must efficiently manage deferred taxes (net deferred tax assets (liabilities)) in order to achieve the target profit.

Keywords: deferred tax assets, deferred tax liabilities, the effective tax rate, evaluation and effects, profit

JEL: H26, L81, M41

Sažetak

Problematika odloženih poreza (odložena poreska sredstva i odložene poreske obaveze) u novije vreme sve se više istražuje iz različitih uglova. Međutim, vrlo je malo, bolje rečeno gotovo da nema cjelovitog rada posvećenog analizi efekata odloženih poreza na performanse trgovinskih preduzeća. S obzirom na to, u ovom radu se pokušava izvršiti kompleksna analiza uticaja odloženih poreza na performanse trgovinskih kompanija, s posebnim osvrtom na Srbiju. Empirijska analiza pokazuje da su odloženi porezi sve značajniji faktor performansi trgovinskih preduzeća u zemljama razvijene tržišne ekonomije. To je slučaj i sa trgovinskim preduzećima u Srbiji. Sve to ukazuje na činjenicu da menadžeri trgovinskih preduzeća (uključujući i Srbiju) moraju što efikasnije da upravljaju odloženim porezima (neto odložena poreska sredstva/obaveze) u svrhu ostvarenja ciljnog profita.

Ključne riječi: odložena poreska sredstva, odložene poreske obaveze, efektivna poreska stopa, vrednovanje i efekti, profit

JEL: H26, L81, M41

1. Introduction

Close attention has been paid to the issue of deferred taxes (deferred tax assets and deferred tax liabilities). It is being investigated from different perspectives, one of which is: evaluation and effects of deferred taxes on performance of trade companies and it is considered to be fairly recent. Due to this, the subject of this research is evaluation and the effects of deferred taxes on the performance of trade companies, with special insight into Serbia. The aim of the research is to investigate the issue of deferred taxes on the performance of trade companies in Serbia. This should provide an adequate basis for managers to efficiently manage the effects of deferred taxes on the performance of trade companies (in order to achieve the target profit). Also, this work should provide adequate theoretical, methodological and empirical material for further study of this current, significant and complex issue, with special insight into the analysis of the specificity of trade companies. In the context of the analysis of the treated issue we stress the fact that "deferred tax liabilities" essentially have all the attributes of the "legal" tax evasion. In this we find a reflection of scientific and professional contribution of this paper.

Extensive literature has been devoted to general problems of the valuation and the effects of deferred taxes on performance of companies (Chludek,

2011; Acheampong, Valencia & Volkan, 2013; Fischer, 2016; Baunman, 2016; Capkun, 2016) in certain countries (Vučković-Milutinović & Lukić, 2013, Purina, 2016). However, almost no work has been as a whole devoted to the analysis of the impact of deferred taxes on value and performance of companies in service sector (Skinner, 2008; Lukić, 2016), especially in trade (Nicker, 2014). In this we also find reflection of scientific and professional contribution of this paper.

Special scientific contribution of this work is reflected in the fact that it highlights the importance of continuous research (theoretical, methodological and empirical) of evaluation issues and the effects of deferred taxes on the performance of retail companies. In this context, we should bear in mind the fact that, as far as we know, the issue of evaluation and the effects of deferred taxes on the performance of trading companies in Serbia are being thoroughly researched for the first time. The obtained results are the basis for further theoretical, methodological and empirical research of this current, significant and complex issue in order to achieve the target profit of trading companies. Managers of trade companies in Serbia suggest that we should pay special attention to issues of tax planning and, in that context, management of the effects of deferred taxes in order to achieve our objectives in terms of business efficiency in very complex, dynamic and competitive business conditions.

The problem of deferred taxes is being recently researched through different hypotheses. The primary hypothesis of this study is: deferred taxes are important factor in the performance of global retailers. In this work and in accordance with the subject, objective and purpose of the research, it is tested on the example of trading companies and retailers in Serbia. The results of comparative and statistical (correlation and regression) research confirm given hypothesis. In tune with the defined research hypothesis, we applied adequate research methodology. It is primarily based on a comparative analysis, ratio analysis and statistical analysis. Time series are adjusted to the specifics of the issue treated in this paper.

For the purposes of the empirical research of effects of deferred taxes on performance of trade companies in this study we used original data from different sources. For global retailers, primary sources of data are officially published audited annual financial statements. Primary data for trading companies in Serbia were taken from the Business Registers Agency of the Republic of Serbia. The data collected on deferred taxes from primary

sources were secondary processed in a manner that is consistent with the object and the purpose of the research in this paper. The primary limitation of the study in this paper is different practice of evaluation of deferred taxes as a factor of performance in individual retail companies, due to the application of the "different" normative (legal) regulations. This hinders their "total" comparability. Nevertheless, the comparability in this paper is largely achieved because data on deferred taxes were, as much as possible, collected from the same sources for all analyzed global retail companies. In the future, greater attention should be paid to the impact of deferred taxes on the performance of retail companies. For the purpose of thorough research of the problem of deferred taxes in commercial enterprises, it is necessary to develop a unified system of comparative analysis, uniform survey methodology and harmonize regulations. The ultimate effects of this are far more reliable findings on the effects of deferred taxes on the performance of retail companies.

2. Effective tax rate

The effective tax rate is the main indicator of the impact of taxes on the performance (result) of company. It is calculated as the ratio between taxes on profit and profit before tax, *i.e.*:

$$\text{Effective tax rate} = \text{Tax on profit} / \text{Profit before tax}$$

The effective tax rate differs among economic sectors and companies, including trading. Table 1 shows the average effective tax rate (for three years) for retail sector.

Table 1. *The effective tax rate in retail sector*

Year	Effective tax rate
1. All analysed retail companies	
2012-2013	32.9%
2013-2014	31.9%
2014-2015	32.5%
Average	32.4%
Domestic retail companies	
2012-2013	34.8%
2013-2014	35.0%
2014-2015	34.9%

Average	34.9%
International retail companies	
2012-2013	28.6%
2013-2014	24.2%
2014-2015	25.6%
Average	26.1%
2. Retail companies in America	
American retail companies	
2012-2013	37.0%
2013-2014	36.4%
2014-2015	36.8%
Average	36.7%
Non-American retail companies	
2012-2013	25.6%
2013-2014	22.8%
2014-2015	24.7%
Average	24.3%

Source: PwC (January 2016). Available at: https://www.pwc.com/gx/en/retail-consumer/pdf/Tax-rate-benchmarking-study-retail.pdf (Accessed: January 16, 2017)

The data presented in Table 1 show that the average effective tax rate in retail sector is at 32.4%. The average effective tax rate in retail is higher than in many other comparable economic sectors (PwC, 2016). In general, the average effective tax rate of domestic is higher (8.8%) compared to the international retail companies. In this respect, the situation is similar in America – for example, the average effective tax rate of American companies is higher (12.4%) compared to non-US retailers. Continuous empirical research has found that "profitable" retailers have average effective tax rate at about 33% (PwC, 2016). It is used as a "standard" in the comparative analysis of retail companies.

3. The analysis of deferred tax of selected retailers

Table 2 shows deferred tax assets and deferred tax liabilities as well as compatible components of selected (global) retailers in 2015.

Table 2. *Deferred tax assets and deferred tax liabilities, and compatible components of selected retailers, 2015 (in million USD)*

	Total assets	Deferred tax assets	Deferred tax liabilities	Net deferred tax assets (liabilities)	Capital	Profit before tax	Tax on profit	Net profit
WalMart	203.71B	4.67b	1.03B	3.64BB	85.94B	24.8B	7.99B	16.18B
Home Depot	39.95B	642M	51M	591M	9.32B	9.98B	3.63B	6.35B
Costco	33.44B	462M	109M	353M	10.84B	3.6B	1.2B	2.38B
Target	41.17B	1.16B	-	1.16B	14B	3.65B	1.2B	9.45B
Tesco	421.69M	12.29M	13.97M	(1.68M)	374.95M	(118.41M)	15.34M	(113.75M)
Marks&Spencer	8.2B	315M	1.2M	314M	3.2B	600M	118.3M	486.5M

Source: http://www.marketwatch.com/ (Accessed: January 19, 2017)

In all observed retail companies, except Tesco, deferred tax assets are higher than the deferred tax liabilities. In other words, the company Tesco partly used assets of this type to finance its retail activities. In order to gain a better idea about the place, role and importance of deferred taxes, Table 3 shows the indicators of deferred taxes of selected (global) retailers for 2015.

Table 3. *Indicators of deferred taxes of selective retailers in 2015*

	Deferred tax assets / Total assets	Deferred tax liabilities/ Total assets	Deferred tax assets/ Profit before tax	Deferred tax liabilities/ Profit before tax	Effective tax rate (Profit tax/ Profit before tax x 100)	Return on assets (Net profit/ Assets)
WalMart	0.023	0.005	0.188	0.041	32.21%	0.188 (18.8%)
Home Depot	0.016	0.001	0.064	0.005	36.37%	0.681 (68.1%)
Costco	0.014	0.003	0.128	0.030	33.33%	0.219 (21.9%)
Target	0.028	-	0.318	-	32.88%	0.675 (67.5%)
Tesco	0.029	0.033	(0.104)	(0.118)	(12.95%)	0.357 (35.7%)
Marks&Spencer	0.038	0.000	0.528	0.002	19.72%	0.152 (15.2%)

Note: Calculation performed by the authors

Source: http://www.marketwatch.com/ (Accessed: January 19, 2017)

The data in Table 3 show that as a percentage of assets, deferred tax assets range from 1.4% (Costco) to 3.8% (Marks & Spencer). Deferred tax liabilities as a percentage of assets range from 0.00% (Marks & Spencer) to 3.3% (Tesco). Effective tax rate varies in individual retail companies. It is lower in the UK (Tesco and Marks & Spencer) compared to the rest of the observed (US) retailers (at the average for the retail sector 33%).In further presentations of the treated issue, because of the importance and complexity, we will take a closer look at the effects of deferred taxes on the performance of selected retailers. Table 4 shows the dynamics of the effective tax rate of global retailer Wal-Mart for the period 2011-2016.

Table 4. *The effective tax rate Wal-Mart, 2011-2016*

	January 31, 2011	January 31, 2012	January 31, 2013	January 31, 2014	January 31, 2015	January 31, 2016
Effective tax rate	32.20%	32.60%	31.00%	32.90%	32.20%	30.30%

Source: https://www.stock-analysis-on.net/NYSE/Company/Wal-Mart-Stores-Inc/Analysis/Income-Taxes (Accessed: January 17, 2017)

The effective tax rate in Wal-Mart is, therefore, slightly greater than 30%, i. e. slightly less than the average (33%). This was also reflected on its overall economic performance. In order to give more complex analysis of the effects of deferred taxes, Table 5 shows the components of deferred tax assets and deferred tax liabilities in Wal-Mart for the period 2011-2016.

Table 5. *Components of deferred tax assets and deferred tax liabilities in Wal-Mart, 2011-2016*

(in million USD)

	January 2011	January 2012	January 2013	January 2014	January 2015	January 2016
Loss and tax credit carryforwards	2.968	2.996	3.525	3.566	3.253	3.313
Accrued liabilities	3.532	2.949	2.683	2.986	3.395	3.763
Share-based compensation	332	376	204	126	184	192
Other	708	1.029	1.500	1.573	1.119	1.390
Deferred tax assets	7.540	7.350	7.912	8.251	7.953	8.658
Valuation allowances	(20899)	(2.528)	(2.225)	(1.801)	1.504)	(1.456)
Deferred tax assets, net of valuation allowance	4.641	4.822	5.687	6.450	6.449	7.202

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Property and equipment	(4.848)	(5.891)	(5.830)	(6.295)	(5.972)	(5.813)
Inventories	(1.014)	(1.627)	(1.912)	(1.641)	(1.825)	(1.790)
Other	(474)	(409)	(1.157)	(1.827)	(1.618)	(1.452)
Deferred tax liabilities	(6.336)	(7.927)	(8.899)	(9.763)	(8.415)	(9.055)
Net deferred tax assets (liabilities)	(1.695)	(3.105)	(3.212)	(3.313)	(2.966)	(1.853)

Source: https://www.stock-analysis-on.net/NYSE/Company/Wal-Mart-Stores-Inc/Analysis/Income-Taxes (Accessed: January 17, 2017)

According to the data in the table, it appears that in the analyzed period, deferred tax liability was greater than deferred tax assets in company Wal-Mart. This difference gradually increased until 2015 and then stated to decrease. This had a positive impact on its cash flows, liquidity and solvency, viewed as a "specific" source of financing of retail activities. Tax credits are an important component of deferred tax assets. Thus, for example, in 2015, they participated in total deferred tax assets with 43.46%. In the same year, property and equipment participated in total deferred tax liabilities with 64.19%. Table 6 presents the deferred tax assets and deferred tax liabilities in company Fast Retailing for the period 2012-2016.

Table 6. *Deferred tax assets and deferred tax liabilities in the company Fast Retailing, 2012-2016*

(in million JPY)

	February 2012	February 2013	February 2014	February 2015	February 2016
Deferred tax assets	N.A	15.467	11.257	11.107	44.428
Deferred tax liabilities	N.A	49.752	37.387	47.272	3.809
Net deferred tax assets (liabilities)*	N.A	(34.285)	(26.130)	(36.165)	40.615
Net deferred tax assets (liabilities) from assets, (%)*	N.A	(3.80%)	(2.89%)	(3.11%)	3.28%

Note: * Calculation provided by the authors

Source: http://www.fastretailing.com/eng/ir/financial/bs_5yrs.html (January 17, 2017)

Almost throughout all observed period in the company Fast retailing, net deferred tax is negative (*i.e.* deferred tax liabilities are larger than the deferred tax assets), except for 2016. It ranges from 2.89% to 3.80%, as percentage of the assets, what had a favourable effect on cash flow, as an indicator of liquidity and solvency. The data on deferred tax assets and deferred tax liabilities for the company Ahold are shown in Table 7 (in 2014 and 2015).

Table 7. *Deferred tax assets and deferred tax liabilities in the company Ahold, 2014 and 2015*

(in million EUR)

	2014	2015
Net sales	32.774	38.203
Income taxes	248	224
Share of income taxes on profit in net sales (%)*	0.75%	0.58%
Assets	14.138	15.880
Deferred tax assets	494	628
Net deferred tax assets (liabilities)	344	518
Share of net deferred tax assets (liabilities) in assets (%)*	2.43%	3.26%
Capital	4.844	5.621
Share of net deferred tax assets (liabilities) in capital (%)*	7.10%	9.21%

Note: * Calculation performed by the authors

Source: Ahold Annual Report 2015 https://www.aholddelhaize.com/media/1370/ahold_ar15_fullreport_interactive.pdf (Accessed: January 18, 2017)

The company Ahold has positive net deferred tax (*i.e.* deferred tax assets are higher than the deferred tax liabilities). As percentage of assets it amounted: 2014 – 2.43% and 2015 – 3.26%; and of capital 2014 – 7.10% and 2015 – 9.21%. Therefore, the share is approximately at the same level as of other comparable retailers. Table 8 presents the deferred tax assets and deferred tax liabilities in Ahold Delhaize company for the period 2013-2015, because it operates in Serbia under the name of Delhaize Serbia, and in line with the primary objective of this study: evaluation of the effects of deferred tax performance of trading companies in Serbia.

Table 8. *Deferred tax assets and deferred tax liabilities in company Delhaize Ahold, 2013-2015*

(in million EUR)

	2013	2014	2015
Revenues	20.593	21.361	24.395
Income tax expenses	85	66	97
Income tax expenses share in revenues, (%)*	0.41%	0.30%	0.39%
Assets	11.594	12.127	13.032
Deferred tax assets	71	46	81
Deferred tax liabilities	443	302	404
Net deferred tax assets (liabilities)	(372)	(256)	(323)

Share of net deferred tax assets (liabilities) in assets, (%)*	3.20%	2.11%	2.48%
Capital	5.073	5.433	5.231
Share of net deferred tax assets (liabilities) in capital, (%)*	7.33%	4.71%	5.23%

Note: * Calculation performed by the authors

Source: Delhaize Ahold Annual Report 2015 https://www.aholddelhaize com/media/1406/2015_annualreport_en.pdf (Accessed: January 18, 2017)

Therefore, net deferred tax in company Ahold Delhaize is negative. The percentage of the assets ranges from 2.11% up to 3.20%, and from the capital from 4.71% to 7.33%. The company Delhaize Ahold partially uses deferred tax as a separate source of funding for its retail activities.

4. Deferred tax in trade of Serbia

By using regression analysis, we will take a closer look at the impact of deferred tax on the return on capital of trade in Serbia. The model of multiple regression analysis is as follows:

$$Y = a_o + a_1x_1 + a_2x_2 + a_3x_3 + a_4X_4 + a_5X_5 + \varepsilon$$

where is as follows: Y = the return on capital, X_1 = the ratio between the deferred tax assets and total assets, X_2 = the ratio between the deferred tax liabilities and total assets, X_3 = ratio between deferred tax assets and profit before taxes, X_4 = ratio between deferred tax liabilities and profit before tax, X_5 = effective tax rate, and ε = statistical error.

The results of regression analysis of deferred tax of trade in Serbia for the period 2007-2015 show that the impact of deferred tax on the return on capital in trade of Serbia (coefficient of determination R Square, 985) was significant. The presented regression model of analysis of impact of deferred tax on yield of capital indicators in trade of Serbia was good (F 39,179; p <0.05). The efficient management of deferred taxes can have a significant impact on increasing the return on capital of trade in Serbia. This especially applies to deferred tax assets (*i.e.* the indicator between deferred tax assets and total assets, or deferred tax assets/total assets, t 8,014, Sig., 004). In order to provide more complex analysis of the issue in this paper, Table 9 shows the deferred tax for five biggest trade companies in Serbia in 2015.

Table 9. *Deferred tax assets and deferred tax liabilities (and compatible components of selected retailers in Serbia, 2015 (in million RSD)*

	Total assets	Deferred tax assets	Deferred tax liabilities	Net deferred tax assets (liabilities)*	Capital	Profit before tax	Tax on profit	Net profit
Mercator-S	74.330	-	380	(380)	22.451	490	107	381
Delhaize Serbia	73.304	584	-	584	47.353	3.413	519	2.894
Nelt Co. Doo	20.723	18	284	(266)	11.258	1.196	83	1.119
Knez Petrol	5.666	3	-	3	1.411	360	49	312
OMV Srbija	10.851	569	-	569	6.676	842	319	1.011

Note: Calculation performed by the authors

Source: Business Registers Agency of the Republic of Serbia

The data in the table show that the companies Mercator-S and Nelt Co. have negative deferred taxes, and the other have positive. It has adequately reflected on their performance. Table 10 present indicators of deferred taxes of observed retailers in 2015.

Table 10. *Indicators of deferred taxes of selected retailers in Serbia, 2015*

	Deferred tax assets/ Total assets	Deferred tax liabili- ties/Total assets	Deferred tax assets / Profit before tax	Deferred tax liabilities / Profit before tax	Effective tax rate (Tax on profit/Profit before tax x 100)	Return on capital (Net profit/Capital)
Mercator-S	-	0.005	-	0.775	21.83%	0.017 (1.7%)
Delhaize serbia	0.008	-	0.171	-	15.21%	0.061 (6.1%)
Nelt Co. Doo	0.001	0.014	0.015	0.237	6.94%	0.099 (9.9%)
Knez Petrol	0.001	-	0.008	-	13.61%	0.221 (22.1%)
OMV Srbija	0.052	-	0.676	-	37.88%	0.151 (15.1%)

Note: Calculation performed by the authors

Source: Business Registers Agency of the Republic of Serbia

Data in the table show that all retailers, except OMV Serbia, have lower effective tax rate compared to global retailers (*i.e.* a standard of 33%). It adequately reflected on their performance. All in all, more efficient management of deferred taxes can have a significant impact on improving the performance (return on equity) of total trade in Serbia, as well as individual retailers.

5. Conclusion

The impact of deferred taxes on the performance of trading companies is becoming more significant. This is proven by the results of analysis in this paper, based on the examples of global retailers, and especially trade companies in Serbia. The effective tax rate, as an indicator of performance, differs among trading companies. On average – for trade sector – it is 33%. In general, it is specific that the effective tax rate was significantly lower in domestic than in the international retail companies (showed by the data on America). It is lower in trading companies in Serbia than in countries with developed market economy.

Deferred tax is in many (retail) companies used as a source of trade activities financing, such as in trading companies in Serbia. In connection with deferred tax, it should be generally borne in mind that: deferred tax liabilities represent a sort of "legal" tax evasion and source of (retail) activities financing.

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MARKETING

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RESEARCH OF CONSUMER TRENDS IN THE PURCHASING DECISION-MAKING PROCESS

ISTRAŽIVANJE POTROŠAČKIH TRENDOVA U PROCESU DONOŠENJA ODLUKE O KUPOVINI

Abstract

This paper explores contemporary trends of consumer behaviour on the market and changes in behavioural habits and styles in a decision-making process. The accent is also on the gender-based differences in consumer gender and in their decision-making styles. By analysing current market trends and patterns of the consumer behaviour, the goal is to determine whether and how these trends affect changes in the patterns of modern consumer behaviour. The survey was conducted by using a questionnaire. The structured questionnaire was used on a random sample of consumers.
Consumer decision styles determine the way of consumer decision in purchasing and they are relatively stable. However, under the influence of market changes and contemporary trends, they are also changeable. Demographic changes, as well as a consumer lifestyle changes, affect changes in consumer decision-making styles and shopping habits.
The research results indicate significant differences in consumer purchase decision-making between different genders. The research shows that significant differences exist between women`s shopping behaviour and men`s shopping behaviour through several dimensions of decision-making styles: brand preference, price sensitivity, shopping preference for fun and relaxation, tendency to fashion trends, tendency to modern shopping. The research results can help businesses to understand consumer behaviour and to predict consumer needs, as well as their purchasing habits. In that way they can adapt their offer, sales and promotions to the targeted consumer segment and, therefore, face the market challenges easier.

Keywords: consumer trends, purchasing decision, decision style, habits

JEL: M31, M37, Z13

Sažetak

U ovom radu istražuju se savremeni trendovi ponašanja potrošača na tržištu te promjene u ponašanju navikama i stilovima u procesu donošenja odluke o kupovini. Naglasak je također na razlikama u ponašanju potrošača pripadnika različitog spola i njihovim stilovima odlučivanja. Analizom aktuelnih tržišnih trendova i obrazaca ponašanja potrošača cilj je utvrditi da li i na koji način ti trendovi utiču na promjenu obrazaca ponašanja savremenog potrošača. Istraživanje je provedeno primjenom anketnog upitnika. Na slučajnom uzorku potrošača primijenjen je strukturirani anketni upitnik.

Stilovi odlučivanja potrošača determiniraju način odlučivanja potrošača pri kupovini i relativno su stabilni, međutim pod utjecajem tržišnih promjena i savremenih trendova i oni su podložni izmjenama. Demografske promjene kao i promjene načina života potrošača utječu na promjene stila odlučivanja i navika pri kupovini. Rezultati istraživanja ukazuju na znatne razlike u načinu odlučivanja o kupovini potrošača različitog spola. Istraživanja su pokazala da postoje znatne razlike u ponašanju mukaraca i žena pri kupovini, kroz nekoliko dimenzija stilova odlučivanja: sklonost brendu, osjetljivost na cijene, sklonost kupovini radi zabave i opuštanja, sklonost praćenju modnih trendova, sklonost savremenim načinima kupovine. Rezultati istraživanja mogu pomoći poduzećima da lakše razumiju promjene u ponašanju potrošača, te predvide potrebe potrošača, kao i navike pri kupovini, kako bi uskladili svoju ponudu, način prodaje i promocije ciljnom segmetnu potrošača, te kako bi se što lakše suočili za tržišnim izazovima.

Ključne riječi: potrošački trendovi, kupovna odluka, silovi odlučivanja, navike

JEL: M31, M37, Z13

1. Introduction

The study of consumer behaviour and consumer psychology significantly influences the ability to estimate and predict needs and desires of the targeted consumer segment. The central category in the marketing management process is exactly the area of consumer behaviour which studies the whole purchasing decision-making process with all factors which influence consumer behaviour and final decision. The aim of this research is to determine what are the key trends and changes in the final decision-making process of purchasing products or services, and to explore how modern technology has changes consumer behaviour, shopping habits, and the way of thinking. The purpose of the research is to point the significant changes that have arisen in the process of making decision to buy or not, with emphasis on impact on changes in the environment, and especially the impact of modern technologies.

Consumer behaviour is a complex area which is studied by marketing experts. With the advancement and development of modern technology, the initial model of consumer behaviour is changing considerably, but also the way of purchasing decision-making process we know from previous literature that deals with this theme. Modern technology allows consumers to get a lot of information about the requested product or service in a very short time and with very low costs with just one click or touch screen. That way, the complete purchasing decision-making process is shortening significantly. A significant change in the traditional purchasing style can be expected in the near future due to the rapidly advancing technology.

2. Theoretical background

It is not possible to achieve long-term success in sales of products or services without continuously studying and analysing consumer behaviour. It can be said that consumer behaviour implies the process of making a decision about buying a product or service, as well as the effect of different factors on the purchasing decision-making process. The whole set of factors, which affect consumers in the decision-making process of choosing a product or service that will satisfy consumer needs, is included in the decision-making process.

According to Kotler and Kotler (2015, p. 37) customers who are buying a particular product or service for the first time, do it with certain expectations about the product/service - but also about the company that offers them. Consumer behaviour is influenced by the personal characteristics of each individual and by the surrounding environment. Thus it is not a simple causality, but a mutual determinism in which behaviour, personal characteristics and environment are causes and consequences to each other at the same time (Milas, 2007, p. 55). Group determinants are cultural and social influences, while individual determinants represent the personal and demographic characteristics of the individual as well as the psychological characteristics (Čičić, Husić & Kukić, 2009, p. 23). According to Solomon *et al*. (2006, p. 33) the field of consumer behaviour convers a lot of ground: it is the study of the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy needs and desires. According to Kesić (1999, p.16) consumer behaviour is the process of obtaining and consuming products, services and ideas from the consumer unit, and includes after-sales processes that include valuation and post-sales behaviour. Tihi, Čičić and Brkić (2006, p. 156) define consumer

behaviour as a decision-making process and action of individual consumers in the purchasing process and in the process of using the product.

Making a decision is always a trade-off between at least two choices. People daily make a lot of decisions. Some of them we make without even thinking, while the other more important decisions we make after a lot of thinking and choosing the best alternative. According to Grbac and Meler (2007, p. 13), entrepreneurial entities are in the search for new types of behaviour and a new way of making a purchasing decision, because only the combination of the knowledge of other's needs, wishes and behaviours makes a good background for accomplishing advantages and successful business. Market entities are adapting to new circumstances with the goal to keep the existing and attract new consumers, since they are the only source of income necessary for further development (Grbac, Dlačić & First, 2008, p. 40).

Since it is much more expensive to attract new consumers than to keep the already existing ones, it is very important that the consumer is satisfied after a new purchase and usage of the chosen item. Nowadays, the process of purchase is constantly changing under the influence of modern technologies which are completely changing the way the consumers are thinking, as well as their decision-making process and purchase. In the new conditions of doing business on the market, the imperative is to respect the end-consumers we sell our products and services to. In order to better understand what is happening in the relationships with the consumers, one needs to know the trends that he has to deal with.

According to Kotler (2001, pp. 26-38), the most affective ones are related to:
- More attention on the quality, value and satisfaction of consumers / customers;
- More attention on building relationships and keeping consumers/customers;
- More attention on global thinking and planning of local markets;
- More attention on building strategic alliances and networks;
- More attention on direct and online business;
- More attention on providing additional services;
- More attention on high technology industries;
- More attention on ethical behaviour in doing business.

In addition to the already mentioned ones, the same author (Kotler, 2004, pp. 189-190) highlights the following trends:
- From business that has manufacturing and selling in the focus towards the business that's focused on judgements and reactions,

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- From the focus of attracting consumers/customers towards the focus of keeping the same ones,
- From the aspiration to conquer the market's share towards the aspiration of concurring the consumers part,
- From a monologue towards a consumers dialogue,
- From mass marketing towards adjusted marketing,
- From owning property to owning brands,
- From the market activity towards the online activity,
- From one way marketing towards branched marketing,
- From business focused on the product towards business focused on the consumer.

Kovač Žnideršić and Marić (2007) highlight just a few modern trends of consumers' behaviour which represent the symbols of the consumer society. They are:
- Knowledge of the consumer – exceptional infirmity of the consumers and knowledge that they have regarding the products and things that they're offering;
- Recreational purchasing – modern, personal purchase in all of its variations;
- Experimental consumption – consumers constantly search for newer and better experiences and uncertainty of purchasing and
- Luxury fever – rapid growth of consuming luxury products and services.

Big advancements in technology, including the sudden growth of the internet, had a strong influence on customers and marketing experts which provide their service to them. For achieving success in that new internet era – even just to survive – marketing experts have to revise their strategies and adjust them to the modern environment (Kotler *et al*., 2006, p. 128).A number of trends seem to be valid for all western European markets. These include (Leeflang & Fred van Raaij, 1995, pp. 373-387):
- A tendency to more unevenly distributed income,
- An increasing number of older people,
- A decrease in household size,
- A growing proportion of immigrants,
- Increase in environmental concern and consumption of "green" products,
- Relatively increasing consumption of services compared to durable goods.

Bijakšić Martinović and Jelčić (2009, pp. 85-90) highlight several marketing trends for increasing sales: sale teams, mystery shopping, key account

management and online sales. According to Grbac (2014, p. 211) organisations are exposed to turbulent changes caused by a scientific and technological revolution focused on reindustrialization and the introduction of IT in operations, overall resulting in radical changes in wholesaling. Bijakšić Martinović (2014, p. 109) highlights the role of introducing applications to distribution and sales, and also states that a big number of consumers use smartphones or tablets and bring them when going shopping. According to Euromonitor (2012) data, the latest global consumer trends are: the search for value, a more cautious approach to credit, people power, multicultural consumerism, the fight against obesity, new attitudes towards growing old, experience-based consumption, the rise in social responsibility, the chemical backlash and mobile cocooning.

The latest statistical data for Bosnia and Herzegovina, which are related to economy and consumers, are given in the two tables below.

Table 1. *Economies of BiH and consumers in Bosnia and Herzegovina*

	2011	**2012**	**2013**	**2014**	**2015**	**2016**
GPD (USD million)	18,632.9	17,227.1	18,179.0	18,558.7	16,209.8	16,613.5
Real GDP Growth (% growth)	0.9	-0.7	2.3	1.2	3.1	2.1
Inflation (% growth)	3.7	2.1	-0.1	-0.9	-1.0	-1.1
Unemployment Rate (% of economically active population)	27.6	28.1	27.4	27.5	27.7	25.4
Exchange Rates Against US Dollar (BAM per USD)	1.4	1.5	1.5	1,5	1.8	1.8

Source: Euromonitor, 2016a

Table 2. *Consumers in Bosnia and Herzegovina*

	2011	**2012**	**2013**	**2014**	**2015**	**2016**
Total Population ('000)	3,558.2	3,539.3	3,531.2	3,526.0	3,518.0	3,507.1
Median Age of Population (years)	40.2	40.6	41.0	41.4	41.8	42.2
Number of Households ('000)	1,156.5	1,154.3	1,155.7	1,157.9	1,159.0	1,158.8
Consumer Expenditure (USD million)	16,142.5	15,180.2	15,757.5	16,022.6	13,583.4	13,786.0
Internet Users ('000)	1,624.1	1,785.9	1,953.2	2,054.5	2,196.0	2,334.1

Source: Euromonitor, 2016a

If we look at the latest trends of consumer demographics in Bosnia and Herzegovina, based on the report of Euromonitor (2017), we can distinguish the following: in 2030, the population of Bosnia-Herzegovina will fall to 3.6 million, a decrease of 5.0% from 2012. The population will shrink in 2012-2030 due to negative net migration, a declining number of births and an increasing number of deaths. Meanwhile, the population will be ageing rapidly and by 2030 Bosnia-Herzegovina will be the 10th oldest country in the world. The biggest city in 2012 was Sarajevo and will remain so in 2030 when its population will account for 19.3% of the urban population.

Table 3. *Consumer trends in five different countries*

Country	Top five consumer trends
Germany	• Consumer confidence remains strong, spurring spending • Cash still preferred by consumers when shopping but credit card use rising • Ethical and health issues influence consumer food choices • Bucking recent trends, today's Teens seeking to enter 'mainstream' rather than rebel • Consumers take advantage of low interest rates to drive rise in home ownership
Turkey	• Strong consumer spending bolstered by credit purchases • Online shopping is growing • International travel increasingly popular amongst consumers • A new generation of homeowners • Consumers changing eating habits, continue to gain unwanted weight
Austria	• Consumer sentiment rebounds • Consumers still enjoy their vacations despite economic and political uncertainty • Consumers embrace cross-border online shopping • Cash is still king for many, but consumers increasingly turning to new payment methods • Relatively affluent Later-Lifers are active consumers
Sweden	• Consumers remain optimistic amidst growing levels of income (and spending) • Home prices soar as demand outstrips supply • Consumers embrace modern payment methods • The sustainable, sharing economy • The move towards 6-hour work days
Italy	• Following years of cost cutting, consumers cautiously resume spending • Smartphones drive growth in internet use • Food shopping habits change as the number of Mediterranean diet followers decline • High number of young adults still live with mother and father • Aging population to drive increased demand for specialist products and services

Source: Euromonitor, 2016b

Table 3 shows consumers trends in couple of countries. If we look that generally, trends show the increase of the Internet and phones as consumer goods that ease the whole process of purchase; bigger use of modern paying methods; change of eating habits and the aging of the population.

3. Methodology, research results and discussion

The research was realized by using and online questionnaire. The questionnaire consisted of open and closed question types. An adjusted Consumer Style Inventory with a list of claims and different degrees of agreement in a form of Likert scale (1 – Strongly disagree, up to 5 – Strongly agree), was used for the research of the opinions and habits of consumers. A sample for this research were mostly students and other respondents of different demographic characteristics which you can find in BiH and EU (n=101).

Empirical research is based on an online questionnaire, which was meant to be filled out by students on different types of university, but also by other people that are not students. It is made out of 3 sections, in this paper the third section is analysed which referred to ways and habits during purchasing under the influences of modern trends.

Table 4. *Sample structure*

Features	N	(%)
Gender		
Male	33	32.7
Female	68	67.3
Age group		
18 – 23	42	41.6
24 – 29	36	35.6
30 – 35	10	9.9
36 – 40	4	4
41 – 45	4	4
46+	5	5
Geographical area		
Bosnia i Herzegovina	70	69.3
EU	31	30.7
Monthly income		

do 400 €	36	43.9
450 – 600 €	16	19.5
650 – 800 €	5	6.1
above 800 €	25	30.5
Marital status		
Single	40	39.6
Married	25	24.8
In a relationship	36	35.6
Current status		
Employed	30	29.7
Unemployed	11	10.9
Student	60	59.4
Student status		
First year Bachelor's student	15	25
Second year Bachelor's student	7	11.7
Third year Bachelor's student	8	13.3
Final year Bachelor's student	17	28.3
Master's degree	11	18.3
PhD	2	3.3

Source: Authors' research

The gathered information were analysed using many statistical methods. The reliability of the measuring scale is tested using Cronbach's alpha coefficient. Descriptive analysis in terms of frequencies and percentage is used to revise the sample and answers of all participants. The total number of participants is 101, from which 68 are the female respondents, which makes 67.3% of total answers, and the remaining 33 are the male respondents, which is 32.7% total answers.

The majority questions were answered by the student population from 18 to 23 years, which represents 41.6% of the total number of answers, followed by the students that were getting their master's degree in the age group of 24 to 29 years, which represents 35.6% of the total number of answers.

The third section of the online poll refers to modern trends and consumption, so from the following table the information on how the participants answered to the claims can be seen.

Table 5. *Social networks and Internet in general are a big income of information which help out during making a decision about a purchase*

| | Gender | | Total N | % of Total |
	Male	Female		
Strongly disagree	1	5	6	5.94
Disagree	2	4	6	5.94
Neither agree nor disagree	6	10	16	15.84
Agree	8	27	35	34.65
Strongly agree	16	22	38	37.62

Source: Authors' research

72.27% of the total number of participants agreed on the claim "Social networks and Internet in general are a big income of information which help out during making a decision about a purchase", which points out the increase of the importance of Internet as a source of information, but also including the opinions on other products and services which can be seen on social networks, comments, reviews and similar.

Table 6. *Modern technology makes purchasing process faster and easier*

| | Gender | | Total N | % of Total |
	Male	Female		
Strongly disagree	1	1	2	1.98
Disagree	0	2	2	1.98
Neither agree nor disagree	3	8	11	10.89
Agree	9	21	30	29.70
Strongly agree	20	36	56	55.45

Source: Authors' research

The results of the research confirmed that modern technology makes the process of purchasing much easier and faster, in comparison to the traditional way of purchasing (85.15% of the participants showed high level of agreement with this claim).

Table 7. *I trust more to the recommendations of other consumers that have already tried the product/service rather than the promotional campaign of manufacturers*

	Gender		Total N	% of Total
	Male	Female		
Strongly disagree	2	3	5	4.95
Disagree	3	0	3	2.97
Neither agree nor disagree	13	13	26	25.74
Agree	7	20	27	26.73
Strongly agree	8	32	40	39.60

Source: Authors' research

In comparison to promotional campaigns of manufacturers, the importance of promotion by the "word of mouth" for choosing a product and service is in a big increase. Out of the total number of participants, 66.33% showed a high level of agreement with the claim "I trust more to the recommendations of other consumers that have already tried the product/service rather than the promotional campaign of manufacturers".

According to Kotler *et al*. (2006, p. 138) internet buyers are more and more becoming the creators of information regarding a product. Since more and more consumers are joining interesting groups which mutually exchange information about products on the internet, "internet marketing" represents an additional important influence on the shopping style.

Table 8. *Customer communication significantly influences my final purchase decision through social networks - comments / like-dislike / recommendations for a product or service*

	Gender		Total N	% of Total
	Male	Female		
Strongly disagree	3	5	8	7.92
Disagree	8	9	17	16.83
Neither agree nor disagree	9	25	34	33.66
Agree	9	19	28	27.72
Strongly agree	4	10	14	13.86

Source: Authors' research

Social networks, especially for the student population and younger generations, shape a final shopping decision regarding this particular group of consumers.

A bigger part of the participants in the second phase of shopping first search for comments about products and services on social networks (Facebook, Instagram, Twitter), and then after that step search for other sources of information.
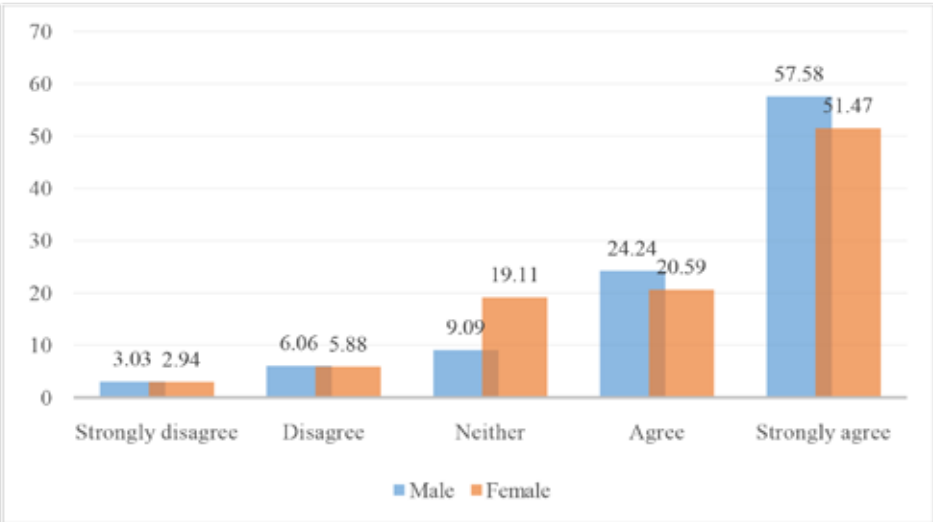
Figure 1. *The Internet is the future of purchasing (express in percentages)*

Source: Authors' research

Table 9. *The demographic trend of aging of the population significantly changes the structure of consumption and the way of purchase*

	Gender		Total N	% of Total
	Male	**Female**		
Strongly disagree	1	0	1	**0.99**
Disagree	1	2	3	**2.97**
Neither agree nor disagree	4	13	17	**16.83**
Agree	10	26	36	**35.64**
Strongly agree	17	27	44	**43.56**

Source: Authors' research

The world trend of aging population is slowly coming to region. Migrations of young people, decreasing number of students in schools, decreasing number of young people at the employment bureau are the everyday news that surround us.

This considerably influences the structure of shopping but also the way of shopping itself. With the claim "Demographic trend of population aging is really changing the structure of consuming and way of shopping", agreed 79.2% of the participants.

4. Conclusion

Doubtless, a profile of a modern consumer in the next upcoming years will change considerably. Modern technology will change the way of shopping and the structure of consuming. It is assumed that consumers will be ready to use all advantages of modern technology to ease their own life and upgrade the quality of living. Consumers should be more informed in the future, much more demanding when it comes to the products (special specifications and even personalization of products and services), much more demanding in the way of adjusting the communication.

Results of the research point to key changes that took place in the decision-making process and how the buying process has changed under the influence of modern technologies in consumer world.

The results have shown that social networks and the Internet in general have become the main source of information when deciding on purchases on which 72.27% of the total number of participants in this questionnaire agreed, because Internet is a source of information and including opinions of other products and services which can be seen on social networks, comments, reviews and similar. People have faster and simpler purchasing process thanks to modern technology, which is showed by 85.15% of the participants which agreed with this claim, because nowadays, people buy more often on the Internet and that way they save their precious time. The next importance of the purchase is significance of consumer's recommendations about the products or services and "mouth to mouth" propaganda. Basically, consumers trust other consumers that have already tried the product/service rather than the promotional campaign of manufacturers. Impact of social networking suggestion and likes or dislikes of a product is growing. That means that consumers first search for comments about products and services on social networks (Facebook, Instagram, Twitter).

As trends that will affect the consumption in the next 5 – 10 years, participants stated an extremely fast progress of technology, digitalization, migration

of young consumers, practical/fast/simple online shopping, robotization, promotion, emigration of young people, free delivery, the possibility of returning the product, internet catalogues, lack of free time requires a much more simple way of shopping such as shopping from your home, aging of the population and so on. The consumer of the future will manage all aspects of life, including shopping, through appliances of the modern technology, mostly smartphones with the access to internet. The internet generation will be the key component of the consumer group.

Certainly, the recommendations for the future research is relate to a wider sample of respondents covering all age consumers, as well as comparing the differences in purchasing trend between the countries in the environment. The focus of the future research could be the influence of social networks to the final decision making process.

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THE RELATIONSHIP BETWEEN E-SATISFACTION AND REPURCHASE INTENTION: E-LOYALTY AS A MODERATOR

ODNOS IZMEĐU E-ZADOVOLJSTVA I NAMJEROM ZA PONOVNU KUPNJU: E-LOJALNOST KAO POSREDNIK

Abstract

Consumer trends are increasing e-commerce, since it is far more convenient to shop online. Regardless of environment, consumers' satisfaction and loyalty play important part in predicting their repurchase intention. Main aim of our research was to empirically test relations between e-satisfaction, e-loyalty and repurchase intention.

Based on an extensive literature review, we have formulated a hypothesis, which we tested in the structural model by using structural equation modelling (SEM). We examined whether e-loyalty mediated the effect of consumers' e-satisfaction on their repurchase intention. The quantitative data for our analysis was collected through a survey on 190 participants from Slovenia.

Results showed that e-loyalty mediated the relationship between e-satisfaction and repurchase intention. Implications for research and practice of our findings are discussed. Researches in the area of online consumers' behaviour are of great importance for researchers and e-retailers. Our research also contributes to the area of online consumers' behaviour together with understanding of the connection between e-satisfaction, e-loyalty and repurchase intention.

Sažetak

Trendovi potrošača povećavaju e-trgovinu, jer je daleko praktičnija kupovina na mreži. Bez obzira na okolinu, zadovoljstvo i odanost potrošača igraju važnu ulogu u predviđanju njihove namjere ponovne kupnje. Glavni cilj našeg istraživanja bio je empirijski ispitati odnose između e-zadovoljstva, e-lojalnosti i namjere ponovne kupnje.

Na temelju opsežnog pregleda literature formulirali smo hipotezu koju smo testirali u strukturnom modelu pomoću modeliranja strukturnih jednadžbi (SEM). Ispitali smo je li ima e-lojalnost učinak posrednika između potrošačkog e-zadovoljstva i njihove namjere za ponovnu kupnju. Kvantitativni podaci za našu analizu prikupljeni su anketom na 190 sudionika iz Slovenije.

Rezultati su pokazali da e-lojalnost ima učinak posrednika na odnos između e-zadovoljstva i namjere za ponovnu kupnju. Razmatrane su implikacije za istraživanje i praksu naših nalaza. Istraživanja na području ponašanja on-line potrošača od velike su važnosti za istraživače i e-trgovce. Naše istraživanje također pridonosi području ponašanja on-line potrošača, zajedno s razumijevanjem veze između e-zadovoljstva, e-lojalnosti i namjere za ponovnu kupnju.

1. Introduction

Internet has emerged, not just as network for sharing information, but also as a useful marketing tool to serve as a platform for domestic and international transactions (Lim *et al*., 2016). This new technological environment has generated a significant change in the behaviour, habits and trends of consumers, which leads to the increase of e-commerce (Fortes & Rita, 2016; Gerrikagoitia *et al*., 2015). The Internet provides a marketplace where buyers and sellers develop transactions directly, interactively, and in real-time beyond the physical limitations of traditional shopping (Hsieh & Liao, 2011; Kiang & Shang, 2015).

Despite the research on the positive effects of e-satisfaction on repurchase intention, there is inconsistency of their relation. Research that goes further than establishing basic direct relations help in understanding the relation between these two constructs. The mediators that help explain the cause-effect relation are less researched and therefor more important for better understanding as well in theory as in practice. To fill this research void, we have to identify and explore the mediators. We believe e-loyalty to be a mediator in the relation between e-satisfaction and repurchase intention.

Our goal is therefore to research the relation between e-satisfaction and repurchase intention, by introducing the moderating role of e-loyalty. The purpose is to fill the void in theoretical research. To achieve our goal we have conducted a quantitative analysis of data collected through an online survey on 190 participants from Slovenia. All three constructs are based on previous research and have already been validated. The hypothesis will be tested by using structural equation modelling (SEM).

Research findings contribute to the existing knowledge e-satisfaction, on e-loyalty and repurchase intention by: expanding the set of research by connecting these constructs in a theoretically backed manner in ways of conceptualization and empirical testing; by including a construct as a mediator instead of testing simply a direct relation; to the best of our knowledge this being the first research linking these three constructs in this way.

2. Literature review

The development of information and communication technology has been fast and furious, which has resulted in the deep infiltration of technology use in almost every aspect of people's daily lives, such as banking transactions, entertainment, and business trade (Cai, Fan & Du, 2017). It has increased interactions in the online environment (Blažun Vošner *et al.*, 2016) and has expanded from a technical level to commercial together with a social level (Zhu *et al.*, 2016). Despite there not being much research on the relation between e-satisfaction and repurchase intention, there are various reasons to support a positive relation. Higher levels of e-satisfaction therefore encourage higher levels of repurchase intentions although the causality is not direct and thereof comes the need for moderating effects to identify contextual factors. The gap is filled by introducing e-loyalty as a moderator in the context of determining the relation between e-satisfaction and repurchase intention as explored further on.

2.1. e-Satisfaction and e-Loyalty

The growth of e-commerce is not likely to abate (Chen, 2012; Lai, 2014; Liao *et al*., 2017; Guritno & Siringoringo, 2013; Pei, Paswan & Yan, 2014; Shiau & Luo, 2012; Sin, Nor & Al-Agaga, 2012), because consumers find it more economical and more convenient to shop online (Hong & Cha, 2013). Satisfaction is an individual's perception and evaluation of a service or product, which is influenced by the individual's unique circumstances such as needs, values and expectations (Sempane, Rieger & Roodt, 2002). It is a specific attitude relating to the reaction an individual has, and if and when customers are not satisfied and they have alternatives, then they will leave. E-satisfaction is therefore the level of contentment with regard to their previous dealings or experiences with e-commerce (Audrain-Pontevia, N'Goala & Poncin, 2013).

Satisfaction is a prerequisite for loyalty. Loyalty is usually seen as a virtue, albeit a problematic one. It is constituted centrally by perseverance in an association to which a person has become intrinsically committed (Kleinig, 2008); e-loyalty has the same meaning in the e-commerce setting. E-loyalty is difficult to achieve (Audrain-Pontevia, N'Goala & Poncin, 2013), but is necessary for all companies involved in e-commerce to retain their customers and promote loyalty (Chen *et al*., 2015). Loyalty is a prerequisite for repurchase intention.

2.2. Repurchase intention

Purchase intention is defined as the decision to act or as a mental stage in the decision making process where the consumer has developed an actual willingness to act towards an object or brand (Wang & Yang, 2008; Wells, Valacich & Hess, 2011). Customer online purchase intention is one of the intensive research areas in e-marketing and e-retail literature (Kwek, Tan & Lau, 2015). Repurchase intention is the intent to keep making the same purchase decisions – intentions to purchase again (Chen *et al*., 2015).

Online purchase intention is the strength of a consumer's intentions to perform a specified purchasing behaviour via Internet (Hsu, Chang & Chen, 2012) in the future (Wu, Yeh & Hsiao, 2011), and it can be classified as one of the components of consumers' cognitive behaviour on how an individual intends to buy a specific brand (Kwek, Tan & Lau, 2015). Online purchase intention is defined as the situation when a customer is willing and intends to

become involved in an online transaction (Pavlou, 2003), and it is led by their emotions (Ha & Lennon, 2010). An increase in purchase intention means an increase of the possibility of purchasing (Schiffman & Kanuk, 2007), but the final decision on accepting to buy a product, or rejecting it, depends on the consumers' intention (Madahi & Sukati, 2012; Wang & Tsai, 2014).

3. Research methodology

3.1. Hypothesis

Based on written above we formulated a hypothesis to determine the relation between e-satisfaction and repurchase intention, where e-loyalty has a moderating effect on their relation. Proposed hypothesis is shown in the conceptual model (Figure 1). The hypothesis is:

H: E-loyalty is a moderator of the relation between e-satisfaction and repurchase intention in a manner that that the effect of e-satisfaction on repurchase intention is higher as the level of e-loyalty higher is.
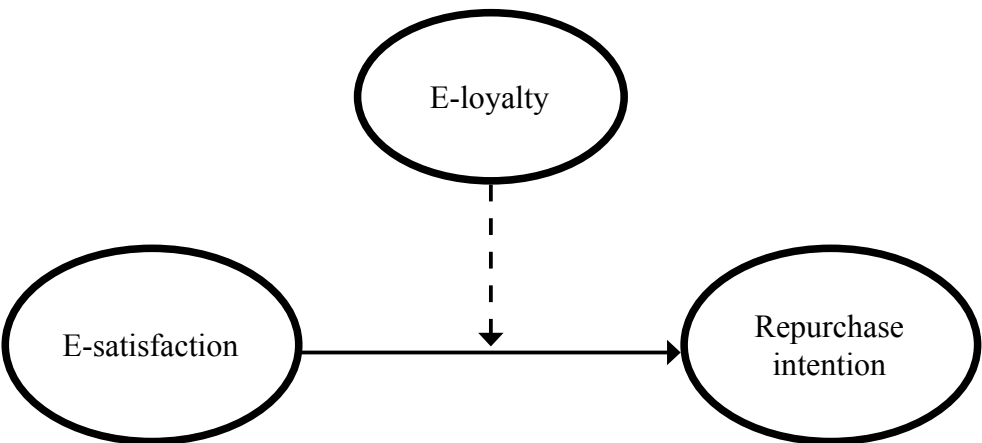
Figure 1. *Conceptual model of an indirect relation between e-satisfaction and repurchase intention with e-loyalty as the moderator*

Source: Authors' research

3.2. Instruments

Re-purchase intention was measured by using a two item scale developed by Chen *et al.* (2015). The response scale was changed from the original seven-point scale to a five-point Likert scale ranging from 1 (completely disagree)

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to 5 (completely agree). The two items are – "Based on your prior experience, please indicate the possibility of purchasing online in the future" and "Based on a successful online purchase experience, will you consider recommending it to your friends or do re-purchase in future?". The coefficient of reliability (Cronbach's alpha) was 0.866, respectively.

Consumer e-satisfaction was measured on a three-item scale developed by Audrain-Pontevia, N'Goala and Poncin (2013). The three items are – "This website has met my expectations", "Generally speaking, I think this website is of good quality" and "This website has the level of quality I expected". The response scale was a five-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). The coefficient of reliability (Cronbach's alpha) was 0.906, respectively.

E-loyalty was measured on a three-item scale developed by Finn (2005). The three items are – "In the future, I will probably buy again on this website", "If I had to make a purchase again, I will select the same website" and "As long as this website exists, I think I won't change of website". The response scale was a five-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). The coefficient of reliability (Cronbach's alpha) was 0.868, respectively.

Empirical research on e-satisfaction, e-loyalty and repurchase intention was performed by survey method. To obtain data, we designed an online questionnaire, which was sent via e-mail in winter 2017. After conducting online research, primary data was controlled and edited. For processing and analysing data, we have used IBM SPSS Statistics 24.

3.3. Research setting and participants

The full set of questionnaires was completed by a total of 190 participants, which represent our sample, of whom 98 (51.6%) were men and 92 (48.4%) were women. According to the marital status of respondents: 60 (31.6%) were married, 2 (1.1%) were widowed, 5 (2.6%) were divorced, 70 (36.8%) were 19 (10.0%) were single and 34 (17.9%) were in life partnerships. According to the employment status of respondents: 74 (38.9%) were students, 7 (3.7%) were self-employed, 46 (24.2%) were employed in public sector, 59 (31.1%) were employed in private sector, 1 (0.5%) was retired and 3 (1.6%) were unemployed.

According to the educational level of respondents: 1 (0.5%) was without primary education, 1 (0.5%) was with primary education, 2 (1.1%) finished secondary vocational education, 4 (2.1%) finished technical secondary education, 42 (22.1%) received high school diploma, 4 (2.1%) finished vocational college, 28 (14.7%) finished professional higher education, 66 (34.7%) received bachelor's degree, 27 (14.2%) received master's degree, and 15 (7.9%) received with doctoral degree.

Out of 190 respondents, 69 (36.3%) lived in the west part of Slovenia and 121 (63.7) in the east part. The average age of respondents was 29.7 years. On the average they have been shopping online for 7.7 years, and they made 10.4 online purchases in the past year.

4. Results

The empirical part of our research is based on quantitative research, for which the data was collected through our survey. In continuation, we present a method to test the model by applying structural equation modelling (SEM), which is used for testing structural relations between constructs. That operation was made by building a model in Lisrel 8.80 software package, which is an analytical statistics program, which allows the testing of multiple structural relations at once (Prajogo & McDermott, 2005). It combines factor and regression analysis by which it tests the proposed model by which we can assess the significance of hypothesized cause-and-effect relations among the variables (Diamantopoulos & Siguaw, 2000). The standardized solutions and *t*-values for the hypotheses tested in the model are presented in Figure 2.
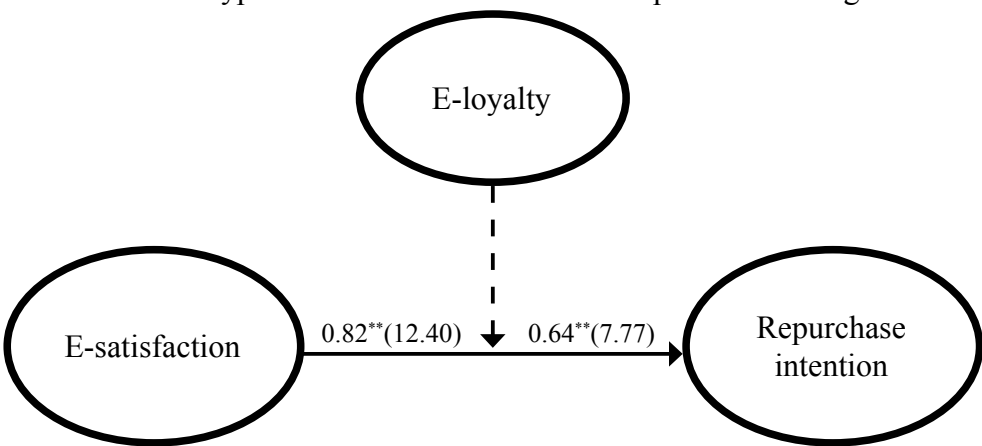
Figure 2. *Standardized solutions (and t-test) for the hypothesis*

Source: Authors' research

Standardised solution weights between the e-satisfaction and e-loyalty and between e-loyalty and repurchase intention are presented in the model in Figure 2.

We can therefore with the use of structural equation modelling confirm positive relations between the researched constructs in our hypothesis and a mediating effect of e-loyalty on the relation between e-satisfaction and repurchase intention. Based on the standardized solutions we found that the relations are positive.

Table 2 presents model fit indices, reference values and model fit according to individual indices (Kenny, 2014) for our researched model.

Table 2. *Model fit indices*

Fit indices	Value for the model	Reference value*	Model fit according to individual indices*
x^2/df	2.948	≤ 2 or ≤ 5	Very good fit
NFI	0.973	≥ 0.90	Very good fit
NNFI	0.973	≥ 0.95	Very good fit
CFI	0.982	≥ 0.93	Very good fit
IFI	0.983	≥ 0.95	Very good fit
SRMR	0.047	< 0.08	Very good fit

* Hu & Bentler, 1999; Hooper, Coughlan & Mullen, 2008; Kenny, 2014

Source: Authors' research

Model fit indices therefore confirm a very good model fit and strong, positive and statistically significant relations. We also confirmed that a direct relation between e-satisfaction and repurchase intention is not statistically significant; therefore the need for e-loyalty as a moderator.

5. Discussion and conclusion

The broad scientific and profession interest in the constructs regarding e-marketing or e-commerce are increasing as the global competition rapidly grows and new online stores emerge exponentially; and based on our research, we can add to these studies. Repurchase intention therefore plays a remarkable role in the sustainability and growth of online stores. The theoretical contribution of this study is to the existing research of e-satisfaction, e-loyalty

and repurchase intention in the aspect of advancing previous research by empirically examining the relations and mediating effect between them. The practical contribution is in the presented results that e-satisfaction influences repurchase intention with e-loyalty as the mediator.

With proposed hypothesis, which was based upon previous research and in-depth study of relevant literature, we have gathered empirical evidence on the relations between e-satisfaction, e-loyalty and repurchase intention have been missing and are highlighted in this research in which e-loyalty is presented and confirmed as a mediator between e-satisfaction and repurchase intention.

We interpret our findings as follows: e-commerce users exhibit higher levels of e-loyalty as their levels of e-satisfaction rise, which leads to an increase in repurchase intention. Positive experiences in e-commerce therefore lead to e-satisfaction, which leads to e-loyalty, which leads to repurchase intention.

Limitations of this study need to be considered before interpretations of the results can be explored. The whole research was focused mostly on these three constructs and the mediating effect, whereas other determinants were not considered. As mentioned, e-satisfaction is not the only determinant of e-loyalty together with career satisfaction, therefore we can only propose, that e-satisfaction affects the construct of e-loyalty together with repurchase intention, whereas there are also other factors involved in the process.

For further research, we suggest investigating the effects of the determinants omitted or to put in other words not included in our study. These determinants could be divided into those influencing the constructs researched in our study, such as situational and other attributive determinants.

E-commerce has become essential for most organizations and will render those who will not comply with these trends, as obsolete. Sustainable business practices are important for the survival of the company and an established client base is of high importance, especially in a highly competitive surrounding as the online market is. Whereas it is important to reach new customers, it is also as important to keep those that we already have.

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IMPACT OF ONLINE ADVERTISING ON MAKING PURCHASING DECISIONS BY FINAL CONSUMERS IN BOSNIA AND HERZEGOVINA

UTICAJ ONLINE OGLAŠAVANJA NA DONOŠENJE ODLUKE O KUPOVINI KRAJNJIH POTROŠAČA U BOSNI I HERCEGOVINI

Abstract

With the occurrence of the Internet and its growing use, a new electronic medium has been created to change human behaviors, their habits, ways in which they do business, communication forms, and to determine the decision-making process when buying. The Internet is relatively young medium that enables personalization of messages that a company sends directly to potential buyers.

The Internet in Bosnia and Herzegovina is starting to be used massively in the past several years, and with that, online marketing communication itself is at its beginning steps. Therefore, this paper considers the specificity of online advertisements. It analyzed possibilities to use online advertisements at the Bosnian and Herzegovinian market, and the impact of online advertisements on making decisions by final consumers at the Bosnian and Herzegovinian market.

Data was collected through a primary research conducted on a sample of 200 surveyed in nine cities within the Bosnian and Herzegovinian market.

The research results offer useful guidelines for application of marketing communication instruments in online branding.

Keywords: online advertising, final consumers, making decisions about purchase

JEL: M31

Sažetak

Pojavom Interneta i širenjem njegove upotrebe, kreiran je novi elektronski medij koji mijenja ponašanje ljudi, njihove navike, način obavljanja posla, komunikacijske obrasce, te determiniše proces odlučivanja o kupovini. Internet je relativno mlad medij koji omogućava personalizaciju poruka koje preduzeće šalje direktno potencijalnim potrošačima.

Internet u Bosni i Hercegovini se počinje masovnije koristiti u posljednjih nekoliko godina te je samim time i online marketing komunikacija u svojim počecima. Stoga se u ovom radu razmatra specifičnost online oglašavanja. Analizirane su mogućnosti primjene online oglašavanje bosanskohercegovačkom tržištu, te uticaj online oglašavanje na donošenje odluke o kupovini krajnjih potrošača na bosanskohercegovačkom tržištu.

Podaci su prikupljani primanim istraživanjem provedenim na uzorku od 200 ispitanika u devet gradova na bosankohercegovačkom tržištu.

Dobiveni rezultati istraživanja pružaju korisne smjernice za unaprjeđenje online oglašavanja.

Ključne riječi: online oglašavanje, krajnji potrošači, odluka o kupovini

JEL: M31

1. Introduction

The new electronic media have enabled marketing communication to be interactive. Interactive marketing communication represents a new paradigm within the field of marketing communication (Vlašić, Mandelli & Mumel, 2007, p. 115). Interactive marketing communication is different from the traditional marketing communication, in the fact that the goal of interactive marketing communication is establishing dialogues and communication programmes with specific groups of identified consumers. Even though, instructiveness has existed even before the Internet, its development peak is linked to digital technologies. Instructiveness is a characteristic of new electronic media, and most of authors writing on the subject of online marketing and Internet marketing see it as generally the most significant specificity of marketing communication on the Internet, that is, it experienced its peak on that medium exactly. Numerous definitions of interactive communication are usually brought down to two sides that mutually exchange communication messages (Vlašić, Mandelli & Mumel, 2007, pp. 85-87).

Chaffey (2000) advises that, in order to be successful, companies should use unique characteristics of electronic media through establishing dialogue

through Internet pages and electronic mail, making a database of consumers that will be used to best fulfill consumer needs through improvement of the offer and personalization of marketing communication. That is, through interactive marketing communication, companies and consumers become partners who share a goal to develop long-term partnerships, and in such way, create maximum value for both sides (Chaffey, 2000, p. 35). Considering the growing role of online advertising in the process of communication with final consumers, and growingly intensive use of the Internet at the Bosnian and Herzegovinian market, this paper attempts to answer the following research questions:

- What information sources are relevant for final consumers at the Bosnian and Herzegovinian market?
- What media dominantly determine the behavior of final consumers?
- Does online advertising impact final consumers' decision about buying the Bosnian and Herzegovinian market?

2. Theoretical frame of conducted research

Online advertising, once synonymous with banner, pop-up, and e-mail advertising, has developed into a multi-faced advertising channel with enormous growth prospects. Today, online advertising includes not only evolved banner, pop-up, and e-mail ads but also search marketing, pay-per-click, pay-per-action, rich media, contextual advertising, geo-targeting, behavioral targeting, social marketing, video advertising, and user-generated online video.

Advertising is also appearing in online games, in-line text, social media, blogs, and mobile formats (Boone, Secci & Gallant, 2006, p. 242). Many companies have recognized the advantages of Internet communication, and they are developing development strategies of their web pages and making them an inclusive part of own integrated marketing communication (Chaffey, 2000, p. 35). Newer research results have shown that the Internet takes away time and attention from other media. This was especially true for TV and magazines (Nie & Ebring, 2000).

Therefore, the role of the Internet in a promotive strategy of a company becomes an object of numerous studies. Bennet has determined that advertising on Web pages not owned by a company is possible and usual, but it does not have to be taken well by consumers. Consumers only wants

to be presented facts about what they came for on certain pages. Internet advertising is a very important part of Internet communication strategy due to the key role advertising has in informing and persuading consumers as advertising does in traditional media (TV, radio, magazines, newspaper, and such), and also online advertising – paid spaces on web pages or mails, such as banner ads, logo icons, and so on. Together, these tools form an integral part of the integrated marketing communication strategy (Bennet, 1997, pp. 324-344). World marketing experts spend millions of dollars per year on Internet advertising. In the early age of e-trade, banner ads were an effective way to raise awareness and positive attitude towards a certain product brand (Briggs & Hollis, 1997, pp. 33-45). Companies have understood potential uses of the Internet in advertising, direct sales, creation of a brand and providing consumers with information. Market and business is changing day to day and is shifting towards online shopping and virtual business. According to those changes, companies are growingly focused on Internet advertising.

3. Overview of current studies

3.1. Web page

Doing business in a modern environment is unthinkable without a web page. A web page consists of the home page, and other pages that could be accessed from the home page, through links that take us to other pages with different information. One of the foundational goals of a web page is to ensure best quality information about a company and its manufacturing or service programmer, and activities. Considering that the Internet is an interactive medium, providing information, answering questions, recording and respecting complaints, companies, through their web page, receive a way to quicker and better provide service to their clients. Web is different in many ways from other communication media.

Access that functioned well in traditional media (for example, advertising in magazines or jumbo ads), now has to be adapted to an environment where a consumer sees only what is on the small screen and what it gets his/her attention on that screen, or, if he/she is intending to find something else, he/she will go to a new page. A challenge for advertisers on the Internet is to take over control over the first showing, first page on the screen (Rowley, 2004, pp. 24-41). As well as with other media, acquiring traffic is expensive, maintaining traffic is profitable, and developing traffic requires value (Hanson,

2000, p. 42). As an ad, a web page may be used for informing, persuading or reminding consumers about a company or a product. Its influence will be minimal unless other strategies are used to attract traffic on the page.

Creating a web page is not adequate in itself to create existence on the web. Promotional activities must be performed in order to attract traffic and achieve marketing goals. According to Hairong, this could be achieved through using banner ads and through activities, such as: participation in affiliate programmes, advertising on portals and through advertising in other media. Finally, once the traffic is established, it is important to understand how a web page should still be maintained as a communication mean (Hairong, 1999, p. 98). According to Mosley-Matchett (1998), a web page of an organization is an independent promotion element. As in traditional media, the first impression is the most important. Fast loading is necessary. If the page is loading slowly, a visitor will lose interest and leave. Also, negative mood relating to the page is growing accordingly (Mosley-Matchett, 1998, pp. 399-400). Being simple to use and with good interface for searching are priorities for a quality page. When a visitor comes to a page, he/she must be able to quickly find an information he/she is looking for, and with that, complete the transaction.

Most pages should include a search engine according to key words and a well elaborated classification by categories. Watson and others (Watson, Akelsen & Pitt, 1998, pp. 36-57) have researched strategies for creating an attractive page they define as a page with a potential for attraction and interaction with a great number of visitors from a targeted consumer group. They have observed different ways in which to attract visitors, such as clubs and user services. Each one of those models create a different ambiance that has influenced a visitor and their acceptance or rejection. Ovans (1999) has stated that salesmen change their act and tone of voice in interaction with consumers. An interactive web page must behave in a similar way. People will most probably buy from a computer that represents a personality similar to theirs. However, on the other hand, Ovans (1999) also states evidence about a false personalization of a computer answer when information is not voluntarily entered by a consumer, which leads to a decreased possibility of a purchase (Ovans, 1999, p. 20). Advertising through a web page has a few specific characteristics which makes it more or less similar or different from advertising through other media (Gordon & De Lima-Turner, 1997, pp. 362-375):
•	Access to ads – consumers mostly control their exposure to Internet ads than it is the case with other media.

- Ad positioning – ads do not interrupt content viewed by a consumer and so attract less attention.
- Message content – limited dimensions and technical possibilities of an ad require a greater dose of creativity when creating a message.
- Influencing price – the Internet still has an image of a "free" source of content, therefore, advertising is often a single source of income of the content provider.
- Information about audience – Internet technologies enable precise definition of audience characteristic to which ads are shown. Therefore, advertisers are more often ready to give more money for targeted advertising through the Internet comparing to mass advertising through other media.

According to Reza Kiani, there are three fundamental ways to create traffic on web pages (Reza Kiani, 1998, pp. 185-194):
- Linking from other pages – advertising on Internet search engines, advertising on pages relating to a certain industry, participating on advertising groups and mailing lists.
- Linking to other pages – ensures being interesting to a targeted segment, and with that attracting them (for example, links to other pages related to a certain industry)
- Common pages – establishing virtual shopping centers in order to ensure a greater exposure of consumers to offers from partnering companies.

The communication initiator with a company, that is, visiting a company web site, might be also searching for information on the Internet; this is why a special significance goes to the so-called key words on certain search engines. Once a consumer visits a company page, it is necessary to keep him/her there as long as possible and to encourage another visit. According to studies, the most important reasons to return to a certain page were (Langford, 2000, pp. 40-48): news and dynamic information, references and research, using the search engine, fun, shopping, and simplicity of use to satisfy a certain need.

Studies show that fun and interactivity of the page are the key factors for length of time a visitor spends on a page, and for desire of a consumer to come back to the page, to finally purchase, therefore, the success of a page. Interactivity of the Internet page also influences the perception of the quality of a page, readiness to create a relationship, readiness for a transaction (Raney *et al*., 2003, pp. 38-53). Through a web page, companies may collect data about characteristics of a certain market. Through the Internet, they may

conduct studies or receive an answer to some questions speaking directly to consumers and asking for feedback.

3.2. Banner ads

Advertising through banner ads represents the most often and the most popular form of advertising on the Internet. A banner usually transfers onto the next page through a link that is advertised by it, that is, it presents the company advertising message. Similar to TV, radio or printed ad, they encourage the audience to take action. Even if they are not clicked on, banner ads may influence visitor attitude and help the product brand in advertising (Elliott, 1996-2006).

Banner ads may be statistic or dynamic (Kesić, 2003, p. 416):
- Statistic – interactive, but without any action within the banner ad itself.
- Dynamic – rich media banners that include sounds, movements within the banner ad, animation.

Banner ad may be placed almost anywhere on the web page. Banner ads of standard size are usually placed on top or bottom of the page, while new shapes take the right or the left edge of the page (vertical banners, so-called skyscrapers), however, they often appear within the content (for example, intertwined in the text) (Škare, 2004, p. 508). As banner ads are growingly popular, their influence on advertising is growingly researched. Advertisers want to know who clicks the banner and which factors influence the click through percentages (percentages of banner views). Answers to those questions help companies to integrate own web page into a marketing communication mix and to improve business through answer and reaction to advertisements. Companies place banner ads in order to achieve (Hofacker & Murphy, 1998, pp. 703-712):
- That visitor sees the ad, notice it consciously or unconsciously; which helps in creation and strengthening brand image.
- That visitor clicks on a banner ad, and come to the company web page through it.

Measuring the number of clicks on banner ads and visits to a page provides an important data about the influence of the banner ad. Considering that they are usually placed on peripheral of the page, they do not disturb the primary activity of the visitor. The visitor does not have to do anything to avoid the

banner ad. If he/she is interested, he/she may click on the banner ad to get more information. If he/she is not interested, the banner may just be ignored. According to that, we may say that the user controls the experience according to own interests (Liu & Shrum, 2002, pp. 53-64). Other studies focused on banner ads, the most used advertising form on the Internet show that the impact of such ads is negligible (Colkin, 2001, p. 20; Green & Elgin, 2001, pp. 46-50).

The main difference between banner ads and traditional ads is that banner ads do not fill the whole visible part of the screen and it does not force visitors to actively focus on the ad. It could be considered if the add across the whole web page could achieve better visibility and effect. Banner ad does not show on pages that are congested with text, pictures and sounds that are competing for attention. If a page is too congested, and if the page is perceived as complicated, it may have negative consequences on ads that are placed on such page. According to Bruner and Kumar, if a web page is perceived as complex, it reduces the effects of an ad. However, if the complexity of a page increases the interest, than it may increase the effect of the ad (Bruner & Kumar, 2000, pp. 35-42).

Banner ads are most often placed on web pages that already have an established traffic, such as portals, and this increases the probability of them being seen. Banner ad campaign most often includes placing banner ads onto multiple pages. Media agencies or advertising networks may be hired to launch a campaign. Advertising networks or ad networks are companies that connect web pages that wish to place ads on pages that wish to advertise. Companies do not do business directly with companies that wish to advertise through web pages through these networks.

Types of banner ads include pop-up and pop-under windows, interstitials, and rich media ads (Škare, 2004, p. 508). While banner ads may be lost in congestion, pop-ups and interstitials are designed to be forceful. This may increase visibility of the ad, but it does not necessarily increase the effect. Ducoffe has presented a model that showed how irritation may directly influence value of an ad and influence the attitude towards the Internet ad. According to that, the more forceful the ad is, the greater the irritation that may negatively influence effects of the ad (Ducoffe, 1996, pp. 21-35). There are several variations of banner ads, and we will shortly consider only a few of them further in the paper.

3.3. Pop - up windows

Pop-up and pop-under widows are ads that are realized parallel with a loaded web page, but in a special window (frame). Advertisers often use the forceful format of pop-up ad that cannot be avoided. When opened, parts of the page read by a visitor cannot be avoided, and the visitor is forced to automatically react, either by closing a window or visiting a page that is being advertised. Advertises growingly advertise in a special widow that is opened "under" looking at the web page (pop-under). In that case, visitors are being exposed to an ad when they close the web page they were looking at (Škare, 2004, p. 508).

Previous studies suggest that pop-ups achieve a high level of perception of an ad, a greater number of clicks, and a greater percentage of intent to buy in comparison to standard banner ads (Chang-Hoan, Jung-Gyo & Tharp, 2001, pp. 45-56; Diao & Sunđar, 2004, pp. 537-567). Disturbance while looking at a page caused by pop-ups may result in negative effects that include avoidance and a feeling of irritation towards the ad itself (Hairong, Edwards & Joo-Hyun, 2002, pp. 37-47; Edwards, Li & Lee, 2002, pp. 83-95). *Interstitials* – show up "between" two web pages.

When a visitor is going from one page to the other, before the load of the other web page, there would be an animated ad. Considering that this way of advertising significantly disturbs visiting web pages and, in that way, irritates visitors, it is rarely used (Škare, 2004, p. 508). *Rich media and floater ads* – looking through web pages, more often than not, we will come about rich media and floater ads. These are ads that use advanced possibilities of browser web pages and they include animation, sound, and sometimes even interactive elements (Koegel, 2003).

They provide advertisers with a high level of creativity and they have good visibility, because, they partially hide web page content during the visit.

3.4. Direct electronic mail – newsletters

Another option is advertising through e-mail with newsletters. Newsletters have many benefits as do printed daily newspaper, because they are directed to targeted audience, and so are the ads in them. One of those options is sponsoring a newsletter. When sending e-mail with the purpose to promote, companies usually use mailing lists, that is, lists of e-mail addresses of existing

or potential consumers. For example, if a company on their web pages offers visitors a possibility to register/subscribe to a mailing list, and through it, the company will distribute news about the company or a product or such.

Mailing lists, where interested persons register themselves, are called opt-in lists. Derivative of the word opt-in list is a double opt-in list, where an interested receiver, after he/she registers the e-mail, must confirm the registration by answering an e-mail received after the registration. Through this, companies are protected from misuse of their mailing lists. There are also mailing list whose creators do not ask for permission to include the e-mail from the owner. Because of that, they offer a possibility to cancel the registration from the mailing list, if the receiver wishes to do so, and that is why these lists are called opt-out lists.

Addresses are most often collected searching through web sites and discussion groups, but also through illegal activities, such as stealing company mailing lists (Škare, 2004, pp. 510-511). Maybe the greatest challenge of e-mail are spam messages most often sent by scammers (offering a possibility of becoming rich fast), offerors of "fun" contents (often pornographic web pages and online games of luck), and manufacturers of products such as medicine of suspicious backgrounds, illegal software, and such (Hulten *et al*., 2004). These spam messages lessen the potential of e-mail to perform direct marketing activities.

3.5. Forums – oral transfer (word of mouth)

In addition to paid ads, forums, word of mouth, and in this case, typing on a keyboard, could be positive and negative and could be used for promotional purposes. It is much easier for a consumer to express himself/herself and be notice on a forum, for example, than anywhere else. According to Wilson and Abel, there are many offline promotive techniques such as the traditional forms of advertising, for example, word of mouth (Wilson & Abel, 2002, pp. 85-94). Companies must be careful and aware what is said about them in any moment, that is, what is typed about them. They must follow word of mouth about their business or products.

3.6. Portals

The purpose of a portal is to be a starting point on the Web and to enable links to other pages. Portals attract large audience and they segment it similar to supermarkets and smaller shops (MacMillan, 1998, p. 30). Because portals offer

various useful information, search engines, news, online shops and links, users are attracted and they may use the portal as a starting page over which they will further use the Internet. According to Rowiey (2004), portals play a role in structuring ways in which users access the Internet. The concept is in accordance with the meaning of the word "portal", such as: door, entrance, main door. Portals offer ways through which organizations may achieve visibility through using banner ads, hyperlinks, and such. Achieving satisfactory visibility through portals requires paying attention to web page content and registration (Rowiey, 2004, pp. 24-41).

3.7. Advertising through search engines

According to Rowley (2004), the issue with search engines is that basically one key word creates a very long list of results. Consumers desire to see a page they are looking for in the first ten listed results, and companies desire the same thing also, to attract a visitor in such a way. Achieving good positions on search engine lists has become a specialized work. Optimizing presence of a web page through a search enginge may be an exhausting task, and companies usually ask for help from other companies that have specialized to achieve such goal (Rowiey, 2004, pp. 24-41).

4. Research methodology and analysis of the results

Within the field research, we have collected data through surveying method within which we have used a questionnaire. The research was conducted at the end of 2015 in 15 specialized stores for appliances in nine cities in our market. We have used a sample of n=200 surveyed.

The research was conducted in Tuzla, Lukavac, Živinice, Kalesija, Sarajevo in seven locations, and Banja Luka in two locations, Mostar, and Bosanska Krupa. Every third shopper in an appliance shop was surveyed. The conducted research has a few limitations, as such: the sample is limited only to shoppers for appliances, and time and financial limitation.

For the analysis of data gathered through this research, we have used the following statistical scientific methods: descriptive statistical analysis of gathered data, and descriptive analysis of interrelations between chosen data.

Further in the paper, results of the conducted research will be presented and analyzed.
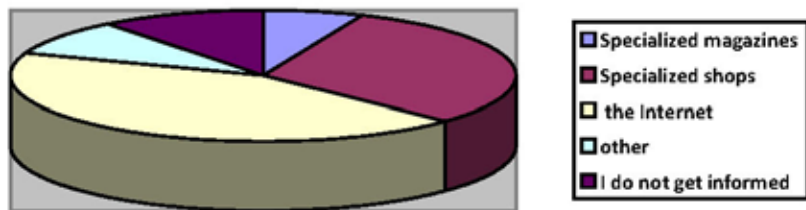
Figure 1. *Source of information about appliances*

Source: Authors' research

At the very beginning, we have tried to determine which sources of information were used by shoppers of appliances, in order to determine if the Internet is an adequate communication medium. As it is presented in Figure 1, the Internet is in the first place with over 40% for the question of searching information about appliances and electronics. This data should be a guideline for further investment for management, when we talk about communication with the final consumer.
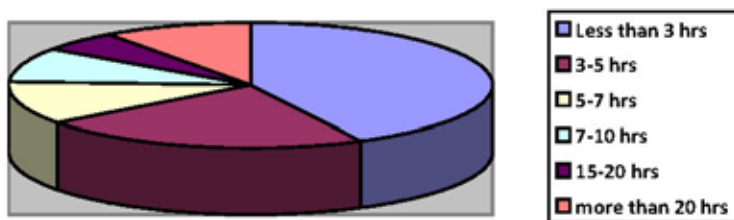
Figure 2. *How much time consumers spend on the Internet shopping for appliances*

Source: Authors' research

From the collected result regarding the question of the amount of time spent on the Internet per week, many consumers still do not use the Internet exclusively.

Therefore, communication with the final consumer must be targeted and directed towards a consumer in the moment when he/she searches for an appliance, that is, from the moment when he/she went into the process of searching for information about appliances, and he/she should be followed up upon all the way till the end of the process of purchase and in the post-purchase period, in order to come to feedback that could be used for the following transactions.
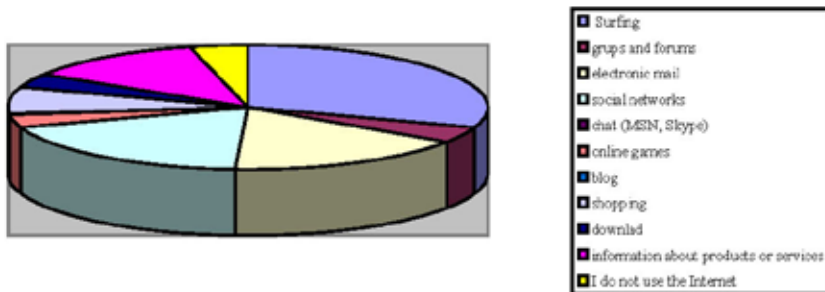
Figure 3. *How appliance buyers spend time on the Internet*

As seen in the Figure, 17.74% of shoppers for appliances use social networks, 15.73% use the e-mail. Blog, as a form of communication, is still neglected at our market. Only 6.45% of appliance shoppers shop on the Internet.
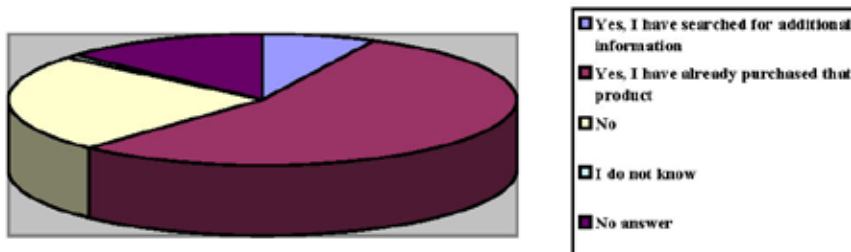
Figure 4. *The effect of online advertising*

Online advertising has encouraged a significant number of recipients to a certain action. That is how advertising has influenced a shopping decision with 54.67%, while additional information was searched for 7.33% of recipients.
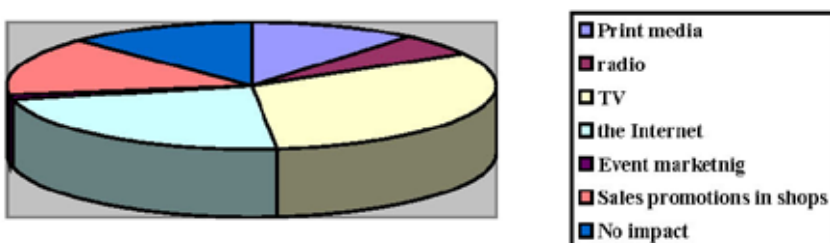
Figure 5. *Media and instruments of communication that impact the decision to purchase* appliances

As it can be seen in the Figure 5, TV influences 31.68%, and the Internet 22.98% of shoppers to make decisions about buying appliances. This is a very important data for each advertising campaign that is planned, and these indicators show that trends occurring in more developed countries with a greater number of Internet users, do not bypass our market either. It should also be considered that radio as a medium influences only 5.59% of buyers, while print media influence 11.18%. These data are crucial when determining the advertising budget in each year, and for each medium.

5. Conclusion

Online advertising, due to numerous advantages in comparison to advertising through traditional media, is used more and more in the modern market. This paper has attempted to determine the influence of online advertising on making decisions about purchases by Bosnian and Herzegovinian consumers, focusing on appliances segment. The research results have shown that the Internet is most significant source of information about appliances and electronics for the consumers'. Also, it has been determined that consumers spend limited amount of time on the Internet. Therefore, all communication with the final consumer must be targeted. Considering that, e-mail and social networks should be used because it has been determined that shoppers for appliances use those the most. This is a very important data for every advertising campaign that is being planned, and those indicators show that trends, which show up in advertising in more developed countries with a higher number of Internet users, do not bypass the Bosnian and Herzegovinian market either.

According to a detailed analysis of secondary research data, and conclusion we came about based on the primary research results, we may list the following recommendations:
- Before using online advertising, it is necessary to perform a market research by which it would be determined which communication channels are preferred by the targeted market segment.
- Pay attention to content quality, if it is interesting, considering the targeted consumer groups, in order to provoke and motivate the engagement, when consumers are in question but also when a company needs to get quality feedback from the targeted group important or the company.
- Pay attention to control the size of reach, and also that the relevant content reaches the desired group.

Research results of theoretical and methodological concepts of online advertising point to the need for further studies that would relate to:

- Studies relating to consumer market, that would provide insights into accessibility and literacy as far as the Internet goes, through devices usually used to access the Internet, and how much time user spend on the Internet and what they use it for the most.
- Studies relating to advertising, with a focus on online advertising and comparison with other forms of advertising, in order to determine if the Bosnian and Herzegovinian market follows the trend of EU countries as far as advertising goes.
- Studies relating to efficiency and effectiveness of search engine ads in comparison to ads in social media and display ads.

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USING FACEBOOK TO IMPROVE COMMUNICATIONS OF INTERNAL PUBLIC IN HIGHER EDUCATION INSTITUTIONS IN BOSNIA AND HERZEGOVINA

PRIMJENA FACEBOOKA ZA UNAPRJEĐENJE KOMUNIKACIJE INTERNE JAVNOSTI VISOKO- -ŠKOLSKIH INSTITUCIJA U BOSNI I HERCEGOVINI

Abstract

Facebook is a social medium that has significantly changed a way in which students communicate. With the help of its mobile applications, students are continuously online and follow posts on this social network. Even though, students intensively use Facebook, higher education institutions in Bosnia and Herzegovina are still not using its potential adequately for realization of their marketing goals.
Therefore, a research at the Faculty of Economics of University of Tuzla has been conducted with an aim to identify reasons for underrepresentation of Facebook in communication between students, professors and associates. The data has been connected through the academic 2015/16 and 2016/17. There were 703 undergraduate students surveyed in total. The research also included teaching staff of the Faculty of Economics, where, through comparison, opinions of 17 professors and associates surveyed in 2015/16, and those of 11 professors and associates in 2016/17, it was attempted to determine the existence of differences in opinions about use of the Faculty's Facebook page.
The results represent a good starting basis for improvement of communication between students and teaching staff at higher education institutions in Bosnia and Herzegovina.

Keywords: Facebook, communication, internal public, higher education institutions

JEL: M31

Sažetak

Facebook je društveni medij, koji je značajno promijenio način na koji komuniciraju studenti. Zahvaljujući svojim mobilnim aplikacijama studenti su neprekidno online i prate objave na ovoj društvenoj mreži. Iako studenti intenzivno primjenjuju Facebook, viskoškolske institucije u Bosni i Hercegovini još uvijek ne koriste adekvatno njegov potencijal za realizaciju svojih marketing ciljeva.

Stoga je provedeno istraživanje na Ekonomskom fakultetu Univerziteta u Tuzli sa ciljem da identificiraju razlozi podzastupljenosti primjene Facebooka u komunikaciji studenata, nastavnika i saradnika. Podaci su se prikupljali tokom 2015/16. i 2016/17. akademske godine. Ukupno je anketirano 703 studenta dodiplomskog studija. Istraživanjem je obuhvaćeno i nastavno osoblje Ekonomskog fakulteta, gdje se poređenjem stavova 17 nastavnika i saradnika ispitivanih 2015/16. akademske godine i 11 nastavnika i saradnika ispitivanih 2016/17. akademske godine nastojalo utvrditi postojanje razlika u mišljenjima o načinu primjene Facebook stranice fakulteta.

Dobiveni rezulati predstavljaju dobru polaznu osnovu za unaprjeđivanje komunikacije studenata i nastavnog osoblja na visokoškolskim institucijama u Bosni i Hercegovini.

Ključne riječi: Facebook, komunikacija, interna javnost, visokoškolske institucije

JEL: M31

1. Introduction

The rapid development of social media and their increasingly intensive use has significantly influenced the change in the mode of communication for students in higher education institutions. Therefore, universities and colleges, in addition to mass communication, pay more attention to the development of instruments of direct communication with target segments, and, in doing so, they are increasingly turning to social media. Considering that, higher education institutions in Bosnia and Herzegovina use Facebook the most (Smajlović, Kamarić & Sinanagić, 2015, pp. 2-6). Even though, higher education institutions use Facebook as a mode of communication with external public, underrepresentation of this social network in communication between students and professors and associates at the Faculty has been noticed. Therefore, this paper attempted to answer the following research questions:

1. In which way do students perceive the possibility of using Facebook to communicate with internal public?
2. In which way do professors and associates perceive the possibility of using Facebook to communicate with internal public?

3. Has the perception, of professors and associates, as well as students, about the possibility of using Facebook to improve communication between those two groups of internal public, changed?

2. Theoretical frame of conducted research

Since the start of the industrial revolution, social commentators have presented ideas that comment on the effect of technology to human social interaction via any modern invention. These ideas take into account how the change of technology could affect how people interrelate (Griffith & Linavage, 2008, p. 76). There are two important reasons why Web 2.0 matters to universities. Students will increasingly be using Web 2.0 technologies in their social lives, at work and in previous study, and will begin to expect that their courses will make use of them too, in the same way that we have seen students increasingly expecting the provision of online material both within their virtual learning environment and from the library (for instance through the provision of online journals) and, perhaps more importantly, because Web 2.0 provides a new set of powerful educational affordances (Armstrong & Franklin, 2008, p. 12). The significance of developing Web 2.0 technologies and social media in the field of higher education of Bosnia and Herzegovina may be observed primarily in the context of increasingly intensive use of Facebook.

Students are, with the help of their smart phones, continuously in contact with their Facebook groups. In Facebook groups, students may be asked to share resources, annotate material online, critique or review related material, or simply comment on material raised during a unit. Indeed, students may be required to create their own Facebook groups or pages as part of engaging with a particular topic, or presenting material to an audience beyond that of their peers, tutor or marker. Moreover, for students who only interact online, Facebook can provide an extremely important space to interact with fellow students and with professors, often compensating in some respects for the lack of informal and face to face discussion opportunities enjoyed by their campus-based counterparts (Leaver & Kent 2014, pp. 60-65). Facebook is one of the latest examples of communications technologies that have been widely-adopted by students and, consequently, have the potential to become a valuable resource to support their educational communications and collaborations with faculty. However, faculty members have a track record of prohibiting classroom uses of technologies that are frequently used by students (Roblyer *et al.*, 2010, pp. 134-140).

3. Overview of current researches

The possibility of using Facebook in the field of higher education is a subject of numerous researches. It is worth considering that some researchers have focused only on the research with students, some on academic staff, and some on interaction between students and academic staff. Also, some researches have focused on integration of formal and informal learning using social media and supporting student self-regulated learning in higher education contexts (Dabbagh & Kitsantas, 2012). Further, a short overview of results of conducted researches will be presented.

Bicen and Cavus (2011) have conducted a research with an aim to determine how much students use Facebook and also to learn which Facebook tools the participants preferred. Eighty six volunteer undergraduate students participated in the present study. The data obtained by the survey was analyzed and commented upon using the SPSS program with the percentage, frequency, and mean statistical analysis techniques. As the results show, students spend a significant amount of their time using Facebook. As a consequence of this increase in usage, students are establishing communication with people in their environments. Students increase their knowledge and communication skills by sharing photographs, links that they like, and news with their friends. In addition, Facebook provides individuals with a way of maintaining and strengthening social ties, which can be beneficial in both social and academic settings (Bicen & Cavus, 2011, pp. 943-947).

Ventura and Quero (2013) have recognized a possibility of using Facebook to establish an interactive communication between academic staff and students. Their research results have shown that using social networks can help improve the set of competences reflected in dissertations written by students studying Economics or Business Studies. The experimental use of Facebook in teaching has also resulted in other advantages being observed which were not anticipated at the outset of the initiative. It is possible to use new resources for teaching, continue interaction in online space, plan tutorial groups, take advantage of the culture of collaboration that predominates on the network, benefit from the informal nature of communication and, finally, maintain links with students into the future (Ventura & Quero, 2013, pp. 1032-1038). Valenzuela, Park and Kee (2009) have conducted a research on relationship between Facebook, social capital and dimensions relating to employability within the context of alumni engagement. Initial hypotheses were rejected; however discovery of a new set

of relationships revealed that Facebook usage had a weak effect on the creation of social capital (Valenzuela, Park & Kee, 2009. pp. 875-901).

Brown (2012) has intensively researched a university in the North of the UK exploring academics' perceptions of the potential of Web 2.0 for their teaching and any influences shaping those perceptions. The research looks at the perceptions of academics 'on the ground', as well as those leading teaching and learning strategies at the University. The study identifies a range of perceptions among academics. These are influenced predominantly by academics' beliefs of what constitutes good teaching in their contexts. The paper concludes with an exploration of ways in which the range of perceptions evidenced may inform discussion of Web 2.0, arguing that academics' perceptions are crucial to context-based understandings of its potential (Brown, 2012, pp. 50-57).

Mazer, Murphy and Simonds (2007) have, in an experimental study, examined the effects of teacher self-disclosure via Facebook on anticipated college student motivation, affective learning, and classroom climate. Participants who accessed the Facebook website of a teacher high in self-disclosure anticipated higher levels of motivation and affective learning and a more positive classroom climate. In their responses to open-ended items, participants emphasized possible negative associations between teacher use of Facebook and teacher credibility. Participants offered recommendations for teachers regarding the use of Facebook and other weblog services (Mazer, Murphy & Simonds 2007. pp. 1-17). Ajjan and Hartshorne (2008) have determined that while students are increasing their use of emerging technologies such as text messaging, wikis, social networks, and other Web 2.0 applications, this is not the case with many university faculty. Their research results indicated that, while some faculty members feel that some Web 2.0 technologies could improve students' learning, their interaction with faculty and with other peers, their writing abilities, and their satisfaction with the course, only a few chose to use them in the classroom. Additional results indicated that faculty's attitude and their perceived behavioral control are strong indicators of their intention to use Web 2.0. A number of implications are drawn highlighting how the use of Web 2.0 could be useful in the classroom (Ajjan & Hartshorne, 2008, pp. 71-80).

4. Research methodology and analysis of the results

In the conducted research, two groups of internal public of the Faculty of Economics were included: students and teaching staff. The structure of the

surveyed included in this research is presented in Table 1 and Table 2. Data was collected through a primary research using a questionnaire created for this research.

Table 1. *Student structure*

Academic 2015-2016	Frequency	Percentage
I year	89	12.7
II year	73	10.4
III year	84	11.9
IV year	78	11.1
Total previous academic year	324	46.1
Academic 2016-2017		
I year	106	15.1
II year	107	15.2
III year	108	15.3
IV year	58	8.3
Total current academic year	379	53.9
TOTAL	703	100

Source: Authors' research

From the presented table, we may clearly see that there were 703 surveyed for this research. In the research which data have been collected in the academic 2015/16, there were 324 students included, while 379 students were included in the research in the academic 2016/17.

Table 2. *Teaching staff structure*

Academic 2015-2016	Frequency	Percentage
Full professor	3	10.7
Associate professor	4	14.3
Assistant professor	5	17.9
Senior teaching assistant	3	10.7
Teaching assistant	2	7.1
Total previous academic year	17	60.6
Academic 2016-2017		
Full professor	3	10.7
Associate professor	2	7.1
Assistant professor	2	7.1
Senior teaching assistant	2	7.1

Teaching assistant	2	7.1
Total current academic year	11	39.1
TOTAL	28	100

Source: Authors' research

The structure of teaching staff included in the research is also different. Therefore, in the research of academic 2015/16, there were 17 professors and associates included, while 11 of them were included in the research of academic 2016/17. The questionnaire was structured according to the set research aims. In Table 3, the results of group statistics, of surveyed students in academic 2015/16 and 2016/17 who participated in the research, are presented, as well as means, standard deviations, and standard error means by certain statements.

Table 3. *Group statistics of surveyed students*

	Students of academic 2015/16 and 2016/17	N	Mean	Std. deviation	Std. error mean
Faculty of Economics should have a FB page	Students of academic 2015/16	324	4.0957	1.07033	.05946
	Students of academic 2016/17	379	4.4116	.90236	.04635
FB could be used to schedule exam terms	Students of academic 2015/16	324	4.1852	1.13880	.06327
	Students of academic 2016/17	379	4.2296	1.08505	.05574
FB could be used to announce exam results	Students of academic 2015/16	324	4.4630	.98370	.05465
	Students of academic 2016/17	379	4.5119	.94098	.04833
FB could be used to establish interactive communication with professors and associates	Students of academic 2015/16	324	3.9105	1.14357	.06353
	Students of academic 2016/17	379	3.8997	1.15492	.05932
FB could be used for daily exchange of information between students	Students of academic 2015/16	324	4.3302	1.25861	.06992
	Students of academic 2016/17	379	4.5435	.89684	.04607
FB could be used for exchange of literature, presentations, and such	Students of academic 2015/16	324	4.1975	1.31125	.07285
	Students of academic 2016/17	379	4.5330	.83940	.04312
FB could be used to inform current and future students about curricula and programmes	Students of academic 2015/16	324	4.3611	.98715	.05484
	Students of academic 2016/17	379	4.3272	.97241	.04995

Source: Authors' research

The analysis of results presented in Table 3 indicates the following:

■ Students of academic 2016/17 have a more positive attitude about if the Faculty of Economics should have a Facebook page if the Facebook page could be used for exchange of literature and other study materials, than do students of academic 2015/16.

■ Students of academic 2016/17 gave the highest average grade to the possibility to use Facebook for daily exchange of information between students.

■ Students of both generations gave the lowest grade to the possibility to use Facebook for establishing an interactive communication with professors and associates.

In order to determine if there is a statistically significant difference between students of the previous and current generation about the possibility of using the official Faculty Facebook page, we will conduct an analysis using t-test of independent samples. Observing results of the test of independent samples (Table 4), we may see that with the first statement – Faculty of Economics should have a Facebook page – the assumption about equality of variances has not been fulfilled (significance in part of Levene test of equal variances is 0.024<0.05). However, considering that the two-way significance in part of the t-test in case of equality of means is less than 0.05 (in our case 0.000), we conclude that, between observed groups of students, there is a statistically significant difference between means of the observed dependent variable.

The results presented in the second row of the following Table show that there is not a statistically significant difference in means between the observed groups for using Facebook to schedule exam terms. Even though, significance in part of Levene test of equal variances is greater than 0.05 (in our case 0.511), the two-way significance in part of t-test in case that equality of means is greater 0.05 (in our case 0.598), we conclude that means of observed variables is significantly not different with observed group of students. Statistically significant difference between means of observed groups does not exist even for using Facebook to announce exam results and establishing interactive communication between students and professors and associates. Even though, in both cases, assumptions about equality of variance have been fulfilled, that is, significance in part of Levene test of equal variances are greater than 0.05 (in our cases 0.217 and 0.891 respectively), the two-way significance in part of t-test in case equality of means is greater than 0.05 (0.501 and 0.902 respectively), we conclude that there is not a statistically significant difference between means of observed variables.

According to results presented in Table 4, we may see that the statistically significant difference between students of the previous and current generation is only existent in the question of using Facebook for daily exchange of information between students as well as literature, presentation, and other study materials intended for students. Even though, in both cases, assumptions of equality of variances are not fulfilled, for determination of existence of statistically significant difference in means of observed variables, we have used the second row of the Table calculated for the case of unequal variances. Considering that the two-way significance in part of t-test of equality of means in both cases is less than 0.05 (in our cases 0.011 and 0.000 respectively), we have determined the existence of statistically significant difference between observed groups of students for the question of using Facebook for daily exchange of information, as well as literature, presentations and study materials. Attitudes of the previous and current generations of students at the Faculty of Economics do not differ even for the question of using Facebook to inform current and future students about curricula and programmes.

Table 4. *Test of independent samples of students*

		Levene's test for equality of variances		t-test for equality of means					95% Confidence interval of the difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference	Lower	Upper
Faculty of Economics should have a FB page	Equal variances assumed	5.148	.024	-4.246	701	.000	-.31593	.07440	-.46201	-.16985
	Equal variances not assumed			-4.190	634.575	.000	-.31593	.07539	-.46398	-.16788
FB could be used to schedule exam terms	Equal variances assumed	.432	.511	-.528	701	.598	-.04437	.08400	-.20928	.12055
	Equal variances not assumed			-.526	672.684	.599	-.04437	.08432	-.20992	.12119
FB could be used to announce exam results	Equal variances assumed	1.526	.217	-.673	701	.501	-.04891	.07270	-.19166	.09383
	Equal variances not assumed			-.670	673.710	.503	-.04891	.07296	-.19216	.09434
FB could be used to establish interactive communication with professors and associates	Equal variances assumed	.019	.891	.124	701	.902	.01076	.08699	-.16004	.18155
	Equal variances not assumed			.124	686.108	.902	.01076	.08692	-.15991	.18142
FB could be used for daily exchange of information between students	Equal variances assumed	56.622	.000	-2.613	701	.009	-.21329	.08162	-.37354	-.05304
	Equal variances not assumed			-2.547	572.147	.011	-.21329	.08373	-.37775	-.04882
FB could be used for exchange of literature, presentations, and such	Equal variances assumed	137.025	.000	-4.095	701	.000	-.33545	.08192	-.49629	-.17462
	Equal variances not assumed			-3.963	533.052	.000	-.33545	.08465	-.50174	-.16916
FB could be used to inform current and future students about curricula and programmes	Equal variances assumed	.177	.674	.458	701	.647	.03393	.07409	-.11153	.17940
	Equal variances not assumed			.457	680.822	.647	.03393	.07418	-.11171	.17958

Source: Authors' research

Besides the analysis of students of the previous and current academic year, professors of the Faculty of Economics have been included as well, where there is a comparison of attitudes of teaching staff of the previous and current generation, which was used to attempt to determine the existence of differences in opinion about the way in which Faculty's Facebook page is used.

Table 5. *Group statistics of surveyed professors and associates*

	Professors and associates of the academic 2015/16 and 2016/17	N	Mean	Standard deviation	Standard error mean
Faculty of Economics should have a FB page	Professors and associates of the academic 2015/16	17	4.1765	1.33395	.32353
	Professors and associates of the academic 2016/17	11	4.0909	.83121	.25062
FB could be used to schedule exam terms	Professors and associates of the academic 2015/16	17	3.2941	1.61108	.39075
	Professors and associates of the academic 2016/17	11	2.7273	1.27208	.38355
FB could be used to announce exam results	Professors and associates of the academic 2015/16	17	3.1765	1.74052	.42214
	Professors and associates of the academic 2016/17	11	2.4545	1.21356	.36590
FB could be used to establish interactive communication with professors and associates	Professors and associates of the academic 2015/16	17	3.6471	1.41161	.34237
	Professors and associates of the academic 2016/17	11	3.7273	1.48936	.44906
FB could be used for daily exchange of information between students	Professors and associates of the academic 2015/16	17	4.1765	1.28624	.31196
	Professors and associates of the academic 2016/17	11	4.1818	1.16775	.35209
FB could be used for exchange of literature, presentations, and such	Professors and associates of the academic 2015/16	17	3.9412	1.47778	.35841
	Professors and associates of the academic 2016/17	11	3.8182	1.40130	.42251
FB could be used to inform current and future students about curricula and programmes	Professors and associates of the academic 2015/16	17	4.2353	1.30045	.31541
	Professors and associates of the academic 2016/17	11	3.9091	1.13618	.34257

Source: Authors' research

Based on the results presented in Table 5, we may conclude the following:
■ Professors and associates gave the highest grade for the possibility of using Facebook to exchange information between students, and the lowest grade for the possibility to announce exam results and schedule exam terms.
■ Professors and associates have given lower grades for possible aspect of using Facebook than students have.

■ Average grades for the possibility to use Facebook are lower in the academic 2016/17 than in the academic 2015/16.

In order to determine if there is a differences in attitudes of teaching staff (in the previous and current academic year) in the way of using the official Faculty of Economics Facebook page, we have also used the t-test of independent samples.

The results of the conducted analysis point to the fact that there is not a statistically significant difference between means of observed variables with teaching staff of the Faculty of Economics of the previous and current year.

Even though, in all cases, except for the question of using Facebook to announce results, the conditions of equality of variances have been fulfilled, the two-way significance in the part of t-test in case equality of means is greater than 0.05, we may conclude that there is not a statistically significant difference between means of observed variables and observed groups of surveyed (teaching staff).

Table 6. *Test of independent samples of professors and associates*

		Levene's Test for equality of variances		t-test for equality of means					95% Confidence interval of the difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference	Lower	Upper
Faculty of Economics should have a FB page	Equal variances assumed	1.125	.299	.190	26	.851	.08556	.45139	-.84228	1.01340
	Equal variances not assumed			.209	25.990	.836	.08556	.40924	-.75567	.92679
FB could be used to schedule exam terms	Equal variances assumed	2.872	.102	.983	26	.335	.56684	.57650	-.61817	1.75186
	Equal variances not assumed			1.035	24.820	.311	.56684	.54753	-.56123	1.69492
FB could be used to announced exam results	Equal variances assumed	6.184	.020	1.197	26	.242	.72193	.60329	-.51815	1.96200
	Equal variances not assumed			1.292	25.785	.208	.72193	.55865	-.42685	1.87070
FB could be used to establish interactive communication with professors and associates	Equal variances assumed	.111	.742	-.144	26	.887	-.08021	.55799	-1.22718	1.06675
	Equal variances not assumed			-.142	20.645	.888	-.08021	.56468	-1.25577	1.09534
FB could be used for daily exchange of information between students	Equal variances assumed	.135	.716	-.011	26	.991	-.00535	.48060	-.99323	.98253
	Equal variances not assumed			-.011	23.003	.991	-.00535	.47041	-.97846	.96776
FB could be used for exchange of literature, presentations, and such	Equal variances assumed	.083	.776	.219	26	.828	.12299	.56063	-1.02940	1.27539
	Equal variances not assumed			.222	22.340	.826	.12299	.55405	-1.02502	1.27101
FB could be used to inform current and future students about curricula and programmes	Equal variances assumed	.015	.902	.680	26	.503	.32620	.47976	-.65996	1.31237
	Equal variances not assumed			.701	23.559	.490	.32620	.46566	-.63582	1.28822

Source: Authors' research

Therefore, based on the value of two-way significance (far above 0.05) presented in the part of t-test in case of equality of means, we conclude that professors and associates of the Faculty of Economics (in the previous and current year) are not statistically significantly different for the question of the way in which the official Faculty Facebook page is used.

5. Conclusion

The analysis of opinions of students has shown that there is a statistically significant difference between means of surveyed groups of students for the first statement that the Faculty of Economics should have a Facebook page, and for the possibility of using Facebook for daily exchange of information between students, as well as exchange of literature, presentation and other study materials intended for students.

It is necessary to be emphasized that students have a significantly more positive attitude relating if the Faculty of Economics should have a Facebook page, as well as for the possibilities of using Facebook to exchange literature and other study materials, and the highest average grade was given by students for the possibility to use Facebook for daily exchange of information between students of the academic 2016/17.

The results have also shown that, between the observed groups of surveyed, there is no statistically significant difference in means for the possibilities of using Facebook to: schedule exam terms, announce exam results, and establish interactive communication between students and professors and associates. Considering that, both groups of surveyed students have given the lowest average grade for the use of Facebook to establish interactive communication between students and professors and associates.

The results of the conducted analysis point to the fact that there is not a statistically significant difference between means with observed variables by the teaching staff at the Faculty of Economics in the previous and the current year.

Based on the research results, the following recommendations may be abstracted:
■ Professors and associates at the Faculty of Economics should use the possibility to use Facebook to establish interactive communication with students.

- Facebook should be used as an additional mode of communication through the Internet, along with webmail and the website.
- Increasingly intensive use of Facebook by professors and associates could enable improved communication with students.

Keeping in mind that our research was limited with set aims, we state that we would need the following for the further analysis of the possibility to use Facebook to improve internal public communication in higher education institutions:

- Apply other research methods and techniques, such as online research, focus groups, and such.
- Through such research, other groups of internal public should be also included, such as: alumni, administration, librarians and management of higher education institutions.
- Through such research, other groups of sciences should also be included, and this research should be conducted at other faculties of the University of Tuzla.

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DETERMINING IMPACT OF CORPORATE IMAGE PURCHASING SERVICES FROM INSURANCE COMPANIES

ODREĐIVANJE UTICAJA KORPORATIVNOG IMIDŽA NA KUPOVINU USLUGA OSIGURAVAJUĆIH DRUŠTAVA

Abstract

In the insurance market, the number of competitors, who in various ways attempt to acquire, retain or increase their shares, is constantly increasing. In order to ensure the continuity of business success, insurance companies must differentiate themselves from other market actors, and this can be achieved by creating a clear and positive image. A positive image, which is clearly profiled, can contribute to the allocation of an insurance company from direct market competitors, but also it can eliminate the distance and alienation of insurance companies and target public.
Therefore, this paper has analyzed the influence of corporate image of insurance companies on their business. The data were collected using a questionnaire. Respondents were users of insurance companies' services. Special attention was paid to the impact of the overall corporate image observed through an assessment of respondents according to six aspects of the business activities of insurance companies (service levels, speed and quality of the process, distribution, physical environment, employment, promotional activities) on the purchase of insurance companies' services through the amount of achieved income (achieved insurance premium).

Spearman coefficient of correlation of the rank presentations the connection between the achieved market participation of insurance companies and their business in accordance with the needs of clients, and the kindness of the staff, the expertise of the staff and the speed of service delivery.

Keywords: corporate image, insurance companies, purchase of insurance company services

JEL: M31

Sažetak

Na tržištu osiguranja se neprestano povećava broj konkurenata koji na različite načine nastoje steći, zadržati ili povećati svoje udjele. Da bi obezbijedili kontinuitet poslovnog uspjeha, osiguravajuća društva se moraju diferencirati u odnosu na ostale tržišne aktere, a to se može postići kreiranjem jasnog i pozitivnog vlastitog imidža. Pozitivan imidž, koji je jasno profilisan, može doprinijeti izdvajanju osiguravajućeg društva od direktnih tržišnih konkurenata, ali i otkloniti distancu i otuđivanje osiguravajućeg društava i ciljne javnosti.
Stoga se u ovom radu analizira uticaj korporativnog imidža osiguravajućih društava na njihovo poslovanje. Podaci su prikupljeni primjenom anketnog upitnika. Ispitanici su bili korisnici usluga osiguravajućih društava. Posebna pažnja posvećena je uticaju ukupnog korporativnog imidža posmatranog kroz ocjenu ispitanika prema šest aspekata poslovnog djelovanja osiguravajućih društava (nivoa isporučene usluge, brzine i kvaliteta procesa, distribucije, fizičkog okruženja, zaposleni, promotivnih aktivnosti) na kupovinu usluga osiguravajućih društava promatranu kroz visinu ostvarenog prihoda (ostvarena premija osiguranja). Spearmanovim koeficijentom korelacije ranga prikazana je povezanost između ostvarenog tržišnog učešća osiguravajućih društava i njihovog poslovanja u skladu sa potrebama klijenata, te ljubaznosti osoblja, stručnosti osoblja i brzinom isporuke usluge.

Ključne riječi: korporativni imidž, osiguravajuća društva, kupovina usluga osiguravajućih društava

JEL: M31

1. Introduction

A complete understanding of the phenomenon of image is possible within margins of two postulates – the first *is the shape of cognitive reality*, that is the way in which the public in general, some of its segments, and especially

relevant (target) groups, usually experience things around them, including social structures (organizations), that is, problems related to them; and the second, *image does not occur by the principles of logical establishment of judgement*, that is, as a rational relationship between premise and conclusion, therefore, as a complete experience of reality, general impression filled with aesthetic (emotional) and moral response to that experience (Kurtić, 2001, p. 59).

When determining the concept of image, numerous literature that deals with this or similar field, starts from its Latin origins. However, the word image has gone through a historical development, described and interpreted in numerous cultures. Therefore, image in Latin means a presentation about a certain object or person, a picture, a reflection; in French, image represents a visible look, an appearance of a person or a thing, a picture, an impression, an idea; in English, image means a picture, a real picture, reflection in the mirror, a presentation, an idea; while Americans under image consider a picture of a certain person or a thing, that is a picture made through a presentation (Smajlović, Sinanagić & Ninić, 2016, p. 61).

Considering key and most often applied etymological meanings of a word image, we may determine the following similarities: image implies visible, real and current pictures through a presentation that occurred in human psyche. Historically speaking, use of the word image in economics literature may be observed since 1939 when Dichter used, for the first time, the word image related to a picture of a brand or a personality of a brand, relating to Ivory soap. In marketing literature, the first interpretation of the word image similar to the current one may be found in 1955 when Gdrener and Levy presented image as a hypothetic construction that includes knowledge, presentation and attitudes of individuals in objects within their surroundings (Essig, Soulas de Russel & Semanakova, 2003, p.18).

Image presents a cognitive picture of a company, product, person, process or a situation that an individual shapes based on the all-inclusive previous experience, attitudes, opinions and visions that are more or less synchronized with real characteristics, while the role of communications, especially public relations, publicity and advertising, is especially significant in formation of image (Kesić, 2003, pp. 102-103). Many authors state that image of an enterprise is actually a network construction made upon the interaction of numerous experiences, beliefs and knowledge people have in relation to a certain enterprise (Worchester, 1997, p. 146).

Conceptually speaking, image relates to the picture of an enterprise that occurs in the eyes of its internal and external public, and it is very necessary that the picture is identical, synchronized and homogeneous at both the internal and the external level. The interaction and the multilayered communication represent a dominant significance of modern communication, and therefore, the dominant direction in the process of creation and transfer of positive image. Marketing communication is directed towards creation of a desired positive image as well as towards the attempt of giving a precise answer to the question in what scope is the image truly useful to an individual or an enterprise, where could it be used in the best way, and which communication means and methods are best in creating a positive and quality image.

Image is connected to numerous physical attributes, as well as to behaviouristic attributes of an enterprise itself, such as the enterprise name, its architecture, diversity of its products and services, its tradition, ideology, and the complete impression about quality communicated by each employee towards his/her clients, that is, the target communication groups (Nguyen & LeBlanc, 2001, pp. 303-311).

2. Previous research

Creation and positioning of corporate image is the result of numerous activities that greatly depend on management capacities, available resources (financial, development, and human), and on size of insurance company, equality as on attitudes, opinions and presentations of the greatest number of insured about a certain insurance company. Considering that it is possible to create a strong image only though correct image creation and management, image creation and management becomes an important segment of marketing activities of insurance companies.

Successful image creation and management in insurance companies requires knowing its components and processes of perceptions occurring in client cognition. Considering the conception of image, Kesić begins from the following basic components: image – object (object of trade on a market: a product, a service, an idea, a city, and such), image – subject (target public to which the object is intended for), stimuli mix (all information emitted by the object), and receptive mix represents total success of stimuli mix in creation of or support to image (Kesić, 2003, p. 104).

It should be emphasized that an image of an insurance company should be clearly displayed, that is, it should be ambiguously presented: who is that, how is it organized, what is its mission (what does it advocate for), what are its goals, who are its beneficiaries, what are its economic indicators, and what is its reputation (Gregory, 1991, p. 97).

When corporate image is in question, nothing is irrelevant, and when creating an image of an insurance company, special attention must be paid to the six basic elements (Figure 1). As it may be seen from Figure 1, basic elements of image of an insurance company are: manager image, operational policies, organizational structure and organizational culture, market identity, image of an insurance service and visual identity.

Image of an insurance company is inseparable from its identity. In practice, corporate identity and corporate image is often used as synonyms. Identity of an insurance company is a sum of all ways in which is presented in whole public, and image is what public believes an insurance company to be (Zelenika & Babić, 2005, p. 504).

Considering that public perception does not always have to express the actual organization profile, a desired image may be misunderstood. Therefore, it is necessary to explain the concept of corporative identity of insurance companies in order to recognize and use it on perception of broader public. Image, as a way in which clients perceive an insurance company, is not always able to be controlled, while identity is. With the help of well-planned and superior visual effect, identity of an insurance company enables management to transfer onto the public – clients, stockholders, personnel, and other stakeholders – what and how they desire to be perceived.

Figure 1. *Element of image of an insurance company*

In the past several decades, a great interest was shown for researching identity by expert and scientific public from the field of marketing. While the marketing experts focused on the concept of corporative identity, expert and scientific public from the field of behavior has been developing organization identity. We must mention also that expert and scientific public from graphic fields used an expression "graphic identity" which was founded on representation of visual identity of an organizational system (Balmer & Wilson, 1998, p. 12).

Corporative identity, therefore, describes how an insurance company sees its organization. Image is opposite to that, a picture of an insurance company in the eyes of public. An ideal state that insurance companies strive for is the overlap of identity and image. Therefore, corporative identity and image should be adequately designed, guided, and constantly managed.

With the help of corporative identity of insurance companies and its instruments (corporative design, corporative behaviour and corporative communication), a certain picture of insurance companies in public is attempted to be created.

Corporative management of identity has a role to realize a certain reputation with stakeholders that would be expressed by purchasing products and services of such company.

A large number of studies has confirmed that reputation has an evident impact on sales of products and services.

Literature relating to corporative identity sees corporative management of identity as a combination of historical roots, personality of a company, corporative strategy, and three parts of a mix of corporative identity (behaviour of organization members, communication and symbols) along with organizational reputation (Riel & Balmer, 1997, p. 342).
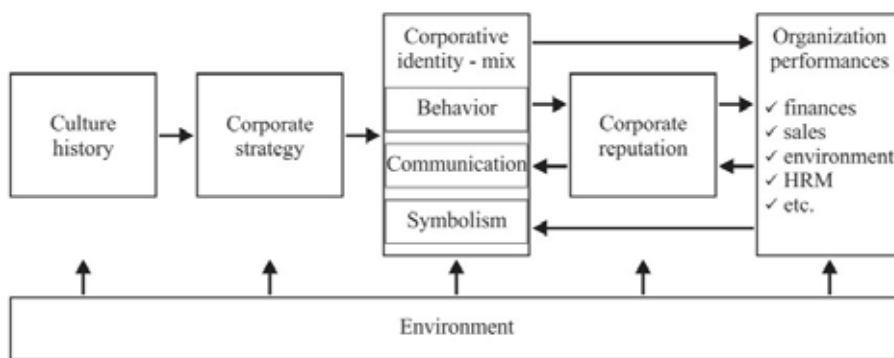
Figure 2. *Interaction between corporative identity form, reputation, improvement and organization performances*

Source: Riel & Balmer, 1997, p 342

When speaking of tradition of insurance companies, it represent a security factor with clients, in the world of turbulence and great change, a life span of an enterprise is shortened, and therefore a tradition of long business implies stability of an enterprise. Clients search for insurance companies that offer a picture of reliability though their business, and that is why tradition is an important element of creation of positive image of an insurance company.

Organization values could be compared to foundations of a house (as a building), because, even though they are invisible, they undeniably exist, and the stability of the whole house depends on their stability. Namely, each insurance company, though its business, is led by certain basic beliefs and attempts to realize set goals, and those beliefs exactly are transferred into a relatively permanent business practice, that is, organization values (Malbašić, 2011, p. 422; as cited in: Woodcock & Francis, 1989).

Communication, as an instrument, is one of the fundamental functions in any organization, and so in insurance companies as well. It relates to the process of transfer of information, ideas, thoughts, opinions and plans amongst individuals or part of an insurance company, and its purpose is to direct those actions in order to ensure its well-being (Sušanj Šulentić, 2014, p. 62). Emotional competence is an important factor in successful business of insurance companies. Such intelligence is basically made of skill to manage self and skill to make successful cooperation with others. Both of those are important, not only for business success, but also generally to achieve life goals. Emotional competency represents ability to understand own emotions, ability to listen to others and to empathize, and ability of productive expression of emotions (Loka, 2012, p. 166; as cited in: Steiner 1997). Performances are usually seen in terms of output, that is, some achievement of quantitative goals (Armstrong, 2006, p. 7). However, performances are not only what is achieved but also the way in which it was achieved. A high levels of performance is a result of adequate behavior and effective use of requested knowledge, skills and competencies. Business indicators, financial and non-financial, have a goal to exactly determine the level of quality of organization and its individual functions, and to position the organization on its path of development and growth (Jovetić, 2015, p. 131).

3. Research methodology and analysis of the results

Primary research was conducted using the surveying method through a questionnaire as a form to collect data. Surveyed were beneficiaries of insurance companies. Data collection was conducted in the period from October to November of 2017.

The paper should be able to answer to two set goals, that is, to:
■ determine the significance of corporative image for insurance companies, and
■ determine how much some business dimensions impact the market share of insurance companies.

Therefore, a research hypothesis has been set in the paper, and it states: *Corporative image has a significant impact on purchasing services from insurance companies.*

The level of significance of business dimensions will be observed through seven factors that have a character of immediate interaction of insurance companies – clients, and significant impact will be considered if more than 50% of observed factors is proved significant statistically. There is a total of 100 surveyed included in the research, and from that, there were 52% aged from 32 to 55, and 30% aged from 18 to 31, and 18% aged over 56 years. As it may be seen in Table 4, a somewhat greater number of male surveyed (62%) was surveyed in comparison to female surveyed (38%).

Table 1. *Sample of surveyed included in the study*

Socio-demographic characteristics		n (%)
Gender	female	38.0
	male	62.0
Age	from 18 to 31	30.0
	from 32 to 55	52.0
	56 and over	18.0
Level of education	Primary school	0.0
	Secondary school	43.0
	College	9.0
	University	48.0
Average monthly income per household (BAM)	up to 800	11.0
	from 801 to 1500	40.0
	from 1501 to 2200	23.0
	2201 and over	26.0

Source: Authors' research

The greatest percentage of surveyed (40%) has an average monthly income per household between 801 and 1500 BAM, and the least percentage (11%) had an average monthly income up to 800 BAM. A greater percentage of surveyed had a university degree (48%) and a secondary school diploma (43%).

Surveyed with a university degree usually had greater average monthly incomes in their household in comparison to surveyed with secondary school diplomas (Table 2).

Table 2. *Average monthly income by level of education*

| Average monthly income per household (BAM) | Level of education | | | | | | Total | |
| | SS | | C | | U | | | |
	n	%	n	%	n	%	n	%
up to 800	8	18.6	1	11.1	2	4.2	11	11.0
from 801 to 1500	17	39.5	5	55.6	18	37.5	40	40.0
from 1501 to 2200	9	20.9	1	11.1	13	27.1	23	23.0
2201 and over	9	20.9	2	22.2	15	31.3	26	26.0
Total	43	100.0	9	100.0	48	100.0	100	100.0

Source: Authors' research

Population of female surveyed included in the research are somewhat of greater age in comparison to male surveyed (Table 3).

Table 3. *Average monthly income by age*

| Age | Gender | | | | Total | |
| | female | | male | | | |
	n	%	n	%	n	%
from 18 to 31	5	13.2	25	40.3	30	30.0
from 32 to 55	23	60.5	29	46.8	52	52.0
56 and over	10	26.3	8	12.9	18	18.0
Total	38	100.0	62	100.0	100	100.0

Source: Authors' research

In order to give an answer to the set research hypothesis stating that corporative image has a significant impact on purchasing services from insurance companies, variables were connected, which determine different image dimensions of insurance companies reflected through market share of insurance companies in FBiH realized in the 3rd quarter of 2016 and total premium of insurance companies during 2015.

Table 4 presents the results of the analysis of connection between market share of insurance companies realized in the 3rd quarter of 2016 and sympathies of surveyed towards insurance companies, expressed through the rate of remembering their names and the percentage of recognition of their promotive messages.

Table 4. *Connection of market share to the percentage of remebering and percantage of noticing promotive message of insurance companies by clients*

			Market share of insurance companies (3rd quarter of 2016)
Spearman´s rho	First option of remembering insurance company	Correlation coefficient sig. (2-tailed) N	**0.600*** 0.039 12
	Rate of remembering promotive message	Correlation coefficient sig. (2-tailed) N	0.438 0.154 12

* Spearman´s rank correlation is significant at the 0.05 level (2-tailed)

Source: Authors' research

The following table presents realized results of one-factor analysis (One-way ANOVA) impact of complete corporative image on market positioning of insurance companies observed through market share by height of realized total insurance premium.

Table 5. *Impact of complete corporative image onto market positioning of insurance companies*

	Sum of squares	df	Mean square	F	Sig.
Between Groups	.645	8	.081	16.030	0.22
Within Groups	.015	3	.005		
Total	.660	11			

Source: Authors' research

Through Spearman's rang correlation, a link, between realized market share of insurance companies and their business according to client needs, staff kindness, staff expertise and service speed, is presented in the following table.

Table 6. *Connection of market share of insurance company to quality of different business dimensions*

Business dimensions	Market share		
	Spearman´s rho Correlation Coefficient	Sig. (2-tailed)	N
Constant introduction of new products	0.425	0.168	12
Business according to client needs	**0.618***	0.032	12
Staff kindness	**0.658***	0.020	12
Staff expertise	**0.582***	0.047	12
Service speed	**0.735****	0.007	12
Security of insurance company	0.521	0.082	12
Confidentiality of insurance company	0.474	0.120	12

* Spearman´s rank correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Source: Authors' research

As it could be concluded from Table 6, that is, as it is confirmed by Spearman's rang correlation coefficient and level of significance, a significant direct correlation between realized market share of insurance companies and their seven observed business dimensions was proven, dimensions as: constant introduction of new products, usiness according to client needs, staff kindness, staff expertise, service speed, security of insurance companies and confidentiality of insurance companies. Namely, we may see that four out of seven observed factors (57.14%) are import, and those are: business according to client needs (rho=0.618, p<0.032), staff kindness (rho=0.658, p<0.020), staff expertise (rho=0.582, p<0.047), and service speed (rho=0.735, p<0.007).

4. Conclusions

Complex market conditions of today force insurance companies to rationalize their business activities in order to make their own operations more efficient and more profitable with the least possible rate of operational risk, and in that way to ensure own survival, growth and development in a long time period. Unlike the business ambiance that ruled in a more recent time period (end of the twentieth century), market conditions of today are characterized by intensive turbulence, uncertainty and insecurity, and therefore, insurance companies attempt to strengthen their market position and business relations with a growing level of positive perceived image as one of the foundational values for individuals, as for insurance companies also.

Based on the conducted research and analysis of collected results, we may conclude that set goals were realized and significance of corporative image for insurance companies was determined, and how individual business dimensions impact market share of insurance companies was determined as well. The level of significance of sig.=0.035 confirms the impact of corporative image, observed through surveys according to six aspect of business impact of insurance companies on purchasing services of insurance companies observed through the height of realized income.

Also, four out of seven observed business dimensions (factors), making 57.14% statistically confirmed through Spearman's rang correlation (business according to client needs rho=0.618, p<0.032; staff kindness rho=0.658, p<0.020; staff expertise rho=0.582, p<0.047; service speed rho=0.735, p<0.007), through observed research, it confirms a significant direct correlation between the realized market share of insurance companies and observed business dimensions.

Based on presented research results and surveyed opinions, we may conclude that the research hypothesis has been confirmed, that is, corporative image has a significant impact on purchasing services from insurance companies.

It should be stated that the conducted research has certain limitations that reflect in relatively small sample of surveyed, that is, for a deeper research of the subject field on the market of placement of insurance companies products, we soul need to include a greater number of surveyed and to conduct the research on a broader market space. Also, it would be necessary to conduct a more detailed analysis related to business dimensions that influence better placement and realization of a greater market share of individual insurance companies. These lacks in the research also represent a recommendation for possible future researches.

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IMPACT OF DATA DRIVEN PERSONALISATION ON BUSINESS SUCCESS OF ENTERPRISES

UTICAJ PERSONALIZACIJE TEMELJENE NA BAZAMA PODATAKA NA POSLOVNI USPJEH PREDUZEĆA

Abstract

Contemporary businesses are facing the issue of data driven personalization, which changes the essence of quality of interaction between enterprises and customers. Knowledge about the application of data driven personalization is a rather important factor impacting the success of a business. One of the methods that can be used for improving business success is discovery of hidden knowledge, respectively the frequent occurrence patterns in the data.

Purpose of this paper is related to application of data mining methods to increase usability of the data and process of transforming data into knowledge. Field research included collecting data from primary sources within 150 enterprises in Bosnia and Herzegovina. Thirty variables regarding the areas of enterprise profile and data driven personalization were considered by applying instruments of questionnaire and interview. The prediction of business success was experimentally tested by applying the following four algorithms: J48, IBk, MLP, and NB.

Based on application of the above mentioned algorithms, research results show that the highest percentage of prediction of business success (74%) was reached with J48 algorithm. Other results of prediction were 62%, 52% and 64% for IBk, MLP, and NB algorithms, respectively. Authors have shown that business success can be credibly predicted with tested algorithms that are applied on data of enterprise profile and personalization based on databases.

Sažetak

Poslovni svijet se danas suočava sa velikim i još uvjek nedovoljno istraženim mogućnostima personalizacije temeljene na bazama podataka koje suštinski mijenjaju kvalitetu interakcije poduzeća s potrošačima i njenog uticaja na poslovni uspjeh preduzeća. Znanje o primjeni personalizaciji koja se temeljeni na bazama podataka je jedan od segmenata koji su ključni za uspješnost poslovanja preduzeća. Jedna od metoda koja se može iskoristiti za poboljšanje uspješnosti preduzeca je pronalaženje skrivenih znanja, tj. učestalih obrazaca pojavljivanja u podacima.

Svrha ovoga rada jeste primjena metode data miniga na povećavanje upotrebljivosti podataka i proces transformacije tih podataka u korisno znanje. Terensko istraživanje obuhvatilo je prikupljanje primarnih podataka iz 150 preduzeća. 30 varijabli iz domena profila kompanije, upotreba baze podataka kupaca i personalizacije temeljene na bazama podataka je prikupljeno metodama anketiranja i intervjua. Eksperimentalno je testirana uspješnost predikcije uspjeha preduzeća, primjenom sljedeća četri klasifikaciska algoritma: J48, Ik1, MLP i NB.

Na osnovu primjene predhodno navedenih algoritama, dobiveni rezultati pokazuju da je najveći procenat tačnosti 74% ostvaren pomoću J48 algoritma. Procenat tačnosti ostalih algoritama je 62%, 52% i 64% za IBk, MLP and NB algorithms, respektivno. Autori su pokazali da se poslovni uspjeh preduzeća može kredibilno predvidjeti testiranim algoritmima koji su primjenjeni na podatke iz profila preduzeća i personalizacije temeljene na bazama podataka.

1. Introduction

"Once upon a time, it was totally usual to buy food, textile, small-wares, household appliances and many other things at a local corner shop. Small shops achieved what many of the current companies can only dream of today. They knew the names, wishes, preferences and domestic circumstances of their clients and were able to provide targeted suggestions related to future buys. The owner would have known what was it the clients planned to purchase in the future, and would then gradually change the assortment of products to respond to the precise needs of customers. Would they have

gone shopping anywhere else? That was unthinkable!" (Kotler *et al*., 1999, p. 227).

Personalisation, as an ability to provide an adjusted content and service to customers, based on knowledge of their behaviour and preferences, has always been a rather important marketing tool. Personalisation achieves its full meaning through development of new information and communication technologies, mass use of internet and its implementation in e-shops. One of the most promising IT trends in processing of business data is the use of databases with the aim to deliver the right products and services demanded by their customers, at precise time and location of their desire. This is the data driven personalisation. Personalisation has been used for a long time, but it is only now that the e-shop becomes a leading power in defining the next generation of customer behaviour, through use of highly sophisticated personalisation.

Information economy continuously generates an increasing number of innovations. Companies have the ability to have communication with clients based on their behaviour in real time, their preferences and data. As the IT is becoming a more sophisticated through use of data and access in real time, the role of automated personalisation grows its importance in the business strategy of both large and small and medium enterprises. "The final goal of any enterprise is to satisfy the exact demand of their customers, efficiently, quickly and without needless questions. Automated personalisation is the leading technology used by such companies" (Pyle, 1999, p. 9).

2. Overview of current studies

Personalisation has recently been a topic of great interest for many researchers, and one can say that there is a large number of definitions by eminent experts in this field of what the personalisation is. The definitions are very alike and usually very lengthy; one of the shortest, by Risch (2007) is: "Personalisation is directed towards fulfilment of special demands of users or buyers" (Adolphs & Winkelmann, 2010, p. 327). Generally speaking, personalisation understands targeted fulfilment of customer demands. Personalisation can be directed to people (buyers or employees), organisation roles in a enterprise and suppliers. Nonetheless, personalisation is a much wider and a more complex term, thus (Schubert, *s.a.*) says: "Personalisation is a selection or filtering of information on individual's interests or products, using information on the given individual (their buyer profile)".

On the other hand, a closer understanding of personalisation, covering the largest area of its application, connects personalisation tightly to use of sophisticated information and communication technologies (ICT) and it focuses on companies skilled in exploitation of internet or doing business solely as e-shops. Personalisation become important due to large amount of products available to buyers and the need for simplification of the search processes. Buyers' needs significantly differ one from another, and limited resources do not allow for a enterprise to offer too many versions of a product. With improved technologies in a more flexible production and development of digital product, limitations in providing customised products are significantly relieved. At the same time, personalisation is made easier through improved technology in estimating customer's wishes. Furthermore, drastically reduced information technology costs (Moore's Law), combined with development of database technology, significantly changes the economy of gathering, storing and processing of customer data. Low costs increase the enterprise's ability to deliver a customised product.

"What seemed possible only for a corner shop, whose owner knew all the buyers personally, now reaches a new potential through on-line media, where each buyer leaves his/her trail and "teaches" the system how to treat them differently to other buyers. This form of personalisation becomes doable with the use of predefined rules built in into the e-shop environment" (Adolphs & Winkelmann, 2010, p. 227).

Data driven personalisation fully leans on modern ICT, whose expansion has accelerated and simplified the key processes of personalisation, accompanied by significantly lower costs, resulting in an increased use of personalisation in companies. "E-shops, technical assistance of transaction activities, is a joint field for application of methods and techniques of personalisation" (Turban *et al*., 2002, according to Adolphs & Winkelmann, 2010, p. 227). From the aspect of personalisation, transaction data related to the consumer are of utmost importance and they are being gathered during their interaction with the enterprise. These are the data gathered during sale, requests for offer or visit to the enterprise's web site, when the buyer goes actively through the offer, regardless of fact whether a purchase was realised on-line or not. This understands a large volume of data whose gathering, storage and processing require application of sophisticated information technologies based on high quality databases.

"One of the main advantages of companies doing business on-line is the possibility to collect large amounts of data on a buyer, processing of the data into useful information and delivery of superior benefits to the said buyer. Information is used to adjust products or services to meet buyer's preferences, leading to a higher satisfaction and buyer's loyalty. This process, which uses the information on buyer to deliver an adjusted solution, is called personalisation" (Murthi & Sarkar, 2003, p. 1). In addition to their theoretical aspect, a large number of studies on practical application of personalisation contributed to defining the main problems and doubts managers face when introducing personalisation in their companies.

The study published by the Forrester Consulting Group (eMarketer, 2014, p. 1) in May 2014, along with many other similar studies, one can conclude that the largest problem managers are faced with is the one related to data protection. Furthermore, the companies are faced with the issue of building a unique approach to data of each individual client, within the available sale and marketing channels.

According to the Forbes Insights (Diorio, 2016, p. 1), in an article analysing the results of the PWC Digital Service Group's studies, budget is the key challenge in the personalisation implementation process. Difficulties in convincing the management on the need of investment into data driven personalisation, along with accepting personalisation as a significant change in how a enterprise does its business arise from this challenge. Once these obstacles are overcome, the next step in implementation of personalisation is the selection of a highly sophisticated technology and platform offered by suppliers.

Personalised communication requires provision of quality analytical data and personnel talented in planning and delivery of personalised programmes. In addition to the given studies, in the same year the Expirian Data Quality (ExperianDataQuality, 2016, p. 1) conducted an excellent study on personalisation, also involving the challenges faced by the enterprise during the personalisation application process. The study was conducted in the USA, with participation of 250 companies of different size and from different industries. Comparing the results of this study with those of the PWC Digital Service Group, one can conclude that they differ on the issue of the key challenge of personalisation. This is understandable taking into the account different approaches and techniques used for research. Nonetheless, 28% of

managers participating in this study emphasise the budget to be a limiting factor. The same study included the research on growth and profitability trends in introducing personalisation in the companies. The results show that the number of companies deciding to implement personalisation increase for 27% percent in each year. The key reason for this is to improve the customer relations, which follows increase of income.

In terms of usefulness of personalisation, PWC Digital Service Group comes to similar results. Their study states that 94% of executive directors consider personalisation to be the key or of utmost importance in winning the customers over. The Exparation Data Quality's study, on statistics web portal (The Statistics Portal, 2014) using studies from more than 18,000 sources, states data from studies on the importance of personalisation to the success of a brand. Study was implemented in May 2014 in the USA, interviewing managers in the field of digital marketing. A total of 77% of managers considers personalisation to be extremely or very important for short-term success of a brand. On the other hand, as much as 83% consider personalisation extremely or very important for long term success of a brand. Only 1% of managers considers personalisation unimportant to long-term success of a brand, while 2% consider it unimportant to short-term success of a brand. At the end of this overview of literature and studies of personalisation, we will present the results of Infosysa's study (Infosys, 2013) including 1,000 buyers and 50 retail companies. This study determined a rather high level of usefulness of personalisation in different aspects of buying process, taken from the most important perspective - the one of a buyer. A total of 59% users claims that personalised services have had a significant impact on purchasing.

3. Methods and results of empirical research

Within the framework of primary research (field research), the data was collected by method of interviewing, using a questionnaire as a technical tool for data gathering. Interviewees included companies, *i.e.* members of management or persons responsible for implementation of personalisation in the enterprise.

Primary data was gathered through interviewing, using the questionnaire as a tool for this method of research. Questionnaire was distributed electronically to senior managers, IT managers of companies in Bosnia and Herzegovina. Primary corpora contains of 29,953 businesses registered as limited liability companies or stock corporations.

Data on elements of the primary corpora was gained through use of electronic registries of Bosnia and Herzegovina's legal registries, business portal E-Kapija and LRC. A systematic sample was used for the the final selection of companies included in the empirical research.

Taking into the account the fact that the elements within the primary corpora were sorted alphabetically, *i.e.* feature independent to the research, the preciseness of systematic sample equals simple random selection. Systematic sample extracted 150 companies and the first element within this interval was selected by application of random number tables.

Gathered data were processed using Windows Excel 2013 programme package. The success of prediction of enterprise's success was experimentally tested by application of the following four classification algorithms: J48, Ik1, MLP and NB. The created analysis was presented descriptively, tabularly and graphically, and was interpreted in relation to the given hypothesis with the purpose of making a conclusion and checking the fulfilment of the overall goal.

3.1. Indicators and variables of empirical research

Variables viewed within the framework of empirical research are the following: Independent variable is data driven personalisation. Data driven personalisation is selection or filtering of information on an individual's interests or products, using information on the individual (their buyer profile). Information presented on screen is adjusted to the user. From technical point of view, meta-data of products and information on interests correspond to user's meta-data stored in the buyer's profile (Shubert, *s.a.*). They include redesigning of basic organisation resources, processes and configuration of the offer, in order to best respond to buyer's demands. Creation and delivery of personalised solutions to all interested parties results with a high level of enterprise's efficiency, followed by keeping the existing and acquiring new customers who are satisfied and loyal. This makes personalisation an imperative for each enterprise. In the age of ICT, personalisation becomes a powerful tool for communication with clients, it is affordable to small and medium enterprises, leads to higher competition and, consequently, enterprise's profitability.

Independent variable indicators are feature of user data, categorised in three groups in the personalisation process: personal data, demographic data and transaction data.

Dependent variable is related to the business success of an enterprise. Business success of an enterprise can be viewed and defined from aspects of different qualitative and quantitative indicators. Universal indicators for all aspects of success do not exist, and the reasons why companies present their business successes are plentiful. Generally, those indicators could be divided into financial, visible from the financial reports of the enterprise, and non-financial, which are more difficult to be exactly proven using the official reports of the enterprise. This division could be done through use of economic terms of hard and soft variables. Hard variables can be precisely presented by numbers, with ROI, net profit, sales income growth, gross earning per employee and many others being the typical ones. Soft variables are related to creativity, motivation, efficiency and other indicators which are outside of the reach of traditional indicators. Although the non-financial success indicators are ever more present in the business world today, this paper uses financial indicators, reaching a safer precision of measurements of the research results. Indicators of dependent variable are growth of sale revenues, and gross earnings per employee.

3.2. Data sources

The research included collection of data by use of secondary and primary sources. Secondary sources were related to the available, relevant literature in the field of data driven personalisation, databases and marketing of databases. Scientific and research papers were used, as well as publications, doctoral thesis, textbooks, reports and other journals, in Bosnian and English languages. Special attention was paid to theoretical prepositions and ideas of authorities dominant in the field of research, such are Adomavicius, Tuzhlin, Petra Schubert and others. In addition to the above, we used the most recent findings of researches in this field. When selecting scientific and research papers, we took into the account credibility of authors and journals where papers had been published. The data from secondary sources were used to create an overview of earlier research and theoretical framework for the master thesis. The primary data was gathered through interviewing, using the questionnaire as a tool for this method of research. Questionnaire was distributed electronically to senior managers, IT managers of enterprises in the area of Bosnia and Herzegovina. Questionnaire was distributed electronically, through an email containing the link to the questionnaire. The questionnaire was made using the Google Drive application for creation of on line surveys. After completing the questionnaire, the said is automatically

returned to the pollster. Interviewees were the persons managing enterprises or those responsible for the process of personalisation in the enterprise.

The survey was implemented in the area of Bosnia and Herzegovina in the period from the 5th April 2016 to the 14th of June 2016. Although electronic questionnaire is the fastest way of doing a survey, it took a while due to lack of cooperation by enterprises included in the sample. Geographically, there have been some limitations; the number of enterprises from Republika Srpska does not correspond to the percentage of the enterprises from Republika Srpska in Bosnia and Herzegovina. Percentage of enterprises from Republika Srpska participating in the survey is 16%, which is much lower than what it realistically is. This limitation should not have any impact on the results of the research, having in mind that the economies of Republika Srpska and of the Federation of Bosnia and Herzegovina are in approximation.

3.3. Determining type and size of sample

A systematic sample was chosen for this research, as it presents the logical and best sample considering the features of the primary group and the availability of databases. Systematic sample belongs to the group of samples based on probability theory. "Systematic sample is often applied in economic research due to the simplicity in selection of elements and lower costs. The level at which the systematic sample will be represented depends on the sequence of elements of the primary group. Preciseness of the systematic sample equals simple randomising where the elements of a group are randomly ordered, *i.e.* when they are arranged according to a feature not depending on the one being studied" (Fazlović, 2013, p. 144).

The on-line register of BH Izlog was used as the main group of elements. It contains 29,953 (*N*) enterprises listed alphabetically, *i.e.* a feature that does not depend on the studied feature. A systematic sample of 150 (*n*) elements was chosen from this group, where the interval of selection, i=N/n, was 199.69, and rounding to 200 did not cause the feature of non-repetition of same elements in the sample. Applying the random number table, the first element - enterprise - was chosen and each following element was acquired by adding the number 200 (*n*) to the previous number. Bosnia and Herzegovina's legal registries and those of E-kapija were used as auxiliary ones, for the purpose of acquiring more precise data on enterprises, such as address, telephone number, annual income, number of employees and similar.

Limitations faced when surveying the enterprises related to a very poor response. In the event where an enterprise in the register would not respond, we would have contacted the enterprise on a number under the given and should that not respond, then the one on a number above the given. Legal entities in the primary group, organisations based on their legal status, registered as limited liability companies or stock companies.

3.4. Methods and techniques of the research

Survey, as the method most frequently used for this purpose, was selected as technique used for collection of primary data. Use of this technique provided the exact data related to use of databases and personalisation in enterprises, as well as data on perception, opinions and attitudes of interviewees. The selected instrument of research was survey, in accordance with the survey technique. It "presents a certain number of questions asked in writing or in vivo, with the aim to obtain an answer to be used to solve the research problem" (Fazlović, 2006, p. 30). Questionnaire was created as an on-line application distributed electronically (e-mail) to the interviewees. This method of surveying provided the use of a large primary group from all over Bosnia and Herzegovina, because geographic dispersion did not present a problem. Save two introductory questions, related to the name of enterprise and number of employees, the questionnaire used the method of proposed answers (questionnaire with closed questions). In this way, the time required to fill out the questionnaire was maximum 10 minutes, while some of the interviewees stated they needed only 5 minutes to fill out to answer the questions.

Apart from the introductory part with the basic data on the enterprise, the survey consisted of three groups of questions. The first part of the questionnaire focused on the use of buyers' databases, in order to understand level and purpose of using databases in operations. The second part had questions on personalisation in general, for the purpose of gaining knowledge on perception of personalisation by managers of enterprises in Bosnia and Herzegovina, and its use in operations. The third part was directed to data driven personalisation and use of web pages for personalisation of products and services of an enterprise.

When elaborating theoretical and methodological results of the observed problem, and certain applicative considerations, we used deduction method,

analysis and synthesis method and method of comparison. Gathered data were processed using Windows Excel 2013 programme package. The created analysis was presented descriptively, tabularly and graphically, and was interpreted in relation to the given hypothesis with the purpose of making a conclusion and checking the fulfilment of the overall goal.

3.5. Personalisation and selection of classifiers

What makes the data mining approach different to other approaches to personalisation, is not the use of specific algorithms, but type-based definition of a sequence of activities in the knowledge discovery. Therefore, the use of CRISP-DM (Cross Industry Standard Process for Data Mining) methodology (Chapman *et al*., 2000, p. 6; Banjanović-Mehmedović, 2011, p. 26) provides for an overarching method of aligning different data and providing for the task of personalisation to be conducted as good as possible through creation of the most precise models.

Generally, the goal is to solve the problem of differentiating samples of different classes. The model resulting from it is the one that makes conclusions of a unique aspect of the dependent variable based on combination of independent variables. The selection of variables from the available group of data, influences precision and accuracy of generated prediction models.

The following classifiers were used in this paper (Banjanović-Mehmedović, 2011, p. 45): Decision Trees (J48), k Nearest Neighbours (Ibk), Neural Network (MLP) and Naive Bayes (NB). The use of these algorithms provided for creation of classification models, whose goal was to forecast the class (of a business success of an enterprise), to which a new sample will belong. The selected four classification techniquest are used to provide for identification of the most appropriate method to predict the business success of an enterprise. Procedure of analysis was done using Weka (Witten *et al*., 2016, p. 365), open-source data mining tool.

Decision Trees are the most used classification techniques and they include several ways of creating trees used for classification and easy to interpret. This paper used C4.5 algorithm. The lead idea of this algorithm is to keep dividing the space of the feature until each sheet is filled out with one interruption criteria. In other words, until all branching ends with leaves determining the class to which the samples belong. Fulfilment of a criteria is not possible if

the data is not harmonised. Solution to this problem lies in the selection of the most frequent class.

Advantages of the Decision Trees classifier are (Banjanović-Mehmedović, 2011, p. 57): simplicity and easy interpretation, possibility to work with variables of numeric and category-like values, possibility for quicker classification of new examples and flexibility.

IBk algorithm is implementation of the methods of the k nearest neighbours. This method falls into the category of so called lazy methods, because it does not produces the model, but the new samples are classified upon their arrival. The lead idea of this algorithm when classifying a new sample, is to seek for most similar k, *i.e.* nearest in terms of distance, among the memorised samples (Wu *et al*., 2008, p. 6).

A new sample is classified into the class to which the majority of samples from k-nearest neighbour belong, where closest neighbours are given the largest importance. Should the samples have only numeric features, the comparison of distance does not present any issue. Nonetheless, with nominal features, more complex methods of measuring distance are sometimes used. The issue faced in use of this algorithm is speed, because in each classification, every new sample must be compared to all others.

Multilayer Perceptron (MLP) algorithm is one of the most used and known neuron networks (Banjanović-Mehmedović, 2011, p. 194). The network contains of a group of sensory elements making the entry layer, one or more hidden layers of process elements, and the exit layer of process elements. MLP is rather suitable for approximation of classification functions (when the knowledge of relation between entry and exit feature is scarce). An example defined with a vector value of feature is copied into one or more classes.

Naive Bayes' (NB) algorithm is a simple method for classification, based on probability theory, *i.e.* Bayes' theorem (Witten *et al*., 2016, p. 271). It was called "naive", because it simplifies the problem leaning on two important prepositions: it assumes that the prediction features are conditionally independent with known classification and states that there are no hidden features with a possible impact on the prediction process. This classifier presents a promising approach to probabilistic discovery of knowledge, and provides for a very efficient algorithm for classification of data.

Evaluation results arising from deep data anlysis, is primarily based on measurement of its efficiency, *i.e.* evaluating the ability of classifiers to correctly classify many samples not previously included in the process of model development. Therefore, it is unusual to use all available samples during the process of model generation, and that can lead to imprecise estimation of frequency of errors, due to errors caused by the selection of the group. The main method to avoid such anomalies is multiple repetition of evaluation process on the test group, using different randomly selected groups for learning and testing, and averaging the estimated frequencies of errors (Kohavi, 1995, p. 1). In the event where a group of data for construction of a model is small, then it is recommended to use the method of *N*-fold cross validation where the group of data is divided into N disjunctive sub-groups of approximately the same size.

The method of cross validation is based on this principle, along with a particular swap of groups of data for learning and testing in each iteration. This paper used 10-fold cross validation (James *et al*., 2013, p. 176). In the process of 10-fold cross validation, the initial group of samples collected randomly was divided into 10 different partitions similar in size.

The procedure itself is iterative, where one iteration uses 9 partitions as a learning group, while constructed model is tested on the remaining partition, being the test group. The procedure is iterated 10 times, providing for every partition to be a test group once. The average frequency of error in all 10 iterations presents the evaluation of the real frequency of mistakes of the classification model. When dividing the initial group of samples into 10 partitions, the process of random selection is often modified to ensure representation of classes in each partition. This procedure is called stratification, and its main purpose is to improve representation of each partition. Complexity of evaluation of classification model through this method directly depends on the number of partitions, i. e. of iterations in cross validation, as each iteration involves separate construction and testing of the model.

3.6. Comparing the classification algorithms

Previous chapter gave the overview of the used classification algorithms. The aim is to construct a model able to foresee affiliation to a class of business success of an enterprise, based on the collected data.

A. Evaluating significance of input features

In order to reach the best possible performance, it is needed to carry out a process of data preparation, as a phase in implementation of CRISP-DM methodology (Chapman *et al.*, 2000, p. 6). Preparation of data involves techniques of data reduction, whose goal is to reduce complexity of data, to detect and eliminate irrelevant data, and elements of noise from the data (Zhang, Zhang & Yang, 2003, p. 377). One of the most frequently used techniques in data processing for data mining is feature selection (Guyon & Elisseeff, 2003; Kwak & Choi, 2002), which presents a process of selecting a sub-group of features relevant for construction of the model.

This paper uses the filter method in selection of features. Filter method includes techniques used for evaluation of value of features, leaning to heuristics founded on general characteristics of data. Filter methods InfoGain and GainRatio with Ranker search method were applied. InfoGain presents the evaluation of values of features, measuring the level of informativeness in relation to the class. GainRatio presents the evaluation of value of features, measuring relative informativeness in relation to the class. Features evaluated less than 0.01 should be excluded from the analysed group of data. Results of evaluation and ranking of features based on their individual values are shown in Table 1.

Table 1. *Results of evaluation and ranking of features*

FEATURE	InfoGain	GainRatio
31 KBP	0.3683	0.3982
32 SP2	0.3395	0.2147
10 Question_7e	0.3114	0.3025
26 Question_16	0.2364	0.2375
25 Question_15	0.2121	0.2407
22 Question_12	0.1846	0.1050
14 Question_11a	0.1548	0.2276
24 Question_14	0.1260	0.1362
01 Question_2	0.1237	0.0832
23 Question_13	0.1189	0.1874
27 Question_17	0.1066	0.1476
12 Question_9	0.0663	0.0586
05 Question_6	0.0532	0.0782

28 Question_18	0.0240	0.0732
30 Question_20	0.0156	0.0230
06 Question_7a	0.0000	0.0000
07 Question_7b	0.0000	0.0000
04 Question_5	0.0000	0.0000
09 Question_7d	0.0000	0.0000
03 Question_4	0.0000	0.0000
02 Question-3	0.0000	0.0000
08 Question_7c	0.0000	0.0000
20 Question_11g	0.0000	0.0000
19 Question_11f	0.0000	0.0000
15 Question_11b	0.0000	0.0000
18 Question_11e	0.0000	0.0000
17 Question_11d	0.0000	0.0000
29 Question_19	0.0000	0.0000
11 Question_8	0.0000	0.0000
13 Question_10	0.0000	0.0000
21 Question_11h	0.0000	0.0000
16 Question_11c	0.0000	0.0000

Source: Authors' research

Table 1 shows that the feature KBP has the most impact to the output, and that it has shown the best performance for both tests. Having in mind that the features evaluated less than 0.01 excluded, the new group includes fifteen features.

B. Analysis of classification model

The implied parameters have been set for the selected classification features. Testing was done using the method of cross validation of a known element. This method was used to carry out randomised division of the group into k=10 instances of mutually exclusionary sub-groups of similar size.

The following parameters were considered in comparison of classifiers (Han & Kamber, 2006, p. 359):
■ TP (True Positive) presents the number of correct positive predictions,
■ FP (False Positive) presents the number of wrong positive predictions,
■ Pr (Precision) is calculated using the formula,
■ Pr= TP/(TP+FP) (precision of classification).

Table 2. *Comparing the results of the algorithm for deep data analysis*

EVALUATION CRITERIA	CLASSIFIERS			
	J48	**IBk**	**MLB**	**NB**
Correctly classified instances	37	31	26	32
Incorrectly classified instances	13	19	24	18
Prediction accuracy	74	62	52	64
Kappa statistic	0.5276	0.2953	0.1549	0.3553
Mean absolute error (MAE)	0.2752	0.3056	0.3240	0.2612
Root mean squared error (RMSE)	0.3912	0.4557	0.5248	0.4382
Relative absolute error (RAE)	69.57 %	77.25 %	81.92 %	66.04 %
Root relative squared error (RRSE)	88.09 %	102.63 %	118.18 %	98.67 %

Source: Authors' research

Table 2 shows that J48 and Naive Bayes algorithms gave the highest accuracy. Small group of data and high number of features conditioned J48 algorithm to generate a classification model of the highest accuracy. Results of this study lead to conclusion that J48 algorithm can be useful for small groups of data with 50 instances. Good results of J48 algorithm can be related to category-based type of feature and discretisation of class feature to 3 class markings. Nonetheless, in addition to J48 one should not neglect the Naive Bayes algorithm results, generating the classification model wtih 64% of preciseness.

4. Conclusion

According to the World Economic Forum's "Global Information Technology Report 2016", Bosnia and Herzegovina is 97th out of 139 countries ranked by use of new information technologies. It is extremely poorly ranked in terms of using ICT technologies, where Bosnia and Herzegovina takes the position 123. When it comes to individual use, it is ranked 73. Despite the given indicators, the research was conducted on impact of data driven personalisation to business success of enterprises. Field research included collection of data from 150 enterprises operating in Bosnia and Herzegovina. Thirty (30) variables in the domain of enterprises' profile, use of buyer databases and data driven personalisation were gathered through methods of interviewing and surveying. The characteristic of the final group of data

used for experimental testing of enterprises' success is that it is a rather small group of data with 50 instances.

Good choice of classifiers (J48, Ik1, MLP, and NB), especially for the extremely small learning group (which is the case in this study) is of utmost importance. Firstly, prior to the very implementation of the selected classification algorithm, one should know what data were extracted for the analysis. This case study determined that the J48 algorithm generates good classification models with a very small learning group, with prediction accuracy higher than 70%. Based on our analysis, one can conclude that the J48 algorithm, used for a small learning group of data, gives good results of prediction, if the data is of category-based type, while class feature can have one of three class values (A - poor, C - good, E - excellent). Expansion of experiment with an additional group of data is planned for the continuation of this research.

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IMPLEMENTATION OF E-GOVERNANCE IN THE FUNCTION OF IMPROVING THE WORK OF LOCAL GOVERNMENT UNITS

IMPLEMENTACIJA ELEKTRONSKE UPRAVE U FUNKCIJI UNAPREĐENJA RADA JEDINICA LOKALNE UPRAVE

Abstract

Today, public administration, trend to provide accurate service to legal and physical persons timely, at right place and at reasonable price. Governments worldwide are faced with the challenge of transformation and the need to reinvent government systems in order to deliver efficient and cost effective services, information and knowledge through information and communication technologies (ICT).
This paper outlines four different potential types or models in an e-government system that is useful to define scope of E-government studies: Government-to-Citizen (G2C); Government to-Business (G2B); Government-to-Government (G2G) and Government-to-Nonprofit (G2N).
This paper also examines some examples in E-government practices and presents a general view on E-government implementation and local administration in contests of improving possibilities for better government services. The advent of new ICTs brought a lot of new assumptions about radical changes in our society.
This paper proposed that that contemporary issues related to E-government in public administration are related to the changes at different levels, such as: citizenship (citizens becoming participants in governance); the nature of public service jobs (in terms of skills, work processes and job design); organizational changes (from a hierarchical to a more horizontal structure, to network or even virtual organizations);

and the entire government (from classic bureaucracy to New Public Management and to network and digital governance).

The paper concludes by analyzing concepts and theoretical framework in these issues given the broader context of structural initiatives for E-government implementation and the recommendations for further studies of E-government in public administration, as well as the diversity of factors of influence at local and national level.

Sažetak

Danas, javna uprava, nastoji pružiti tražene usluge pravnim i fizičkim licima na vrijeme, na pravom mjestu i po razumnoj cijeni. Vlade širom svijeta se suočavaju s izazovom transformacije i potrebe redizajna sistema javne uprave s ciljem omogućavanja efikasne i troškovno efektivne usluge, informacije ili znanja putem informaciono-komunikacionih tehnologija (IKT).

Ovim radom su naglašena četiri različita tipa ili modela u sitemu e-uprave koji su podobni za određivanje obima studija e-uprava: javna uprava - građani (G2C); javna uprava – poslovni sektor (G2B); javna uprava – javna uprava (G2G) i javna uprava – neprofitni nevladin sektor (G2N).

Ovim radom su, također, istraženi pojedini primjeri iz prakse e-uprava i predstavljen je opći pregled implementacije e-uprave i lokalne uprave u kontekstu poboljšanja mogućnosti za pružanje kvalitetnijih usluga javne uprave.

Prema tome, svrha ovog rada jeste sistematizacija dosadašnjih istraživanja na polju implementacije e-uprave, s ciljem evidentiranja glavnih faktora uticaja na implementaciju, njihovih sličnosti i različitosti na lokalnom i nacionalnom nivou. Pojava novih IKT-a donijela je mnogo novih pretpostavki o radikalnim promjenama u našem društvu.

U radu se predlaže da se savremeni problemi vezani za e-upravu u okviru javne uprave sagledaju kao veza sa promjenama na različitim nivoima vlasti, kao što su: državljanstvo (građanima postaju sudionici u upravljanju); priroda javnih poslova (u smislu vještina, radnih procesa i dizajna posla); organizacijske promjene (od hijerarhijske na više horizontalnu strukturu, mrežnu ili čak virtualnu organizaciju); i cijela vlada (od klasičnog birokratskog ka novom javnom menadžmentu, te umreženog i digitalizovanog upravljanja).

U radu se zaključuje, da je analizom koncepta i teorijskog okvira po ovim pitanjima dat širi kontekst strukturalnih inicijativa za implementaciju e-uprave i preporuka za dalje istraživanje koncepta e-uprave u okviru javne uprave, te različitosti faktora uticaja na lokalnom i nacionalnom nivou.

1. Introduction

Governments around the world are increasingly using Information and Communication Technologies (ICTs) to modernize their public management systems and their external relationships with citizens, businesses and other organizations.

Expectations of the introduction, management and use of ICTs in the public sector, also called "e-Government", are high: policy makers anticipate that e-Government applications, such as the Internet, geographic information systems, CCTV cameras or multifunctional smart cards, not only will enhance cost efficiency and effectiveness in the public sector, but also will bring about transformational change in public service provision, administration and engagement with the general public (OECD, 2005).

Therefore, in this paper e-Government concept is analyzed from multiple perspectives. First, there is no agreement on a common e-Government definition. Consequently, we focus on central aspects of e-Government such as implementation (the introduction of information technology and systems in the public administration). Second, this paper covers public administration in the meaning of introductions od administrative procedures, improvement of the service quality and increases of internal efficiency of the public sector.

Objectives and research questions - with respect to the issues stated above, the general purpose of this paper is that through literature review build a scientific basis for future research on e-Government in the implementation domain.

In order to provide for a clear overview of future research needs, we stipulate the following research question to be answered: Which are the most significant factors influencing the implementation of e-Government?

The paper analyzes 82 e-Government study. When elaborating certain theoretical and methodological outcomes of the observed objectives, and certain applicative considerations, synthesis and deduction methods will be used.

2. E-government implementation

Since we already stated above that there is no agreement on a common e-Government definition, while the different areas tend to investigate phenomena from contrasting perspectives, quite a few explanation approaches can be found in scientific literature. In the E-Government Act of 2002, the 107th Congress explained e-Government as "… using Internet-based information technology to enhance citizen access to Government information and services, and for other purposes" (107th Congress, 2002, p. 2899). Following, we present frequently appearing e-Government definitions:

■ "Simply stated, e-Government is the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees" (Silcock, 2001, p. 88).

■ "... utilizing the internet and the world-wide-web for delivering government information and services to citizens" (UNDPEPA & ASPA, 2002, p. 1).

■ E-Government refers to "… the use of information technology to enable and improve the efficiency with which government services are provided to citizens, employees, business and agencies" (Carter & Bélanger, 2005, p. 5).

■ "… E-Government in a broad sense: all use of information technology in the public sector. It covers a broad range of managerial issues: from high-level strategy to detailed tactics; from the technicalities of data flows and process mapping to the politics of e-Government" (Heeks, 2006, p. 1).

■ "Simply speaking, E-Government means the communication between the government and its citizens via computers and a Web-enabled presence. The advantages in timeliness, responsiveness, and cost containment are outstanding" (Evans & Yen, 2006, p. 209).

■ "Electronic government is the use of Information and Communication Technology in the transformation of government; primarily aiming to the improvement of accessibility, effectiveness and responsibility. It is based on the diffusion of the information and the information policy development. Electronic government guides to increasing citizens' participation and active citizens' development affecting the mechanisms of democracy" (Spirakis, Spiraki & Nikolopoulos, 2010, p. 75).

Accordingly, e-Government constitutes a technology-enabled part of the government or public sector governance model that allows unattended public stakeholder access to information and services, improves government-

stakeholder-interaction, fosters accountability, efficiency, and effectiveness, and forms the basis for e-democracy from a technological point of view. Thus, we suggest to use definition of e-Government throughout this paper in accordance with Wirtz and Piehler (2010): "The term e-Government describes the electronic handling of administration and democracy processes in the context of governmental activities by means of information and communication technologies to support public duties efficiently and effectively".

2.1. E-government development and benefits of implementation

The rapid transformation of our society and the digital revolution, along with budgetary pressures pose challenges for governments and the future of public services. Development of e-Government was depended on evolution of the information society which started in 1966 when IBM introduced the Disk Operating System (DOS/360) for its mainframes. This was the first system that allowed batch processing (executing a series of function commands or programs without rebooting the mainframe or other manual intervention). Only three years later, Paul Baran and Donald Watts created ARPANET, the ancestor of the Internet. This was followed by another milestone in the development of information and communication technologies, the intervention of the microprocessor by Intel. Based on these previous steps, IBM introduced the first personal computer and Motorola presented the first commercial mobile phone. These were the main technological breakthroughs that enabled the development of interconnected information and communication technologies that we know today. These information and communication technology developments provided the technological basis for the global system of interconnected computer networks called Internet, which in second quarter in 2017 already showed more than 3,800,000,000 users (Internet World Stats, 2017).

The phenomenon of e-Government is growing rapidly at the local, national and international level (Rose & Grant, 2010, p. 30; Rabiaiah & Vandijck, 2011, p. 134) supported by organizations such as the EU, UN and OECD as evidenced by the OECD Report (2009) and the European Commission Report (2010). Westlund (2006, p. 128) states that e-Government is linked to the post-industrial digital economy through information-communication technologies (ICT). E-Government has proved to be an important management function of public administration reform over the past 15 years (Lee, Chang & Berry, 2011, p. 451). The implementation of e-Government is often linked to increasing the availability of public services to architects in digital format with the "e"

sign, and in a large number of cases the need to root organizational changes to public administrations, states Worrall (2011), which is difficult to manage, difficult to deploy and often fail due to statement that private sector ideas can't be copied to the public sector (Heeks, 2006).

E-government ensures the well-being of citizens both developed and developing countries. E-administration enables citizens and businesses to jointly participate in decision making and policy, and bridges the gap between ordinary citizens and public administrations. This mode of action directly affects the reduction of public administration and citizens' costs, and allows increasing of transparency and reduction of corruption in the public administration (Bwalia, 2009, p. 7). The basic objective of e-Government is to make administrative processes more efficient for citizens and for the businesses (*e.g.* simplicity of application and efficient processing of cases), as well as for the employees, *e.g.* through automation of the process of reception and processing (Halmos, 2010).

A major e-Government breakthrough in US from an implementation perspective happened in 2001. The Office of Management and Budget Director Mitchell E. Daniels initiated an e-Government interagency taskforce to elaborate an action plan for implementing the e-Government vision as advised by the President. The e-Government (see Table 1) taskforce identified 25 high-payoff, nationwide projects with an estimated savings potential of several billion dollars (Wirtz & Daiser, 2015, p. 21).

Other nations that were early adopters in the mid-late 1990s include the United Kingdom (UK), Canada, Australia, New Zealand, and Singapore. Canada and the UK, in particular, were credited with implementing forms of national e-Government that facilitated and encouraged e-participation, thus evidencing possibly the broadest understandings of what e-Government is and can be. In more recent years, nations as varied as South Korea and Estonia have established comprehensive systems of e-Government. In Estonia's case, comprehensive e-services are matched by e-democracy and e-participation tools that allow citizens to have direct input on legislation and participate virtually in online cabinet meetings. The Korean government has developed and published perhaps the most sophisticated national e-Government strategy to date which includes goals of universal citizen access and participation in government, and transparent government. To date, Korea has made great strides in implementing this e-Government vision (Curtin, 2007, p. 6).

Table 1. *E-Government Taskforce Project Deployment 2002*

Area	Project
Government-to-citizen	Recreation one-stop
	Eligibility assistance online
	Online access for loans
	USA services
	EZ tax filing
Government-to-business	Online rulemaking management
	Expanding electronic tax products for businesses
	Federal asset sales
	International trade process streaming
	One-stop business compliance information
Government-to-government	Geospatial information one-stop
	E-grants
	Disaster assistance and crisis response
	Wireless public safety interoperable communications
	E-vital
Internal efficiency and effectiveness	E-Training
	Recruitment one-stop
	Integrated human resources
	E-clearance
	E-payroll
	E-travel
	Integrated acquisition environment
	Electronic records management
Cross cutting initiatives	E-authentication
	Federal enterprise architecture

Source: Wirtz & Daiser, 2015, p. 21

The European Commission's Digital Agenda, which forms the first of the seven Europe 2020 strategy pillars (I. Digital single market, II. Interoperability and standards, III. Trust & security, IV. Fast and ultra-fast Internet access, V. Research and innovation, VI. Enhancing digital literacy, skills and inclusion, VII. ICT-enabled benefits for the society), proposes to better exploit information and communication technology benefits and potentials to foster innovation and economic growth. The Digital Agenda aims to reduce barriers that block a free flow of information and digital services as well as updating relevant market rules within the European Union (European Commission, 2015).

A similar development, "… handling the most important services of administration through the Internet and therewith to organize all procedures in a more comfortable, faster and less bureaucratic way" (Timm & Kahle, 2005, p. 721), can be seen in many countries all around the world, promoting e-Government on a global scale. This is underlined by Karunasena and Deng (2012, p. 80), who resume that "(g)overnments around the world continuously use e-Government for transforming their public service delivery, promoting greater interaction between their citizens and government, streamlining the two-way communication between citizens and governments, improving the efficiency of public organizations, and saving taxpayer money …".

Having studied many of the e-Government benefits this paper characterizes the most common e-Government benefits and attempts to classify them as follows: (1) efficiency and cost reduction (*i.e.* with particular focus on using ICT to improve government service delivery), (2) accountability and transparency (*i.e.* with specific focus on making a government receptive to constituents), (3) citizen centric focus (*i.e.* with precise focus on placing citizens and their requirements at the center), (4) economic development (*i.e.* with clear focus on enhancing economies), and (5) accessibility and availability (*i.e.* with explicit focus on single point access via the Internet).

2.2. Factors effecting e-government implementation

Today, e-Government is an inherent part of governments and public administrations worldwide since it is highly relevant for these organizations to address their individual stakeholder desires and requirements. In this context, the implementation of e-Government and its associated benefits is a compelling topic for citizens and is especially relevant for the economy since the availability of online public services is an important factor within global competition. The driving forces behind the situation, requiring change for government and public administration, can be explained by the Four Forces E-Government Model (see Figure 1), which aggregates relevant drivers to four key developments: Convergence and Technology, State and Politics, Society and Economy, and Citizen Empowerment (Wirtz & Daiser, 2015, p. 35).

Figure 1. *The four forces model of e-government*

Source: Wirtz & Daiser, 2015, p. 36

Apart from the above mentioned factors, some authors have identified other factors as significant. Al-Shafi (2009 p. 168) has highlighted social impact, expectations and behavioral intentions to use e-Government services as three factors that have a significant impact on the implementation and acceptance of e-Government in its work on factors that influence the implementation and acceptance of e-Government in Qatar.

Alhujran (2009, pp. 59-66) in Determinants of Acceptance of e-Government Services in Developing Countries has noted the following important factors, which should be considered in the context of e-governance, namely: behavior, e-Government utility, public benefit e-administration, trust in e-Government, ease of use of e-Government, culture, digital gap, information security, quality of service.

Nkohkwo and Islam (2013, p. 260) analyzed the factors of successful e-Government deployment in the Sub-Saharan Africa region where through

the analysis of published e-Government literature for the period 2001-2012. In the six leading world journals in the field of information systems, the following determinants were identified as the most prominent: infrastructure, finance, political aspect, organizational aspect, socio-economic aspect and human resources. Particular attention should be paid to the acceptance of e-Government by citizens and public administration employees, because public administration staff in fear of losing workforce may be the main brake in the implementation of e-governance (Al-Shafi, 2009, p. 85). Also, defining the steps of e-governance implementation without the previously examined attitudes of citizens and business entities can greatly contribute to the inadequate definition of the spectrum of digital services, is something that citizens or business entities do not want to do and then have an e-Government that no one use.

The e-Government research has attracted considerable attention from many state agendas (Heeks & Bailur, 2007, p. 250), but there are very few systematic researches undertaken locally (Deakins, Al Namani & Zhang, 2010, p. 528). Regardless of this problem, there are studies that show that e-Government at local level realized in the form of online services, have been adopted/implemented in some cities/ municipalities but have not yet reached a large number of expected results and set goals, as the organizational and socioeconomic barriers that effects on transformation remain, that is, they have not been successfully overcome (Norris & Riddick, 2012, p. 172). Torres, Pina and Royo (2005, p. 542) state that e-Government initiatives at local levels are still largely passive and under various impacts. They remain passive because of factors that are characteristic for local level, such as financial support, political will, infrastructure, employees, *etc*. Most public administrations have web portals, but in most cases they are slightly more advanced than ordinary "billboards". Local governments are trying to mimic the existing service delivery channels rather than transform them. According to the European Union project realized in the period 2007-2013, there is a visible shift in the transformation of cities/municipalities towards a more customer-focused organization (SmartCities project, 2011).

Local government represents the lowest level of formal state institutions, such as the levels of cities and municipalities, publicly responsible decision-makers and administrations that deliver services, and which have been established in accordance with national laws. The structure of local governments differs from country to country and differs in the degree of local community

responsibility towards citizens or in connection with the highest level of government (Rahman, 2010, p. 25).

In the administrative context, four main factors can influence the leadership in local governance: leadership, communication and coordination, direct risk management and confidence, as well as transparency (Anttiroiko, 2004, p. 380; Calista & Meitskim, 2007, p. 103). According to some estimates, 80% of interactions with public administration take place at the local level of government (Trajkovik, 2011, p. 15). At the local level, decisions that are of particular importance to the local population, because their effects are related to the everyday life of citizens, is inconceivable that, despite a large number of e-Government and e-Government studies, there is little research that refer to local levels of government (Pina, Torres & Royo, 2007, p. 461).

E-Government implementation reduces government expenditure through direct-channel communication between public sector, private sector and other government organizations and by integrating various government agencies systems through a single web portal (Al-Khouri & Bal, 2007, p. 92). Furthermore, e-Government increases public expectations and improves the services to offer more transparent and accessible services to the user (Al-Khouri & Bal, 2007, p. 88) and to public-private sector collaboration. These conceptions illustrate that e-Government is not merely an extension of the government; rather it significantly transforms government operational activities to electronically serve their constituents and other associated stakeholders.

So, implementation of e-Government can't be copied from other state or other municipality but have to be projected in regarding to factors which are related to that state and to that municipality. It is evident from the literature review that in certain cases the implementation of e-Government leads to improvement of the public administration work effects, but empirically it has not been fully proved, and a large number of failed implementations, especially in developing countries, where we recorded 35% of failure and 50% as partial failure (Heeks, 2003, p. 2).

Using subjective ontology Ciborra and Navarra (2005, p. 149), suggested that the motive for enhancing development, transparency and accountability, often cited as a reason for introducing e-Government in developing countries, is highly questionable. "Good Governance" is not always the result of the introduction and implementation of e-Government, because the bureaucratic

apparatus will not immediately become more transparent, more user-centered. Using Jordan case study, Ciborra and Navarra speculates that developing countries may not yet be ready for such a system of work where citizens are viewed as customers (in service activities). This would mean that the privileged levels of society had easier access to services, while corruption would continue through mediators and taking bribe, thus leaving the desired effects of democratization.

3. Discussion

Analyzing available literature in the field of electronic government and public administration, it can be stated that there is no single definition of electronic government, but there is disagreement between authors on this issue, this paper consider that this is not a good sign as it can cause a major problem in the process of e-Government implementation. The same is the case with the conceptual definition of local governance that is defined in different societies in different ways, and thus can't be competent to copy the organizational structure from one state to the other.

The level of development of local government is also an indicator of the development of democracy of every society, which emphasizes the importance of examining local levels of government with all its capacities, as it represents a place where citizens realize over 80% of their basic human rights. But there is a small number of research paper covering local administration e-Government, especially if we consider diversity of factor influencing e-Government implementation on national and local level.

E-Government is cited in the literature as a means to reduce costs, improve services, save time, and increase the efficiency and effectiveness of the public sector, that is difficult to implement and which often experiences failure because private sector ideas can't be copied to the public sector, and ideas from developed countries can't just be copied to developing countries without taking in consideration their characteristics that are reflected in internal and external factors, political planning, financial ability, citizen education, information technology, religion, culture, infrastructure, *etc*.

From the literature, it is more than obvious that e-governance is not just translating past information from the paper version into digital form but it also implies a complete change of organization of work, which is a big challenge.

The literature outlines a large number of assumptions that may have an impact on improving public administration work and which can't be the same for the state and local level. This includes infrastructure, digital divide, citizen education, culture, customs, faith, e-administration, ease of use of e-Government, information security, quality of service, political support, sufficient financial resources, awareness of the need to introduce e-Government, economic aspects, computerization of society. When defining basic e-Government determinants, the basic characteristics of a company must be taken into account, and thus determining the factors for testing to find the ones that have the greatest impact on improvement of work. All of these assumptions can also be constraints, but in the literature special emphasis is placed on the financing of e-Government projects, digital divide and infrastructure.

It is evident from the literature review that in certain cases the implementation of e-Government leads to improvement of the public administration work effects, but empirically it has not been fully proved, and a large number of failed implementations, especially in developing countries, where we recorded 35% of failure and 50% as partial failure. Thus, if there are no proper implementation steps for each country are defined, country will not be able to talk about the successful implementation of e-governance. For this reason, in the literature, we can only find a rough framework that needs to be adjusted to take into account all the characteristics of a particular subject, and thus to create a new theoretical implementation framework that needs to be examined first and to prove it can work in practice.

4. Conclusion

In this paper, we have presented a systematic overview of e-Government literature, with all its positive and negative characteristics, viewed globally. 82 empirical studies on e-Government have been analyzed, representing quality referents in the field of e-Government and public administration to date. We summed up the input and output determinants used in this literature as well as the methodologies used in the research. Given that the improvement of public administration work largely depends on public administration informatization, this work provides a good basis for researchers in the field of e-Government.

The literature review brings us five major conclusions. First, it has been found that local public administrations in the world are not organized in the

same way or have the same powers, so there is no common definition of local public administration. For this reason, work on improving the work of local public administrations can't be a task to be transcribed from another country, but must be done in a way that is tailored to the characteristics of the domestic internal and external environment. This is particularly evident in Bosnia and Herzegovina by taking a very complicated constitutional arrangement.

Second, most e-Government research has been based on the state level, but if we take into account that basic human rights are attained at the local level, it is necessary to pay more attention to this level of authority. However, the fact noted in this paper is that there are very few e-Government researches related to the local level of authority, and for this reason this research is even more significant. Consequently, more extensive and more extensive e-Government research is required at the local level in order to ensure a better implementation of e-Government projects.

Three, a number of different factors have been identified in the literature that affect the implementation of e-Government, and hence the improvement of public administration work mainly related to the state level of government. It should be emphasized here that factors characteristic of the state level of government are not adequate for the local level but must be expanded with factors determined by the local level of government, primarily human resources, information security, political support and financial resources.

Four, the literature presents the assumptions of the successful implementation of e-governance, primarily related to the existence of information infrastructure, informational literacy on citizens and public administration employees, sufficient financial resources, legal and political support, and adequate interoperability and organizational structure. The absence of the above-mentioned assumptions is also the limitations in the greater use of e-Government, to which the determinant of the e-Government's acceptance by citizens, public administration employees and business entities should be added.

Five, the paper, shows that successful implementation of e-Government can be linked to increasing the efficiency and effectiveness of public administration, transparency, accountability, participation and reduction of corruption, as this reduces the possibility of mediation in this way. It is therefore crucial to identify high-quality e-Government determinants that have the most significant

impact on improving the workforce to be the backbone of implementation and not some arbitrary findings or copying models from developing countries or developed countries.

As far as the recommendations for further research are concerned, it should be noted that it is very important to investigate the acceptance of e-Government by public administration employees since they can be the main brake for successful implementation. Also, it is necessary to work on local level research since very few researches have been recorded and further research is needed on what services citizens want and not what the government wants, so that e-Government implementation can be successful.

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DIGITAL MONEY AND THE FUTURE OF ITS APPLICATION ON THE EXAMPLE OF THE REPUBLIC OF SERBIA

DIGITALNI NOVAC I BUDUĆNOST NJEGOVE PRIMJENE NA TERITORIJI REPUBLIKE SRBIJE

Abstract

The modern age and exponential development of technology induce currency changes that pretend to root out paper money and replace it with a virtual, digital currency. Bitcoin is the most used viral currency today, the value of which is steadily increasing through a comparison with fiat currencies. Accordingly, the interest of clients in this crypto currency is growing around the world together with the domain of their application.

It is the analysis of possibilities and limitations of the use of digital money, as potentially new currency of modern society that the subject of this research paper is based on. Bearing in mind that digital money is still not accepted as a relevant payment instrument, the basic problem of the paper is to determine the link between the development of the world countries and the speed of implementation of digital money in the payment system in the territory of the Republic of Serbia.

The aim is to discover the existing level, but also predict future spheres of digital money application. In order to obtain adequate research results, scientific methods of analysis, synthesis, induction, deduction, and comparison were used in the research to predict the future domains of the use of crypto currencies. Subsequently, general conclusions about the potential of Serbia as an area for the application of digital currencies are drawn, based on the comparison of the use of these currencies on a global scale.

The research results aim to raise awareness of the application of digital currencies, which define the frameworks of the new economy at the global level. In this way, the business structure is being shifted towards virtual currencies, since 70% of total cash transactions are done through some form of non-cash payment.

Keywords: digital money, crypto-currency, payment system, Bitcoin

JEL: E47, G23, O33

Sažetak

Promjene na globalnom nivou dovode i do značajnih izmjena u sistemu plaćanja, pa samim tim i predmet ovog istraživanja je koncentrisan na mogućnosti i ograničenja upotrebe digitalnog sistema plaćanja. Osnovna problematika jeste u utvrđivanju veze između razvijenosti zemlje i brzini implementacije digitalnog novca u platnom prometu na području Republike Srbije.

Rad ima za cilj otkriti postojeći nivo korištenja te potencijalne buduće aspekte i korištenja digitalnog novca. Istraživanje na primjeru Republike Srbije će se sprovesti naučnim metodama: indukcije, dedukcije i komparacije. Metod indukcije omogućuje predviđanje upotrebe kripto-valute za razne namjene, zahvaljujući brzoj ekspanziji i prilagođavanju upotrebe ovog oblika novca u savremenim privrednim sistemima za pojedinačne namjene. Deduktivna metoda kao metod istraživanja u radu dovodi do zaključka o potencijalu Srbije kao područja za primjenu digitalne valute na osnovu analize upotrebe valute na globalnom nivou.

Rezultati istraživanja mogu značajno doprinijeti podizanju svijesti o ovom obliku novčane razmjene kod potencijalnih korisnika i kreatora finansijske politike jedne zemlje, u ovom slučaju Republike Srbije, jer komparativna analiza pokazuje da je danas u široj upotrebi, posebno u razvijenim zemljama, plaćanje putem kartica u odnosu na gotovinu, a dalji privredni i digitalni razvoj može da obezbijedi dobru osnovu za jedan od dominirajućih oblika plaćanja tj. plaćanje upotrebom digitalnog novca.

Ključne riječi: digitalni novac, kripto-valuta, platni sistem, bitkoin

JEL: E47, G23, O33

1. Introduction

Contemporary market is, except the fact that it has gone more liberal and therefore riskier, meeting a new trend of "transforming paper into digital money" (Radovanovic, 2009, p. 155.) This qualitatively new form of money carries with it a set of changes in the domain of payment system, mechanisms of transactions, taxation, but even in the controlling (tracking) of the money within the electronic business system; however, it offers a set of benefits, which specifically refers to impossibility of counterfeiting, robbery or losing this type of currency (Andresen, 2013, pp. 4-5). It is issued and controlled by the users who are the members of the virtual community (Cgap, 2014). The tendency of growth of digital currency is heading towards its availability in "offline" transactions, which will form the new frames for development of the digital economy (Radovanovic, 2009, p. 418).

Even though the use of digital currency is raising the levels of efficient management, on the other hand, it induces a line of economic consequences, created primarily as a result of the instability of monetary systems of the states (Raichevic, Matijasevic & Ignjatijevic, 2012, p. 108). Regardless of the mentioned negativities of its implementation, it is considered that the use of digital currencies will encourage the development of society (Dias, 2000, p. 7) and economy, but also lead to rising in employment levels, because it would lead to "creation of the new working places thanks to additional businesses, due to the new currency"(ScotPound, 2017). In addition, international transactions would go significantly cheaper, because Bitcoin transactions do not demand a mediator, who is compensated for this service (Murphy, Murphy & Seitzinger, 2015, p. 5).

The first digital currency (cryptocurrency) - Bitcoin (BTC), was designed in 2008, as an algorithm unit which quantifies a certain value, and in 2009, a software was implemented for this decentralized currency. The software uses asymmetrical cryptography, in order to secure identification and authenticity and on the other hand, secure the integrity of the transaction, which "cannot be larger than 10,000 bytes" (Krzysztof 2016, p. 14). Keeping in mind that the number of users of this value is constantly growing on the global level, as well in Serbia, it is important to mention the spheres of its use, primarily in online stores, but the possible use of Bitcoin can also be paying to host a particular site, buying games for phones, transferring money abroad and other services (Djekic, 2015, p. 1).

2. The subject and methodology of research

The subject of research of this work refers to the usage analysis of Bitcoin, in developed states of the world, as well as in Serbia, but also the implication of the future domains of use of this cryptocurrency. Main reasons for analyzing this type of digital money is due to the fact that, on the global level, the interest in it grows daily, which leads to growth in price of BTC; in July 2015, the price was 283,94 US dollars, in September 2017. the price of BTC was 4.349,29 US dollars (Statista – The portal for statistics, 2017). According to that, the number of BTC ATM machines also grows; in October 2017, it was registered that there are 1.587 in the world (Statista – The portal for statistics, 2017a).

Methodology of the research is based on the methods of analysis, synthesis, induction, deduction and comparison, which are used to track relevant data of

use of digital money in developed countries and Serbia, the number of BTC ATM machines, and the area of use of the digital currency, viewed through the framework of professional and relevant literature.

3. The use of digital currency in developed countries

Even though the use of digital currency on the global level, but in Europe also, constantly grows, it is not regulated by the national institutions of the countries, or by the European Union.

Figure 1 illustrates the percentage of the use of digital currencies in some European countries, based on which can be concluded that the virtual currencies are mostly used in Eastern Europe. However, in accordance with the fact that there is a lot of potential for digital currency - Bitcoin, becoming the most worthy international currency, it is considered that the European Union will have "to regulate Bitcoin or completely ban the currency, because, without regulation, it could counteract to euro and further ruin European economy" (Douma, 2016, p. 3).

Specifically, European Central Bank and International Monetary Fund are stating that the reason for not making Bitcoin a relevantly recognized currency, is that it doesn't have the ability to be saved up, which opens up a wide specter of possible risks, not just for the users, but to the entire economy (European Central Bank 2012). Besides that, not national central banks, nor European banking authority, are providing the safety to their clients, because there is no guarantee of stability of digital currencies (Szczepańsk, 2014, p. 7).

Therefore, as a necessity in the future, it is demanded setting up protection and control in the normative-legal, but also the software system, even though it is considered that setting up control of Bitcoin transactions would reduce the anonymity of the users, thus raising the expenses of transactions. If the control of currency transactions were established, it would reflexively reduce the value of digital currencies. Also, the developed economies of the world have another fear, which reflects through the deflationary character of Bitcoin.
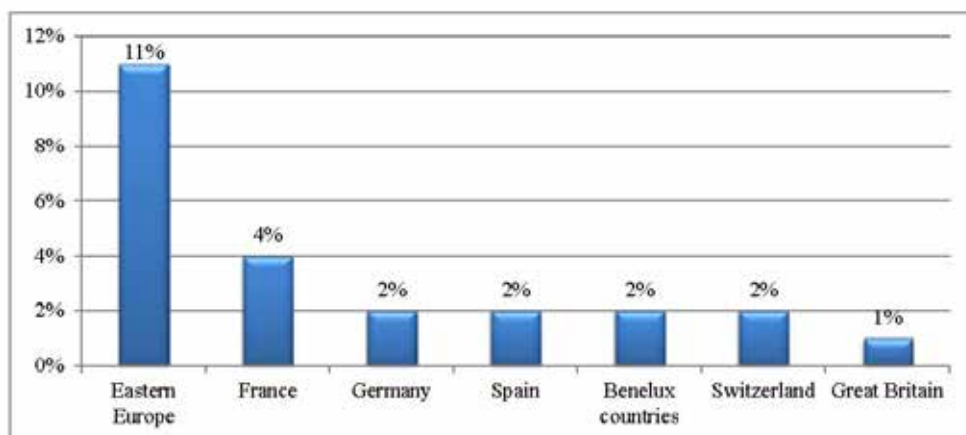
Figure 1. *The use of digital currencies in some countries of Europe in the year of 2016*

Source: Statista – The portal for statistics, 2017b

Even next to the fact that digital currencies aren't currently considered a competition to national currencies, there is certainly a potential for that scenario, which you can see in the fact that the specter of services you can pay with digital currencies is getting larger. Research conducted in the USA during 2015, has shown that cryptocurrencies are used in 81% for online shopping, and the least amount for micro-payments and peer-to-peer transactions (Figure 2).

The same research has even confirmed that 54.5% of the consumers older than 55 years, shops, gets or receives cryptocurrencies 2 to 5 times a year, of which the most 62.1% Bitcoin, 23.9% Litecoin, 21.4% Peercoin and 11.9% Namecoin. The fact that digital currencies are not yet legally regulated causes a sense of insecurity among consumers, which is shown through the data that 46.6% of customers keep the cryptocurrencies for less than a week, and only 13.1% more than 6 months. Also, the average value of transactions performed using cryptocurrencies is in 33.5% worth of 25-49.99 \$, therefore worth a little (PwC Consumer crypto-currency Survey, 2015).

Based on everything mentioned, it can be concluded that even though digital money is not an officially recognized currency, it is considered that by innovating and improving the system of transactions, the flaws could be fixed, which would reduce the risks and bind the cryptocurrencies to a control institution, which would enhance the transparency and create a good base for a law and legal determination of this kind of business.
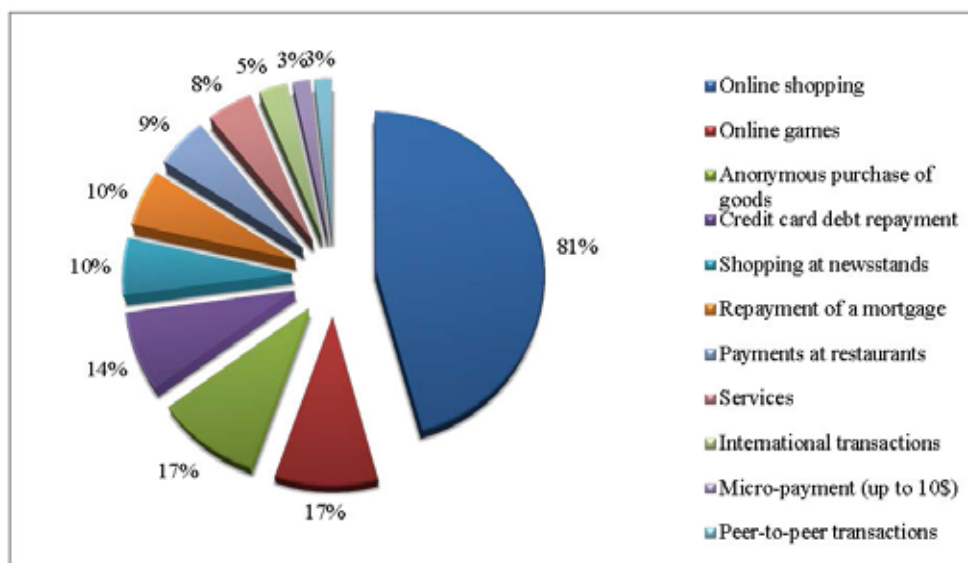
Figure 2. *Different uses of digital currencies in 2015 on a global level.*

Source: PwC Consumer crypto-currency Survey, 2015

4. Use of digital currencies in Serbia

Due to the changes in the conventional way of payment and increasing of the use of digital money, which has occupied a dominant monetary position in the developed countries, in Serbia the trend of implementation of this innovation was induced. However, in accordance with the economic growth of Serbia, it is completely clear that it cannot be said that this method has come to life in the same measure as in some other developed countries (USA, UK, Canada, *etc.*). In that context, the National Bank of Serbia has issued a warning to its clients (before all, banks and exchanging offices it controls), advising them not to use the digital form of money (Bitcoin), with the explanation that it is not supported by European Central Bank and that adequate protection from risks in transactions cannot be provided (Ngo, 2014, p. 1).

In the same warning it is stated that dinar is the officially valid currency and that all transactions are converted into that domestic currency, and that there were no mechanisms of legal protection against financial losses, concluding that with this warning, every type of using digital money is now under the domain of responsibility of client himself (National Bank of Serbia, 2014).

What is characteristic for the transactions with Bitcoin currency, is that the transaction is done without the bank as a mediator, which then eliminates the transaction fees, also transactions for all the citizens are being carried out free of charge, except in the case of conversion for currencies such as dollar, euro or any other, when a certain amount is being charged, but it is still much cheaper than in the case of a bank serving as a mediator. Also, the next advantages of using Bitcoin currency are that (Djekic, 2015, p. 1): "coin" is not frozen, the transaction cannot be tracked, it is not included in the taxation system and low transaction fees.

The conditions that must be met to use Bitcoin currency are (Djekic, 2015, p. 1): a working and stable hardware which can work all day, motherboard with PCI-processor, with 512 MB RAM-memory, hard disk or a USB flash memory with 48 GB for the installation of the system and AMD graphic card.

The main reasons for Bitcoin using getting more popular in Serbia is based on the deflation of the currency, the absence of central authority, the anonymity and safety of transaction, and peer-to-peer technologies. Namely, in terms of deflation of the currency, appears the number of 21.000.000 BTC, that is, authorities aren't coming forward with the demand that the money is printed arbitrarily. Peer-to-peer technologies indicate the work of thousand computers in the world at the same moment, without a point which would show that, such as a bank or a processor card.

In order to legally charge the services in the mentioned digital currency, the customers are given a fiscal bill, the same as in conventional cash payment, while the difference is reimbursed based on BTC budget sum. Therefore, it can be concluded that the price is charged by the current exchange rate. In order to use this type of payment in the areas of trade and catering facilities, an app is needed which can be bought in Creative Media Art agency. Also, Bitcoin ATM machines are used, which change the paper money for BTC currency.

5. Research of the potential areas of future use of digital currency in Serbia

Keeping in mind the results of research of MASMI agency conducted in 2014, on the subject of "What is most commonly used for paying in Serbia", the possibility of using digital methods of payment can be predicted. Namely, the

results show that up to 70% of the payments are done via some form of non-cash paying (payment card - 36%, electronic or mobile banking - 19%, special payment card used for online payments - 9%, Q vouchers - 5%, via Pay Pal service - 1%). The system of payment via digital currency can substitute any kind of non-cash payment method, and according to that, high potential of use of the mentioned currency can be predicted (MASMI, 2016).
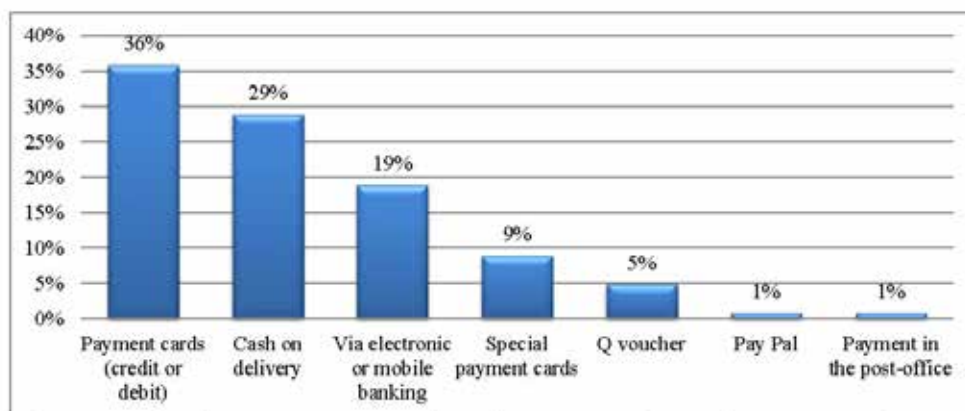
Figure 3. *Results of Masmi agency's research on the most common forms of payment over the internet*

Source: MASMI, 2016

5.1. Bitcoin ATM machines in Serbia

Bitcoin ATM is the first ATM in Serbia which enables buying virtual currencies. It was presented in the 2014. in Belgrade and, since then, 3 more Bitcoin ATMs were installed and one on the territory of Novi Sad (ECD. rs 2016). Due to the fact that Bitcoin as a relevant currency doesn't exist in Serbia, it is important to mention that the readiness of the countries to introduce the use of digital currency depends on multiple factors, such as (Dave *et al*., 2014, p.15):
• the support of the government and market,
• technological and financial infrastructure,
• digital money solutions,
• the tendency toward implementation.

In the domain of the support of government and market, it is important to point out that it refers to institutional characteristics in which digital money should function, which includes the factors such as property rights and government

support for innovation. For that to be feasible, it demands the implementation of modern technologies and financial infrastructure, with the aim to support placement and working of digital money. Regulatory and operative aspects are also taken into account within this domain. Also, for undisturbed functioning, the key is developing functions which enable providing solutions to digital currency, while the domain of tendency toward implementation, above all, refers to tendency of the consumers and legal entities toward adopting monetary innovations. However, the common quality for all mentioned factors is the high level of risk, considering that the use of Bitcoin and its implementation into daily money transactions is still representing a sphere of research.

5.2. Classification of improvements in countries' readiness to use digital money

Results shown in Table 1, give an overview of the division of countries according to indicators of readiness, or the initial stage, the stage of formation, transition and material readiness for the introduction and use of digital money, defined according to data from 2014 and 2015.

Table 1. *Stages of use of digital currencies in countries*

Initial stage	Stage of formation	Transition	Material readiness
Egypt	El Salvador	Panama	Finland
Nigeria	Dominican Rep.	Israel	Singapore
Zambia	Guatemala	Chile	SAD
Tunisia	Kuwait	Portugal	Sweden
Pakistan	Russian Federation	Saudi Arabia	Hong Kong
Argentina	India	Spain	Norway
Ivory Coast	Sri Lanka	Czech Republic	UK
Uganda	Kenya	South Africa	Japan
Bangladesh	Morocco	Turkey	Germany
Cameron	Peru	Costa Rica	Austria
Gabon	Greece	Slovenia	Canada
Tanzania	Jamaica	Poland	Novi Zealand
Venezuela	Ghana	Italia	Austria
Nepal	Romania	Indonesia	Ireland
Mali	Mexico	Croatia	Malaysia
Iran	Vietnam	Philippines	Korea
Alger	Ukraine	Thailand	Belgium
Ethiopia	Senegal	Hungary	France

Source: Dave *et al*., 2014, p. 16

Using different indicators, readiness for implementation is calculated in every one of the 90 countries in the study. Based on their results, countries are then grouped into four main groups of readiness:

1. Beginner countries (30 countries), refers to the countries with low levels of ICT development and financial services available to most of the population
2. Countries in the forming (20 countries), refers to countries with basic ICT infrastructure, financial services and regulatory regimen. However, they are challenged by many factors, including noticeable informal economy, limited implementation of existing regulations, a lack of ICT outside of urban centers and the customer's preference to cash.
3. Countries in transition (20 countries), refers to countries who overcame most of the challenges of the previous stages, but still are behind when it comes to some of the advanced digital solutions in the domain of paying, including e-markets and transits.
4. Materially ready countries (20 states), refers to countries with good ICT infrastructure and adequate digital solutions. Regulatory framework stimulates private sector investments and innovating into new digital solutions. However, there is still a need to proceed in the development of digital currency and progress to universal implementation.

The development of the ecosystem of global digital currency belongs to most exciting and most important social challenges in the upcoming decades. But, like in the other complex socio-technological spheres, there are many factors which need to function synergistically in order to accept new technologies and monetary innovations, including a huge number of individuals, traders of all sizes, different financial institutions, new digital payment, companies and government regulators in every country of the world. As a result, it is clear that implementation of digital currency demands permanent improvement, but also the understanding of obstacles which are slowing the implementation of digital currencies worldwide. The initiative of development of readiness index certainly represents an important step in that direction. Considering the level of economy growth, but also the technology growth, it can be concluded that Serbia belongs in the domain of countries in the stage of transition.

6. Conclusions

According to the fact that the use of digital money on the global level meets with a large number of inconsistencies and challenges, it is considered that its massive use is possible only in the case of official institutions, through the

system of protection regulations for customer's interests, keep the financial stability, like the stability of national currencies, preserve monetary policy, but also establish adequate systems of tracking and charging transaction fees.

Specifically speaking about the future of the use of digital currency in the Republic of Serbia, it is considered that the interest will grow in the upcoming period, in the same trend as at a global level, which will demand the initiation of a set of technological innovations, so that their use would be standardized.

In according to previously mentioned, implications for future research are referring to analyses of readiness of the country's systems for the use of cryptocurrencies, in private, as in the public sector, in the territory of the Republic of Serbia, and other countries. Also, it would be useful to conduct a research of the level of adjustment of the legal regulations for the use of cryptocurrencies in national and international payment transactions.

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THE LIMITATIONS OF INTRODUCTION AND APPLICATION OF THE ACCRUAL BASIS MODEL OF ACCOUNTING INTO THE PUBLIC ACCOUNTING IN FEDERATION OF BOSNIA AND HERZEGOVINA

OGRANIČENJA UVOĐENJA I PRIMJENE MODELA OBRAČUNSKE OSNOVE U RAČUNOVODSTVU BUDŽETA U FEDERACIJI BOSNE I HERCEGOVINE

Abstract

Public accounting is a part of the accounting system, which regulates planning, registering, analysis, monitoring and reporting on business events of budget users and extra budgetary funds. In the Federation of Bosnia and Herzegovina budget accounting is regulated by law and requires the application of the modified accrual basis accounting model, as opposed to the profit sector, in which the accrual basis accounting model is applied. The aim of this paper refers to determine the readiness for introducing the accrual basis accounting model in the Federation of Bosnia and Herzegovina. It is also necessary to determine the intensity of the influence of recognized limitations (human resources, financial and technological support and durability of the reform process) on introducing the accrual basis accounting model in the public accounting in the Federation of Bosnia and Herzegovina. Empirical research will be conducted in the form of a questionnaire with the representatives of the budget users on all levels of authority and extra budgetary funds which, by the laws of Federation of Bosnia and Herzegovina, are obliged to implement budget accounting. The research needs

to confirm whether the majority of public budget users are for improving the existing accounting system and are they ready to accept the changes. It is important to mention that the reform process is significantly slown down by the determined limitations of the accrual basis accounting model, which negatively affects the possibility of the introducing the accrual basis accounting model in the public accounting in Federation of Bosnia and Herzegovina. The contribution of this paper is represented to consider the influence of determined limitations related to application of the accrual basis accounting model in the budget accounting in Federation of Bosnia and Herzegovina and finding the ways to overcome those limitations.

Keywords: budget accounting, accrual basis accounting model, limitations for introducing the accrual basis accounting model

JEL: M41, M48

Sažetak

Budžetsko računovodstvo je dio računovodstvenog sistema, kojim se uređuje planiranje, evidentiranje, analiziranje, nadzor i izvještavanje o poslovnim događajima budžetskih korisnika i vanbudžetskih fondova. U Federaciji Bosni i Hercegovini (FBiH) budžetsko računovodstvo je zakonski regulisano i nalaže primjenu modela modifikovane obračunske osnove, za razliku od profitnog sektora, u kojem se koristi model obračunske osnove. Cilj rada je istražiti potrebu i spremnost za uvođenje modela obračunske osnove u budžetsko računovodstvo FBiH, uz istraživanje intenziteta uticaja prepoznatih ograničenja (ljudski resursi, finansijska i informatička podrška, te dugotrajnost procesa reforme) na uvođenje modela obračunske osnove u budžetsko računovodstvo FBiH. Empirijsko israživanje će biti sprovedeno u vidu anketnog upitnika na reprezentativnom uzorku budžetskih korisnika na svim nivoima vlasti i vanbudžetskim fondovima koji su po zakonima FBiH obavezni primjenjivati budžetsko računovodstvo. Istraživanjem će se utvrditi da li je većina budžetskih korisnika za poboljšanje postojećeg računovodstvenog sistema i da li su spremni prihvatiti promjene. Važno je napomenuti da proces provođenja reformi značajno usporavaju identifikovana ograničenja primjene modela obračunske osnove, koja negativno utiču na mogućnost uvođenja modela obračunske osnove u budžetsko računovodstvo FBiH. Doprinos ovog rada ogleda se u sagledavanju uticaja identifikovanih ograničenja vezanih za primjenu modela obračunske osnove u računovodstvu budžeta u FBiH i iznalaženju načina za prevazilaženje istih.

Ključne riječi: budžetsko računovodstvo, model obračunske osnove, ograničenja uvođenja modela obračunske osnove

JEL: M41, M48

1. Introduction

Budget accounting for a number of years is based on a cash basis; setting up the financial statements in which are compared the actual emoluments and expenditures with those approved by the budget plan. In most countries, this simplified approachis still applied to prepare the financial reports in budget accounting. However, more and more demands are made from the public authorities to move on budget accounting model based on the accrual basis and setting up financial reports following the example of private sector. Greatest advantages which are subscribed to the implementation of budget accounting based on the accrual base model, are disposing more accurate accounting information, better property management and higher efficiency. However, the possibility to transit on application of the accrual base model in budget accounting should be carefully considered, taking into account all identified advantages and disadvantages of using this model. Considering the fact that numerous constraintsare identified which impede or slow down the process of reform in budget accounting, the intent is to research the intensity of their effect on the possibility of introducing the accrual base model in budget accounting in Federation of Bosnia and Herzegovina.

2. Overview of the former researches on accrual base model application

In the Federation of Bosnia and Herzegovina budget accounting is legally regulated and requires the application of modified accrual base model, as opposed to the profit sector, which uses the accrual basemodel. The modified accrual base model represents improvement compared to the earlier application of the monetary basis model, but it nevertheless appears insufficient to respond to changes that occur in the field of budgetary accounting. In this sense, the modern international trends budgetary accounting transformation encourages the application of the full accrual base accounting model in the public sector. The first country to adopt the accrual base accounting model was Chile in the 1970s, followed by New Zealand in the 1990s and the US in 1997. In the early 2000s the United Kingdom and Canada have switched to using the accrual base accounting models in the budget accounting, and by mid 2003, half of the OECD member countries (Organization for Economic Cooperation and Development*)* have adopted this model. These data show that the countries are rapidly transitioning to the use of accrual base accounting models in the budget accounting and financial reporting of public authorities (Wynne, 2003, p. 4).

According to the survey "Ernst & Young" in March 2015 the countries in Asia, especially Indonesia, Malaysia and Sri Lanka are seriously considering transition from modified cash model to accrual accounting. Unlike these countries, China and Singapore still base their budget accounting on a cash basis model.

According to a global survey of audit company "Price Waterhouse Coopers" from April 2013, "Towards a New Era in Government Accounting and Reporting", states that the greatest progress in terms of the transition to accrual accounting in the public sector is expected in the Asian, African and South American countries, in which is recorded higher economical progress, and thus increased the need for public goods, services and infrastructural investments.

At the level of European Union, first countries that began applying accrual accounting are Spain, Sweden and the United Kingdom. Today, the situation is heterogeneous in the sense that the accounting system of each member state is different. In many countries, the accounting system differs across different levels of public authorities or regions. In general it can be concluded that countries which later joined the European Union, apply the accrual accounting in the public sector to a greater extent than older Member States. Also, accrual accounting is more applicable at local, rather than on national levels of authority (Hladika, 2014, p. 25).

The research results on the state of public sector accounting in Europe, which in 2010 was conducted by Ernst & Young and the Center for Accounting Research in the public sector at the University of Ghent, showed that the majority of European countries support the application of the accrual base model, to improve cost efficiency, easily performing of external accountability and monitoring control, better managing the performance, and better asset management and obligations.

Countries in transition, as well as developed countries, bravely accepted the process of public sector reform and the introduction of the accrual base model in the public accounting sector. However, it is becoming increasingly clear that the advantages of using accrual base models in practice are difficult to achieve (Wynne, 2008, p. 119). Countries in transition are faced with numerous difficulties and obstacles, which is not the situation in developed countries (Athukorala & Reid, 2003, p. 54-55): capacity constraints may be too difficult and insurmountable, in the country there may be some other priorities besides upgrading and improving the accounting, corruption and existing interests may undermine efforts, donor activities can reduce

compliance, limited technology infrastructure can reduce the scope for implementing reforms and increase costs, and supreme revision institutions may have limited capacity. If countries like Australia, New Zealand or the United Kingdom, who were pioneers in introducing the accrual base model, knew earlier what they know today, it is possible that they never would have started with the reform in public sector (Dorotinsky, 2008).

3. Theoretical research concept

3.1. Models of accounting bases

According to Vašiček *et al.* (2007, p. 28) accounting basis can be defined as "the totality of generally accepted accounting assumptions and the timing of recognizing the transactions or events in the financial statements for a specific period". There are two basic models: cash basis model and accrual basis model. Their variations and adjustments created models known as: modified cash basis model and modified accounting basis model (accrual). In addition this paper will present the characteristics of each of the models, their advantages and disadvantages, and limitations of their application in practice.

According to IFAC (1991, p. 2) when using monetary basis, business events and transactions are recognized at the time the money is received - charged receivables (which has never been registered) or when the money is paid - paid obligation (which has never been recorded). This accounting concept is still widespread in national budget accounting systems. The reason for this is the fact that this approach to accounting is useful for monitoring achieved level of spending financial resources in relation to planed ones. For that compendiously coverage of accounting information contained in the financial statements, a very important source of accounting information and the notes following the financial reports (Hladika, 2013, p. 58). The benefits of the monetary base are reflected in the simplicity and precision in the expression and measurement of elements of the financial reports and the possibility of monitoring the gathering and spending the public money. However, there are numerous disadvantages and limitations of monetary base, which in some areas of application are pointed out from the aspect of the usefulness for accounting information, so that they question the validity of its application.

By the variations and adjustment of the monetary basis model, a model of modified monetary basis is based. The modification of the monetary base is

aiming at recognizing the extended scope of accounting information and the recording of additional business events in relation to the monetary base. The most common form of adjustment consists in the "extension" of the fiscal year, or appreciation of the cash flows in a given period, after the year ends, for which the reports are compiled (Vašiček *et al.*, 2011, p. 29). The advantage of using the modified monetary model is reflected in the compilation of financial reports that more objectively and more realistic reflect the financial reality of the reporting period, that is, more realistic confrontations of the incomes (revenues) and their associated expenditures. The disadvantages in applying the modified monetary basis model are the same as for the application monetary basis model. Records of cash flows are partially more complicated, because in the "specific period" are parallel records of transactions and business events for two accounting periods.

It can be concluded that the restrictions of monetary base model and its variations are significant and in some areas so emphasized that the present trend in the development of accounting budget systems is total or partial abandonment of the monetary base model and the introduction of accounting (accrual) base models. The model of accounting or accrual basis represents the recognition of business events and transactions at the time when they really happened. In the literature, the accrual basis accounting model is called as the full model of the event occurrence, since it includes the overall recognition of assets, liabilities, revenues and expenditures. Due to the numerous limitations in the transition to the accrual accounting basis model, most countries in the transition period apply a model of modified accrual basis.

Model of modified accrual basis differs among countries and depends on each country that creates it according to its own characteristics and depending on the primary goals of financial reporting. Viewed from the aspect of accounting information that the model of the modified accrual basis gives, the same is set between the model of the monetary base and the model of the accrual basis. Current budgets laws in Federation of Bosnia and Herzegovina undertake to apply a model modified accrual base. Depending on the applied accrual basis modification, it directly depends on the scope of the accounting information contained in the financial reports. According to the model of modified accrual base, items of income will be recognized in the period in which they are measurable and available, and items of expenditure and expenses are recognized in the moment when the goods or services are received (or when obligations

incurred), which is identical to the recognition of expenses with the accrual basis (Vašiček, 2004, p. 98). The amortization is not recognizedin expenses, since all costs related to the acquisition of physical assets, subject to amortization are recognized as an expense already in the period of acquisition of such property/assets.

3.2. Limitations in the application of the accrual basis model in budget accounting

From the previous section we can conclude that only the application of the accrual basis model in the budget accounting provides comprehensive, high-quality and complete information about income, expenses, assets and liabilities. However, besides many advantages of the introduction and application of accrual basis model in the budget accounting, it is necessary to point out the limitations and risks that accompany its introduction. According to Deloitte (2004, p. 8), the most significant obstacle to the introduction of the accrual basis model in the public sector represent human resources: resistance to change (lack of accepting the need for change), lack of executive staff, unrealistic expectations, lack of related teams and unmatched teams and skills of users. Summing up the available literature related to the application of the accrual basis model in the budget accounting, it can be said that the main disadvantages and limitations in applying the accrual basis model in the public sector are human resources, financial resources, IT support and continuance and complexity of the process (Hladika, 2013, p. 107). In the addition of this paper, the theoretical part will be supported by the empirical research on possibilities and advantages of the introduction and in application of accrual basis model in budget accounting in Federation of Bosnia and Herzegovina, as well as the effects of identified limitations on budget accounting reforms in Federation of Bosnia and Herzegovina.

4. Methodology of empirical research

In accordance with the aim and purpose of the research is defined research hypothesis, which states: identified limitations of the accrual basis model (human resources, financial resources, IT support, durability and complexity of the process) negatively affect the possibility of introducing the accrual basis model in budget accounting in Federation of Bosnia and Herzegovina.

In the checking process to set the hypotheses, through the theoretical part of the study, up to now are applied the following scientific methods: hypothetical-

deductive method, method of analysis, the methods of compilation, method of induction, method of deduction, comparative method, method of classification and description method. By detailed and comprehensive analyses of the secondary data source, the key acknowledgments are identified, which served as the base for the implementation of the empirical part of the research. Empirical research was conducted in the form of a questionnaire with the representatives of the budget users and extra budgetary funds which to all current laws in Federation of Bosnia and Herzegovinaare obliged to apply budget accounting. After a comprehensive approach, we came to the information that on the territory of Federation of Bosnia and Herzegovina there are around 600 institutions that are required to implement budget accounting, or more precisely 576, which also represents the total population. The survey questionnaire was sent to 100 units of budgetary accounting, taking into account the representation per canton. Sending questionnaires was mostly done by post office, and less done by mail, and personal contact. The collection of data was carried out in the period of March - April 2016. The right way the questionnaire is filled out and returned by 57 units of the public sector, which means that the selected population N is consisted of 57 units. For statistical analysis of the data obtained is used one software package SPSS for Windows 21. Results are displayed in text, tables and charts, using Microsoft Office Word 2007 and Microsoft Office Excel 2007. In the following chapters, are presented the results of conducted empirical research.

5. Interpretation and discussion on research results

After the completion of the data collection phase, an analysis of the respondents' collected responses began. It was found out that in the total of 100 questionnaires sent to the units, 32 questionnaires were not answered, while 11 questionnaires were considered invalid. The total number of returned correct questionnaires was 57. When we put in the ratio of questionnaires returned and the size of the sample/population (N), we get a percentage which is 57%. In addition paper has summarized the interpretation of answers. First, we have explored the attitudes of users on need and willingness to change the current system of budget accounting in Federation of Bosnia and Herzegovina, introducing the accrual basis model. From a total of 57 questionnaires, 97% or 55 respondents felt that the current system of budget accounting, which is based on the application of modifies accrual basis, needs to change, improve and enhance the introduction of the accrual basis model, which would spread the coverage of accounting information. 30% or 17

respondents are completely for change, while 67% or 38 subjects partially accept the change. Only 2 subjects (3%) consider that changes in the current budget system are not necessary (Chart 1).
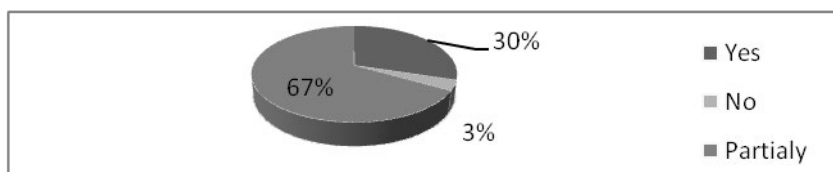
Chart 1. *Readiness to change and improve the existing budget accounting system by introducing a accrual basis model*

Source: Authors' research

Chart 2 shows the willingness of respondents to changes in the accounting system. 48 respondents (84%) responded to be ready for changes. The remaining 9 respondents (16%) are satisfied with the current state and are not ready to accept changes in the current budget accounting system. After applying the descriptive statistics,we approached to application of non-parametric tests, in order to establish relation between two or more variables.
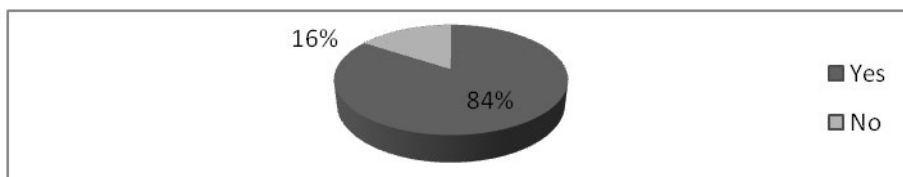
Chart 2. *Readiness to accept changes in the budget accounting system*

Source: Authors' research

In Table 1 are presented the differences in responses between those respondents who replied that the existing model of the modified accrual basis (group I) should be changed in relation to those that are not for changes (group II). The results show that respondents who consider that the existing system should be improved, positively asses the need for the introduction of the accrual basis model (Md = 4.00) in relation to those who consider that any any changes to the existing system are not necessary (Md = 1:50), U = 0 , 5, p = 0.009 **.

Table 1. *Evaluation of the need for changing the existing accounting system based on the modified accrual basis model (Mann-Whitney U test)*

Is it necessary to change the existing system of modified accrual basis (I group Yes, II group No)	Group I	Group II	U	p
	Md	Md		
Model of the accrual base - is it needed?	4.00	1.50	0.500	0.009 **

** Statistical significance at the level of 0.01%

Source: Authors' research

In the continuance of paper, we examined the effect of the identified constraints on the introduction of aaccrual basis in budget accounting in Federation of Bosnia and Herzegovina. Chart 3 shows that the respondents consider that the duration and complexity of the process reform of budget accounting is the most important constraint for the introduction of accrual basis model. The stated limitation was assessed by the respondents with a very high score of 4.11. The next limiting factor is the provision of financial resources for the implementation of the reform (4.05). A significant barrier to the introduction of the accrual basis model represents also the ensuring of adequate IT support (3.95) and human resources (3.72).
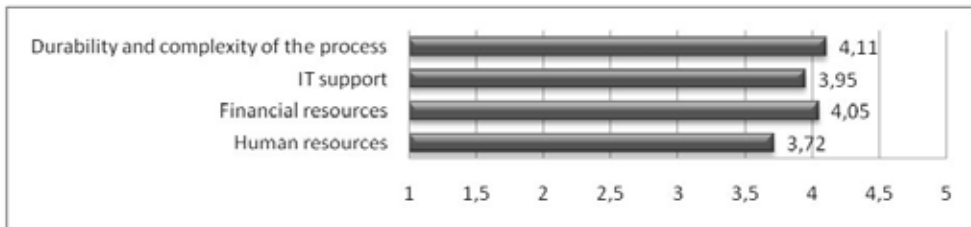
Chart 3. *Estimation of restrictions for the introduction of the accrual basis model*

Source: Authors' research

In addition of this paper, we analyze the components of each of the four separate limitations (Charts 4-7). Component of constraints "human resources", which the respondents evaluated with the highest average 3,82 is insufficient information about the necessary changes in the budget accounting (Chart 4).

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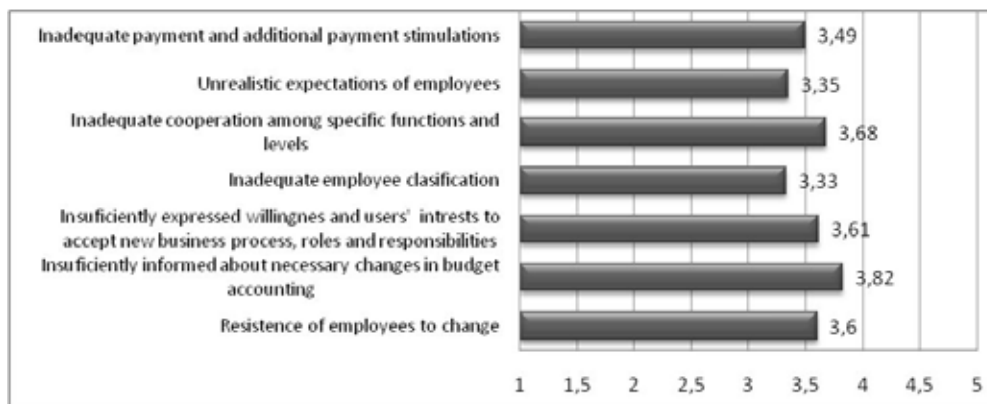
Chart 4. *Assessment of components and limitations of "human resources" to the introduction of the accrual basis model*

Source: Authors' research

The rest of components are also recognized as very significant constraints when introducing the accrual basis model. However, for the purposes of this research, it is very important to confirm that respondents consider that they are not sufficiently familiar with the needs for introducing changes in budget accounting. During the analysis of the answers of the overall survey questionnaire, the impression is that the respondents are poorly or almost certainly not familiar with the needs and possibilities of improving the existing country accounting system. And the components of the other three constraints are rated by fairly high grades, which are presented in the charts below. This fact tells us that the restrictions on the introduction the accrual basis model are very significant, and that to a large extent they influence the ignorance of budget users and extrabudgetary funds about possible improvement and of the existing system.

Chart 5 estimates the components and constraints "financial resources", on the introduction of the accrual basis model. As the most significant component, is the investment in new information system and computer equipment (4.26).

Chart 5. *Assessment of components and restrictions "financial resources" to the introduction of the accrual basis model*

Source: Authors' research

Chart 6 shows the assessment of the components of limitation "information support", on the introduction of the accrual basis model. The necessary acquisition of new software and training of employees to work on the new system (4.39) represents the most important limiting factor for the introduction of the accrual basis model. In addition, it is necessary to upgrade the existing information system (3.96), and inadequate technical support contributes to increasing resistance to changes (3.68).
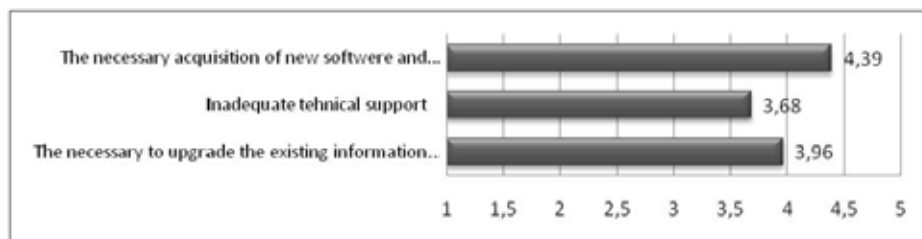
Chart 6. *Assessment of components of limitation "information support" to the introduction of accrual basis model*

Source: Authors' research

In Chart 7 is provided an assessment of components of limitation "durability and complexity of the reform process" in the introduction of the accrual basis model. The restriction which expectedly received the highest score of respondents 4.19, is that the in Federation of Bosnia and Herzegovina is difficult to achieve in a long-term political support.

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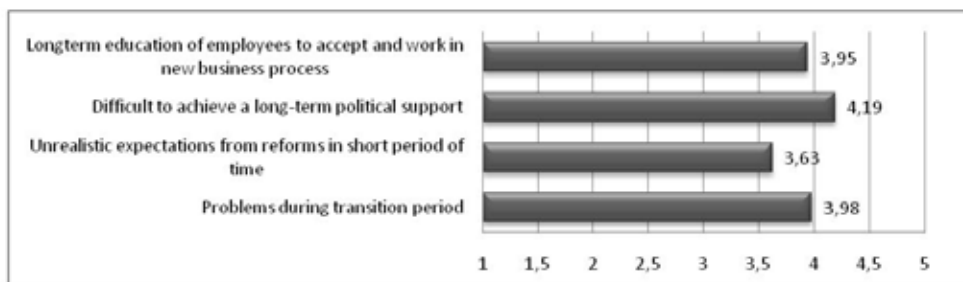
Chart 7. *Assessment of components of limitation "durability and complexity of the reform process" in the introduction of accrual basis model*

Source: Authors' research

After we have interpreted the result of the survey by using descriptive statistics, in the continuation of this paper by using non-parametric tests we considered proving the hypotheses.

In Table 2 are presented the differences in the assessment of restrictions between those respondents who answered that is needed to change the existing model (group I), compared to those who think that there is no need for changes (group II). Considering that there was no statistically significant difference, we conclude that the respondents in the same way (very high grades) assessed/graded the limitations for introducing the accrual basis model, regardless of whether they are for change or not.

Table 2. *Difference in assessment of constraints depending on whether the respondents are for change or not (Mann-Whitney U test)*

Limitations/ for and against the introduction of the accrual basis model (Group I - YES, Group II - NO)	Group I	Group II	U	p
	Md	Md		
Human resources	3.57	3.71	47.50	0.752
Financial resources	4.00	4.50	35.50	0.429
Technical support	4.00	3.00	14.00	0.080
Durability and complexity of reform process	4.00	3.75	45.00	0.692

Source: Authors' research

In Table 3 are presented the differences in the evaluation of constraints, depending on the job of respondents (Group I – expert associate, Group II – managerial positions, Group III – revision/inspection, Group IV – administrative financial worker).

Table 3. *Difference in assessment of constraints depending on the workplace of the respondent (Kruskal-Wallis test)*

Restrictions / work place of the respondents	Group I Md	Group II Md	Group III Md	Group IV Md	c²	p
Human resources	3.57	3.43	4.00	3.14	2.558	0.465
Financial resources	4.33	4.00	3.67	4.17	5.354	0.146
Technical support	4.00	4.00	4.00	4.00	1.633	0.652
Durability and complexity of the process reform	4.13	3.75	3.88	3.88	1.954	0.582

Source: Authors' research

The Kruskal-Wallis test did not disclose a statistically significant difference in the assessment of the constraints depending on the division of the respondent to the workplace. Regardless of the workplace of the respondents, all of them pretty highly rated restrictions in introducing the accrual basis model.

Table 4. *The difference in the assessment of restrictions depending on the qualifications of the respondents (Kruskal-Wallis test)*

Limitations / professional qualifications of respondents	Group I Md	Group II Md	Group III Md	c²	p
Human resources	3.00	4.29	3.50	7.034	0.030*
Financial resources	4.00	4.83	4.00	5.800	0.055
Technical support	3.67	4.50	4.00	4.726	0.094
Durability and complexity of the process reform	4.00	4.75	3.88	4.517	0.105

* Statistical significance at the level of 0.05%

Source: Authors' research

In Table 4 was examined the method of evaluating the constraints depending on the professional qualifications of the respondents (group I – high school, group II – faculty, and group III – university). A statistically significant difference of 0.03 was achieved when assessing the grading of restrictions "human resources". Respondents with a university education estimate that human resources are a greater limitation for the introduction of an accrual basis model than those with secondary and higher education.

Table 5. *Spearman's correlation coefficient between constraints and information needs by applying different accounting models*

Limitations/ coverage of information	Spearman correlation coefficient	
	Satisfying the need for information by applying the modified accrual basis model	Comprehensive accounting information by introducing aaccrual basis model
Limitations in total	-0.384**	0.425**
Human resources	0.017	0.99
Financial resources	-0.391**	0.393**
Technical support	-0.232	0.286*
Durability and complexity of the process	-0.470**	0.249

** Statistical significance at the level of 0.01%

* Statistical significance at the level of 0.05%

Source: Authors' research

The correlation analysis confirmed the statistically significant negative relationship between the constraints and satisfying information needs by applying the model of the modified accrual basis model. This can be interpreted in a way that those respondents who are less satisfied with the current accounting information (collected by application of modified accrual basis model) are considered very significant limitations for the introduction of accrual basis model. By correlation analysis it was confirmed a statistically significant positive relationship between constraints and comprehensiveness of accounting information by introducing the accrual basis model (correlation coefficient 0.425**). This can be interpreted in a way that those respondents who believe that the introduction of the accrual basis would have a positive impact on the scope of accounting information, also think that there are very significant limitations, which might hinder the process of reform of budget accounting.

Taking into account the results of the statistical analysis presented in Chart 1-7 and Tables 1-5 we can conclude the following: research hypothesis is confirmed. Descriptive statistics confirmed that respondents considered very significant limitations (human resources, financial resources, IT support, durability and complexity of the process) during the introduction of the accrual basis accounting model in budget accounting. Restrictions were

assessed as very significant, whether or not the respondents were for changes, and regardless of the workplace of the respondents. There is a statistically significant difference at the level of 0.03 for respondents with higher education, who consider the limitation "human resources" more significant in relation to the answers of respondents with secondary and university education.

6. Conclusions and recommendations

The modified accrual basis in the budget accounting, which is currently in force in Bosnia and Herzegovina and neighboring countries, refers to the recognition of business events and transactions at a time when they actually occurred. Summing up the available literatures regarding the application of the accrual basis model in the budget accounting are identified numerous deficiencies and limitations in application of the accrual basis model in the public sector. Empirical research conducted in the area in Federation of Bosnia and Herzegovina, the research hypothesis which states: identified limitations in application of the accrual basis model (human resources, financial resources, IT support, durability and complexity of the process) negatively affect the possibility of introducing the accrual basis model in budget accounting in Federation of Bosnia and Herzegovina, is confirmed. Accounting professionals and users of accounting information are for improvement of the existing accounting system by introducing accounting basics models and are ready to accept the changes, but they are also very aware of the restrictions, which are blocking the implementation of reforms. Firstly, it is necessary to ensure a strong and sustained political support, because without it, the Federation of Bosnia and Herzegovina is not possible to do anything. The reform agenda is necessary to enter a long-term plan for reform of the national accounting system. Collected primary data, also confirmed the lack of information of key participants in budget accounting for possible improvements to the current system by introducing accrual basis models. Personnel training and the introduction of new information systems require significant financial resources. Because of the difficulties of providing funds for these needs, most of the countries the reform of the state system carry out in stages and often not completely. Because of the significance of this limitation, in the Federation of Bosnia and Herzegovina will be very hard to initiate changes, but not impossible. This paper should serve as a basis for further scientific research on the possibilities to overcome limitations, and as guidelines for possible ways of initiating changes in the budget accounting in Federation of Bosnia and Herzegovina.

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INFLUENCE OF LEVEL OF USE OF ACCOUNTING INFORMATION IN BUSINESS DECISION ON THE LEVEL OF PROFITABILITY OF PRODUCTION COMPANIES IN BOSNIA AND HERZEGOVINA

UTJECAJ STEPENA KORIŠTENJA RAČUNOVODSTVENIH INFORMACIJA U POSLOVNOM ODLUČIVANJU NA NIVO PROFITABILNOSTI PROIZVODNIH PREDUZEĆA U BOSNI I HERCEGOVINI

Abstract

The paper investigates the existence of a link between the achieved level of profitability and the degree of use of accounting information in business decision making. Information forms the basis of anticipating future economic trends, timely adoption of adequate business decisions, and ensuring the survival, growth and development of the company in turbulent economic conditions. The most important source of information for managing business processes and activities of the company is the accounting information system (RIS). It represents the central part of the information system of the company, because it summarizes the data of all functions into a unique set of benchmarks that is suitable for use by the management of all hierarchical levels. In doing so, manufacturing companies have the most complex RIS organization. On the other hand, the management of manufacturing companies has a need for a wider range of accounting information than is the case in other economic activities.

The research hypothesis proved in the paper reads: "A higher degree of use of accounting information in business decision-making has a positive impact on the net profit margin from business activities in Bosnia and Herzegovina

manufacturing enterprises". In addition to the above, we will investigate whether there are differences in the level of use of accounting information in the Bosnia and Herzegovina manufacturing companies in terms of the size criteria. The research sample includes 110 profitable production companies from Federation of Bosnia and Herzegovina and Serbian Republic . Hypothesis testing will be performed with an alpha level of confidence of 95%, using correlation and regression analysis, as well as descriptive statistical processing. The results of the survey will determine the required level of investment in the development of RIS.

Sažetak

U radu se istražuje postojanje veze između ostvarenog nivoa profitabilnosti i stepena korištenja računovodstvenih informacija u poslovnom odlučivanju. Informacije čine osnovu anticipiranja budućih privrednih kretanja, pravovremenog donošenja adekvatnih poslovnih odluka, te osiguranja opstanka, rasta i razvoja preduzeća u turbulentnim uslovima privređivanja. Najznačajniji izvor informacija za upravljanje poslovnim procesima i aktivnostima preduzeća je računovodstveni informacioni sistem (RIS). On predstavlja centralni dio informacionog sistema preduzeća, jer sumira podatke svih funkcija u jedinstveni skup mjerila koji je pogodan za upotrebu od strane menadžmenta svih hijerarhijskih nivoa. Pri tome proizvodna preduzeća imaju najsloženiju organizaciju RIS-a. Sa druge strane, menadžment proizvodnih preduzeća ima potrebu za širim spektrom računovodstvenih informacija, nego što je to slučaj u ostalim privrednim djelatnostima. Istraživačka hipoteza koja se u radu dokazuje glasi: "Veći stepen korištenja računovodstvenih informacija u poslovnom odlučivanju ima pozitivan utjecaj na neto profitnu maržu iz poslovnih aktivnosti u proizvodnim preduzećima Bosne i Hercegovine". Pored navedenog istražit ćemo i da li postoje razlike u nivou korištenja računovodstvenih informacija u proizvodnim preduzećima Bosne i Hercegovine posmatrano spram kriterija veličine. Istraživački uzorak broji 110 profitabilnih proizvodnih preduzeća iz Federacije BiH i Republike Srpske. Testiranje hipoteze će biti izvršeno uz alfa nivo pouzdanosti od 95%, primjenom korelacione i regresione analize, kao i deskriptivnom statističkom obradom. Rezultati istraživanja će determinisati potreban nivo investiranja u razvoj RIS-a.

1. Introduction

If we consider the process of managing a legal entity as a function, then we can say that it is a function with at least four basic variables that comprise: planning, decision making, management and control. In doing so, the management process is achieved by successive decision-making and control of the results of their implementation. Namely, management in each dimension can only be achieved through the decision-making process. In doing so, we can define the decision as a rational choice between several different alternatives. Decision making is a process that takes a shorter or longer time, in which a choice is made between two or more options, with the aim of solving the problem with an optimal cost-benefit relationship. From this we conclude that the management process, with the aim of achieving a positive business outcome and survival on the market, cannot be achieved without the possession of timely and quality information, both financial and non-financial. All four variables of the backbone management process are information. In addition, the complexity of information needs, the way they are acquired and processed, requires a well-developed information system. Without an adequate information system in the company, there is no efficient use of collected information by decision makers.

2. Previous research

The most important source of information for managing business processes and activities of the company is the accounting information system (abbreviated RIS or AIS from the Accounting Information System). With this view, numerous authors agree (Petroian, 2012; Royaee, Salehi & Aseman, 2012; Trimisiu Tunji, 2012.). Ježovita (2015, p. 61), based on the conducted research in Croatia, concludes that more than 60% of respondents regularly use accounting information and accounting reports for making business decisions. According to Osmanagić Bedenik (2007, p. 381) for accounting control purposes in the information structure, accounting information with 97% share was dominantly emphasized. The results of the surveys (Puškarević & Gadžo, 2014) on the sample of 103 Tuzla Canton production companies showed that the accounting information is mostly used for the purpose of control (weighted average grade 4.15), then for analysis (4.13), reporting on work (4.12), and at least for the purpose of making decisions (4.01) and planning (3.99). The accounting function is underdeveloped and the quality of accounting information is inadequate. The survey also showed that the top

management (74.75%), the lowest level of management (66.01%) and the least middle management level (61.16%) were the most frequent accounting information in Tuzla Canton manufacturing enterprises. These results are contrary to the usual theoretical allegations that participation of accounting information for management needs decreases, looking from the bottom to the top of their hierarchy. One of the main reasons for this situation is that higher levels of management do not transfer powers to lower levels, but concentrate all the powers within their jurisdiction.

The fact is that the owners of the company are reluctant to leave the management function to professional managers. This is also supported by one of the indicators of Global Competitiveness, according to which Bosnia and Herzegovina according to the criterion of willingness to delegate powers to 85th place out of a total of 138 countries. And the next reason for this state is the size of the company in Bosnia and Herzegovina, where the size criteria are not compatible with the regulations in EU. For comparison, according to research by Ullah, Khonadakar & Fahim (2014, p. 18), there is a significant link between accounting information and strategic decisions, *i.e.* strategic decisions from selected areas are significantly dependent on accounting information. According to their research (in Bangladesh), 44.44% of respondents use accounting information in making strategic decisions in the production industry.

Accounting information plays a crucial role in making business decisions and achieving organizational performance (Syanbola, 2012, p. 33). The accounting information system leads to a better business decision-making process, a better internal control system, improves the quality of financial reports and facilitates the process of financial transactions (Sajady, Dastgir & Nejad, 2008, p. 49; Mudashiru *et al.*, 2013, p. 31).

The use of RIS leads to better economic and financial performance (Siamak, 2012, p. 136). The author has proven a positive relationship between the use of RIS, and financial and organizational performance. In addition, there are numerous similar studies that confirm the relationship between accounting information, reducing uncertainty in business and achieving positive business performance (Kharuddin, Ashhari & Nassir, 2010; Grande, Estebanez & Colomina, 2011; Gullkvist, 2002; Kouser, Awan & Shahzad, 2011; Chong, 1996; Hubber, 1990; Mia & Chenhall 1994; Keimer, 2008; Nicolaou, 2000.).

McAfee's research, Brynjolfsson (2012) resulted in the conclusion that a company that they consider to be date-driven in making business decisions have a more objective measurement of financial and operational results. These companies are on average 5% more productive and 6% more profitable than their competitors. Also, the study of the effects of accounting information on the profitability of the Nigerian banking industry, by Agbaje, Busari, and Adeboye (2014) resulted in the conclusion that the availability of accounting information had a positive impact on the profitability of the Nigerian banking industry.

According to Oracle (2008, p. 4), profitability and cost management (PCM) is the key to managing business performance. Oracle identifies the five stages of PCM's evolution in the company, based on which we identified the five stages of profitability management and their interaction with the accounting system, and other factors that influence the approach to profitability management. It is not possible to switch to a higher development level of profitability management without the evolution of the accounting system.

All these studies confirm the great significance of accounting information in the business management process of the company. Therefore, we can say that secondary research speaks in favor of the importance of the role of the accounting system in achieving long-term corporate profitability management.

3. Empirical research methodology

Recognizing that top management is the most frequent use of accounting information in manufacturing companies in Tuzla Canton, it gives us a clear indication that they are primarily bearers of the profitability management function. Top management does not only deal with strategy but also to a good extent and tactical management of business performance of the company. They are the ones who decide on selling prices, the way of managing costs, the value created for end customers, and so on. All the essential issues that make up the backbone of the applied way of managing profitability are under their jurisdiction. On the other hand, research has shown that accounting information is used most for control purposes, and at least for the purpose of making business decisions and planning future activities. Recognizing that accounting information systems in domestic production companies are not at an adequate level of development, and the results of secondary research that speak of the need to use quality accounting information to manage business

performance, the paper seeks to investigate whether the degree of use of accounting information in the business decision making process foreign top managers, has a reflection on the level of profitability of production companies in Bosnia and Herzegovina.

Therefore, the paper aims to confirm or disprove the following research hypothesis: "A higher degree of use of accounting information in business decision-making has a positive impact on the net profit margin from business activities in Bosnia and Herzegovina manufacturing enterprises". The indicator of the independent variables in the survey is the rating of the management of the percentage share of accounting information in the process of making business decisions, while the net profit from business activities is selected as the indicator of the dependent variable. Namely, the only net profit from operating activities is a reflection of business performance derived from the regular business activities of the company, and it is not burdened with financial income / expenses, as well as income / expense from adjustment and disposal of fixed assets.

In addition to the central research question, we will investigate whether there are differences in the level of use of accounting information in the Bosnia and Herzegovina manufacturing companies according to their size. The enterprise size criterion is defined in the Law on Accounting and Auditing in Federation of Bosnia and Herzegovina.

The population, on which the survey was conducted, consists of profitable production companies, example, industrial enterprises at the level of Bosnia and Herzegovina (Federation of Bosnia and Herzegovina and Republic of Srpska). In addition, industrial enterprises include sectors: mining and quarrying, manufacturing, and the production and supply of electricity, gas, steam and air conditioning. According to the profitability criteria, the population was composed of enterprises that showed a positive business result for the last four years (2010, 2011, 2012, and 2013) compared to 2014 when it was structured sample survey. An unprecedented quota pattern was created from the population. The choice of this type of sample was necessary for two reasons: 1. the population consists only of profitable (healthy) enterprises; 2. The structure of the population consists of three types of industrial enterprises with varying degrees of participation (the degree of their participation varies in Federation of Bosnia and Herzegovina and Republic of Srpska, as well as the degree of participation of profitable enterprises).

Table 1 presents the method of selecting samples from the population of profitable industrial enterprises in Federation of Bosnia and Herzegovina and Republic of Srpska.

Table 1. *Calculation of the size and structure of the sample*

Description of the sector and budget	FBiH	% in N	N FBiH	RS	% in N	N RS	Nr. Pred.	uk. N	Uch. no.	% in ∑N	N	% in n
Mining and quarrying	155	0.19	29	105	0.66	69	260	99	0.04107	0.04499	5	0.04545
Manufacturing	3851	0.41	1579	1843	0.21	387	5694	1966	0.89953	0.89574	98	0.89091
Energy sector	275	0.26	72	101	0.58	59	376	130	0.05940	0.05927	7	0.06364
Total	4281		1680	2049		515	6330	2195	1.00000	1.00000	110	1.00000

Note: N-population, n-sample; FBiH-Federation of Bosnia and Herzegovina; RS-Republic of Srpska

Source: Authors' research

Data on the total number of enterprises by sectors for the Federation of Bosnia and Herzegovina and Republic of Srpska, and the percentages of profitable enterprises, were obtained from the state agencies FIA and APIF, which are in charge of the information processing of data presented in the annual and semi-annual financial statements. Out of the population of profitable companies in the Federation of Bosnia and Herzegovina industrial sector, a sample of 110 companies was selected, which makes 5.011% of the surveyed population. A survey was selected for the data collection technique. The survey was conducted in the period of 1/7/2014 to 25/5/2016. Survey questionnaires were sent to respondents via mail, fax or in person.

4. Results and interpretation of the research results

By investigating the percentage participation of accounting information in overall decision-making information, we obtained the results shown in Figure 1.
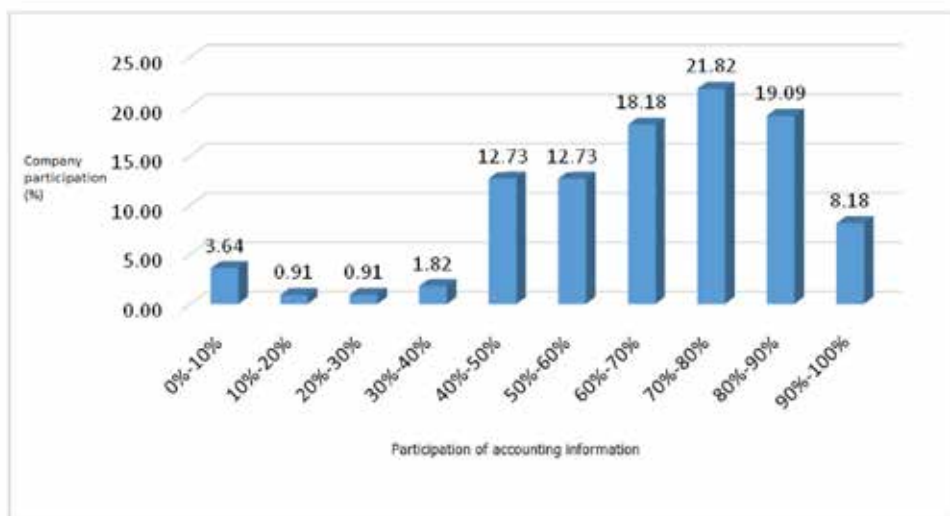
Figure 1. *Participation of accounting information in purchasing information for decision making*

Source: Authors' research

According to the results presented in the picture, there is a difference in the proportional representation of individual intervals of the percentage share of accounting information in the total information for making decisions. The most frequent is the share of accounting information in the interval of 70-80%, followed by participation at intervals: 80-90% and 60-70%. The obtained results show that RIS is the basis of the management information system in the manufacturing the enterprises of Bosnia and Herzegovina and that the participation of accounting information in the decision-making process is at an enviable level.

The correlation calculation of the percentage share of accounting information in making business decisions and the net profit margin from the business activities of manufacturing enterprises is shown in Table 2. Since we did not have the frequency of the expected frequencies of the obtained hi-quadratic statistics in all cells of Table 5 or more, the research we applied Spearman rank correlation of the same variables. The obtained survey results indicate that companies that use accounting information in decision making business mostly have a higher net profit margin from business activities. We can say that a higher level of percentage share of accounting information in the decision-making process follows the weak growth in the net profit margin from business activities with Spearman coefficient ranking rho = 0.271 (p <0.004).

Table 2. *Correlation of the percentage share of accounting information in decision making and net profit margin from operating activities*

		Net profit margin from business activities
Proportionate participation of accounting information in decision making	Rho	0.271
	P	0.004
	N	110

Note: Spearman's rho correlation ranking coefficient, n-sample size, p-probability of rejecting the zero hypothesis

Source: Authors' research

In the box plot diagram (Chart 1) according to the position of a mediator shows that companies that have higher percentage share of accounting information in decision-making usually have a higher average net profit margin from business activities.
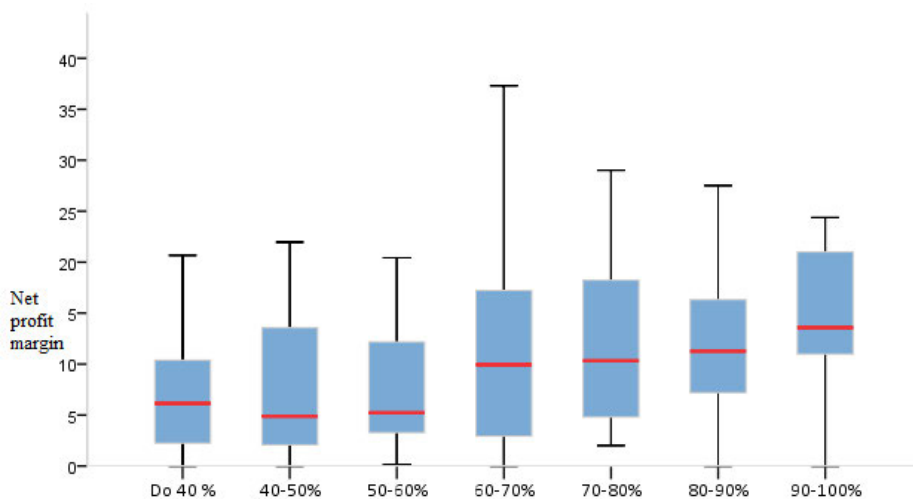
Chart 1. *The median ranges and variables of net profit margin from business activities according to the percentage share of accounting information used in decision making*

Source: Authors' research

Table 3 shows the results of the regression analysis. We can conclude that only 5.6% of variations on the dependent variable can be explained by changes in the independent variable.

Table 3. *Results of regression analsis*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.236[a]	.056	.047	9.255

Source: Authors' research

We have investigated whether there is a dependence between the size of the company and the degree of use of accounting information in the business decision-making process (Table 4).

Table 4. *Associated size of the company with the share of accounting information in the making of business decisions*

		Proportionate participation of accounting information in decision making
	Rho	0.067
Company size	p	0.486
	n	110

Note: Rho - Spearman's rho correlation ranking coefficient, n-sample size, p-probability of rejecting the zero hypothesis

Source: Authors' research

Based on the results of the research presented in the previous table, we conclude that there is no dependence between the size of the company and the degree of participation of accounting information in the decision-making process. It is interesting that small manufacturing companies that use accounting services are relying on accounting information to the same extent as medium and large enterprises. One of the main reasons for such a situation is that the manager in small enterprises most of the economic flows theirself.

5. Conclusion

On the basis of the obtained results of the research we can conclude that the accounting information is the basis of the information system of manufacturing enterprises in Bosnia and Herzegovina. In addition, the accounting information in the overall information for business decision-making takes part in an interval of 50-90% in as many as 71.82% of the respondents. However, the Spearman ranking correlation rho = 0.271 (p<0.004) gives us a clear indication that the degree of use of accounting information in business decision-making is to a small extent related to the change in the value of the net profit margin from operating activities. The regression analysis showed us that only 5.6% of the change in the level of the net profit margin from business activities can be explained by the higher share of accounting information in business decision making. In addition, there is no dependence between the size of the enterprise and the degree of participation of accounting information in business decision making rho = 0.067 (p <0.486). The results of the study show that the central

research hypothesis has not been proven. In other words, a higher degree of use of accounting information does not have a statistically significant impact on the realization of higher net profit margin from business activities.

However, a low indicator of correlation and regression does not necessarily mean that the hypothesis should be rejected. We believe it would be useful to intensify research with additional independent variables using the multiple regression models. It is also a recommendation for future research in this field.

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IMPACT OF SIZE OF JOINT STOCK COMPANIES AND OWNERSHIP STRUCTURE IN THE APPLICATION OF ACCOUNTING CONCEPT OF FAIR VALUE IN FEDERATION OF BOSNIA AND HERZEGOVINA

UTJECAJ VELIČINE DIONIČKIH DRUŠTAVA I VLASNIČKE STRUKTURE NA STEPEN PRIMJENE RAČUNOVODSTVENOG KONCEPTA FER VRIJEDNOSTI U FEDERACIJI BOSNE I HERCEGOVINE

Abstract

The aim is to explore the interdependence of size and ownership structure of joint stock companies, and the level of application of the accounting concept of fair value in financial reporting of businesses of listed companies in the Federation of Bosnia and Herzegovina (BiH). The research becomes more significant findings about the low representation of the application of the concept of fair value in financial reporting, and a relatively small percentage share of registered legal entities whose securities are listed on the capital market in BiH. On the basis of this work will be tested following research hypothesis: "The size of a company and ownership structure positively affect the level of application of the concept of fair value in financial reporting of joint stock companies in the Federation of BiH".
The research will be conducted in 30 joint stock companies quoted on SASE distributed by segments, and to 10 from sub-segment 1 and 20 from sub-segment 2. Limit which is mostly impossible to create a larger sample the availability of financial and audit reports as well as the completeness of the disclosure of the requested information. Formed are support of three checklists, because the applied analysis method to collect documents.
The research results will show whether it is in a transitional economy Bosnian level of application of the accounting concept of fair value determined by the size and

ownership structure. The research results will provide insight into the future use of alternative concepts of "cost" and "fair value" in financial reporting transition of the Bosnian economy.

Keywords: accounting concept of fair value, financial reporting, company size, ownership structure

JEL: M410

Sažetak

Iako je u brojnim anglosaksonskim radovima dokazana međuzavisnost veličine i vlasničke strukture dioničkih društava i nivoa primjene računovodstvenog koncepta fer vrijednosti u finansijskom izvještavanju poslovnih subjekata, korisno je ispitati tu vezu u tranzicijskim ekonomijama gdje je fer vrijednosti u finansijskom izvještavanju na niskom stepenu zastupljenosti i gdje je broj poslovnih subjekata čiji vrijednosni papiri koritraju na tržištima kapitala neznatan. Rad ima za cilj potvrditi ili opovrgnuti sljedeću istraživačku hipotezu: "Veličina poslovnog subjekta i vlasnička struktura pozitivno utječu na stepen primjene koncepta fer vrijednosti u finansijskom izvještavanju dioničkih društava u FBiH".

Naš uzorak čini 30 dioničkih društava koja kotiraju na SASE raspoređenih po segmentima, i to 10 iz subsegmenta 1 i 20 iz subsegmenta 2. Ograničenje koje je u najvećoj mjeri onemogućilo kreiranje većeg uzorka je dostupnost finansijskih i revizorskih izvještaja kao i potpunost objavljivanja traženih informacija. Formirane su tri prateće kontrolne liste, jer je primijenjena metoda prikupljanja podataka analizom dokumentacije.

Rezultati istraživanja će pokazati da li je u tranzicijskoj ekonomiji BiH nivo primjene računovodstvenog koncepta fer vrijednosti određena veličinom i vlasničkom strukturom.

Ključne riječi: računovodstveni koncept fer vrijednosti, finansijsko izvještavanje, veličina preduzeća, vlasnička struktura

JEL: M410

1. Introduction

The main goal of the paper is to give an overview of basic theoretical positions and empirical research on the subject, and to determine whether and to what extent the size of the business entity and the ownership structure influence the degree of application of the accounting concept of fair value in the Federation of BiH joint stock companies. The survey will serve as a good basis for making

specific guidelines in terms of improving the quality of financial reporting of joint stock companies.

In a short overview of previous research, the basis of financial reporting in the context of the research area, clarification of the importance of its role and the main issues resulting from numerous research of this phenomenon will be laid. In the continuation of the work, clarification of the accounting concept of fair value, as well as the indicators for which it is measured, and then explaining the size of the business entity and ownership structure, as important factors determining the degree of application of fair value in accounting. A detailed analysis of correlation relationships between variables, a multiple regression model, and commentary on an analysis will also be shown.

2. A brief overview of the previous research

The central place in corporate governance has accounting and auditing whose responsibility is specifically emphasized in the OECD principles where it is emphasized that the accounting profession is accountable to shareholders rather than management. Corporate governance is defined as "supervisory activity" undertaken by the company's management and audit committees to ensure the integrity of the financial reporting process. One of the most important functions of corporate governance is to ensure the quality of the financial reporting process (OECD, 2004, p. 49).

Therefore, the financial reporting aims to inform external users of the financial position of a business entity, its operating result, changes in cash flows and changes in equity, as well as to explain the stated amounts in the notes in the financial statements in order for potential investors to have good information base for making investment decisions. This is especially important for joint stock companies, as their securities are quoted on financial markets. Although financial reporting is largely regulated by the International Accounting Standards and International Financial Reporting Standards, another degree of concretization in regulation comes from the Law on Accounting and Auditing at the BiH level ("Official Gazette of Bosnia and Herzegovina" No. 42/04), as the umbrella law and entity laws [Law on Accounting and Auditing in Federation of BiH (ZORRFBiH), "Official Gazette of Federation of BiH " No. 83/09", Law on Accounting and Auditing in Republika Srpska (ZORRRS), "Official Gazette of Republika Srpska" No. 36/09, and The Law on Accounting and Auditing in the Brčko District in BiH]. Since financial

reporting is mandatory and legally regulated for all entities, there are unified forms of financial statements that are regulated by the Accounting and Auditing Act in order for financial reporting to fulfill its role in terms of providing comparable information on the business operations of the entity to external users. From the perspective of the theory, this seems to be the area in which the regulation has contributed to the unification of the information provided by the financial statements, but a step forward when it comes to the process of increasing the comparability of the accounting practice of different countries is the implementation of the process of harmonization of accounting systems.

As can be deduced from the previous allegations, financial reporting should provide accurate information about the business operations of each business to external users who are not familiar with the specifics and details of the business itself. However, due to its variability and the need for continuous upgrading of the standards on which financial reporting is based on, it has become an inexhaustible field for scientific and professional research in various aspects of its observation.

In almost all IAS (International Accounting Standards) and IFRS (International Financial Reporting Standards), some form of fair value appears, either as a binding or as an option to evaluate balance sheet items (success rates). The term "fair value" was first mentioned in the 19th century, that is in 1844, when the first Stock Company Act was published. After that, a new law was published in 1856, requiring the financial statements of the company (company) to be compiled fairly and completely so that the business of the company was true and true. Prior to the introduction of compulsory accounting standards, companies could choose their own accounting policies for valuation, so US companies in the 1920s used market prices in accounting valuation (Šodan, 2014. p. 43).

Although the reasons for standardization were clear and justified, there were also numerous implementation problems that can be reduced to the lack of a single definition of fair value in different operating conditions for certain elements of the financial statements, the scattered and inconsistent requirements for fair valuation according to the standards that exist here value is treated, depending on which area of the standard, and very often the incomprehension and complexity of determining the fair value (IASB, 2006). More recently, in 2011, IFRS 13 - Fair Value Measurement was published, whose role was to eliminate all the uncertainties regarding the fair

value model in financial reporting. According to this standard, fair value is defined as the price that would be realized by selling some item of property or paid for the transfer of some obligation in a proper transaction between market participants on the date of measurement, so-called. Outstanding price (KPMG UK, 2013, p. 6) IFRS 13 is effective for annual periods beginning on or after 1 January 2013, with the permitted earlier application, and applies prospectively from the beginning of the year in which it was first applied. When transactions are directly visible in the market, the determination of fair value is relatively simple, but if not, valuation techniques are used. Evaluation techniques should be chosen and applied consistently in a way that makes it possible to use the most relevant visible, available on the input data, while minimizing inaccessible input data.

In order to carry out the desired research in the continuation of the work, it is necessary to define the indicators of the fair value concept. Since the field of our research is financial reporting, then we will focus on the financial statements and its parts in which the application of the fair value concept in the measurement and valuation of balance sheet positions is evident. Notes to the financial statements as key to the set of five law-prescribed reports will give us specific information. This report details the information presented in the previous four financial statements (balance sheet, income statement, cash flow statement and report on changes equity), and shows the applied accounting policies on all significant business transactions and events. This information that is available in the notes is not shown in any other financial statements, and allow for additional business analysis of the business necessary for true reporting. When talking about fair value, each standard that is being treated, whether mandatory or alternative, in the disclosure section, specifies which information should be disclosed in the notes to the financial statements. In this regard, our fair value indicator will be the number of disclosure of information at fair value to joint stock companies at SASE.

3. Methodology of empirical research and discussion of the results

In works dealing with the phenomenon of fair value, we come across a number of indicators that explain the degree of application in practice. The most commonly used in research on the marginal capital markets are:
– Size of business entity,
– Ownership structure.

At the same time, we will consider these factors as independent variables in the model and we will examine their impact on the degree of application of the accounting concept of fair value in the notes to the financial statements. Our central research hypothesis reads:

H0: *The size of the business entity and the ownership structure positively influence the degree of application of the fair value concept in the financial reporting of joint stock companies in the Federation of BiH.*

In accounting theory it is regulated that large business entities provide a more complex range of information in their financial statements than small and medium sized. A positive accounting theory explains that the relevance of information published in the financial statements directly depends on the size of the business entity. According to Watts and Zimmerman (1986, p. 114), large business entities are willing to bear the high cost of publishing information in order to increase confidence in their jobs. According to proprietary theory, the price developed by Dye (1985, p. 126), the management of a business entity quantifies the costs and uses the given information when making a decision to provide a complex set of information in the financial statements. Increased transparency and voluntary disclosure of additional information reduces the overall risk of a business entity, improves opportunities to increase capital and reduce capital costs by Diamond and Verrecchia (1991, p. 1325). The size of the company from the aspect of the Law on Accounting and Auditing of BiH is determined by three criteria: (1) The level of average assets for a year, (2) The level of total income for a year and (3) The average number of employees. Although the financial reporting of all entities is governed by International Accounting Standards and the International Financial Reporting Standards, an option for SMEs is also available, which regulates more specific issues related to the financial reporting of small and medium-sized entities. This standard is summarized on 200 pages and is more suitable for use for those companies that do not have a complex business system and whose securities are not quoted on the stock market. Despite the facilitation, the financial reporting of small and medium-sized entities in BiH is still carried out on the basis of International Accounting Standards and International Financial Reporting Standards.

Joint stock companies whose financial and audit reports will be the subject of the survey are classified into medium and large, but we will, in this context, observe the average assets expressed in convertible marks and the total

income at the end of the accounting period is also monetary. The law also regulates the set of financial statements that the business entities are obligated to submit at the end of the accounting period, and this varies depending on how the enterprise is classified by size. Bearing in mind the aforementioned facts, fair value as the concept of measurement in financial reporting is more suitable for large entities, the ones whose securities are quoted on the stock exchange, and in that direction we set the first auxiliary hypothesis that reads:

H1: *The size of the business entity positively influences the degree of application of the accounting concept of fair value in the financial statements.*

The ownership structure of the company affects the motivation for providing information in the financial statements of business entities. In accordance with the principles of agency theory, the financial statements of entities whose ownership structure has a large number of small shareholders, offer more information to enable shareholders to make correct investment decisions and follow the course of their investment, according to Jensen and Meckling (1976, p. 6).

Chau and Gray (2002, p. 139) provide empirical evidence in their research that there is a positive relationship between the levels of disclosure of data and the level of distribution of the ownership structure, the lack of knowledge in the ownership or independence of the majority of the representatives in the committee. Our auxiliary hypothesis related to this independent variable reads:

H2: *Ownership structure with a larger number of smaller shareholders affects the degree of application of the accounting concept of fair value in the financial statements.*

In order to provide a better presentation of experience from accounting practice in terms of the phenomenon of fair value, we used a qualitative methodology in the research. Bearing in mind that the qualitative methodology implies the primary interpretation of the phenomenon, but not its measurement, it served as a check for hypotheses and the detection of cause-effect relationships within the quantitative part of the research. In order to obtain information on attitudes, beliefs in our pre-research regarding the application of the accounting concept of fair value in the financial reporting of business entities whose securities are quoted on the capital market in the Federation of BiH,

we used the method of focus of the group of external auditors. During the interview, the manager used open-ended questions about what he was doing.

The objective was to investigate whether the degree of application of the fair value concept is the result of certain factors in the specific business conditions of the BiH company. Considering that our research is limited to joint stock companies, or business entities whose securities are quoted on the capital market in the Federation of BiH, external auditors have been selected in this work to conduct an external audit of business entities of the listed characteristics. Recalling that the accounting theory recommends the use of the fair value concept in the financial reporting of all business entities, we talked with participants in a focus group consisting of three external auditors from Tuzla, Gracanica, and Sarajevo. Auditors point out that International Accounting Standards are primarily intended for large business entities, whose securities are quoted on the capital market, and this also applies to the concept of the application of fair value. They emphasize that within the audited financial statements, the concept of fair value use is mainly observed on the positions of equity among quoted business entities. In this regard, it would be useful to further focus on the application of fair value in financial instruments. Although the fair value concept is desirable for application in accounting and financial reporting of all business entities, the large constraint is the lack of an active market for individual asset and liability items.

However, when it comes to the type of external auditing carried out in business entities, they take on contradictory views regarding the requirements in the financial statements. The Sarajevo auditor points out that the business entities whose financial statements revise the "Great 4" have many more positions valued at fair value in their financial statements. Auditors from Tuzla and Gracanica believe that this is a matter of accounting policy and that the auditor does not have much influence on its creation.

The explanation for this position, the auditor from Sarajevo finds that "Big 4" insists on fair presentation of information in the financial statements and avoids historical cost due to international business cooperation and the comparability of financial statements. A higher level of fair value utilization is noted in business entities whose ownership structure is broad. The reasons for this are seen by the auditors in the needs and desires of the owner to provide as much information as possible to the internal and external users through the financial statements as they consider it will greatly facilitate

the making of business decisions. Based on the foregoing, we can conclude that the interviewed auditors agree on the need to apply the concept of fair value in accounting and financial reporting to business entities, but that even on the marginal capital markets, such as the market of BiH, the application itself encounters many difficulties. The empirical research whose results are included in the work begins with the analysis of the audited financial statements of the stock companies quoted on the Sarajevo Stock Exchange (SASE) at the end of 2014. The aim was to determine the degree of application of the fair value concept under the influence of the size and ownership structure of the business entity. The benchmark period for 2014 is still due to the fact that IFRS 13 - Fair Value Measurement came into force in 2013.

Measuring the extent of the fair value concept will be reflected through the publishing index, which is calculated as the ratio of the information about the fair value of the notes and the number of required fair value information for each standard. This index will range from 0 to 1; 0 for business entities that do not use fair values in their accounting, and 1 for business entities where the fair value is present for the valuation of each property position. Below we provide an overview of the selected standards for analysis and the number of required disclosures in terms of fair value.

Table 1. *IAS and IFRS that treat fair value*

Number of standard	Title of the standard	Number of required publications
IAS 2	Stocks	1
IAS 16	Property, Plant and Equipment	3
IAS 18	Revenue	2
IAS 19	Employee benefits	1
IAS 21	Effects of Changes in Foreign Exchange Rates	1
IAS 28	Investments in Associated Entities	1
IAS 36	Impairment of assets	8
IAS 38	Intangible assets	2
IAS 40	Investment in real estate	17
IAS 41	Agriculture	10
IAS 17	Leases	1
IFRS 2	Share-based Payment	11
IFRS 3	Business Combinations	6
IAS 39	Financial Instruments: Recognition and Measurement	6
Total		70

Source: Authors' analysis

Our sample consists of 30 stock companies quoted on SASE distributed by segments, 10 from subsegment 1 and 20 from subsegment 2. Within subsegment 1 there are 30 joint stock companies, and within the subsegment 2, 183 are joint stock companies. So, our population has 213 business entities. The limitation that largely prevented the creation of a larger sample is the availability of financial and audit reports as well as the completeness of the disclosure of the requested information. Three accompanying checklists were formed, as the method of collecting data was analyzed using documentation analysis. It is useful for further analysis to take into account that of 30 joint stock companies, 8 of them are classified as medium by the criteria set by ZORRFBiH, what makes 26.67%, unless 22 enterprises have a classification as large, 73.33%. 13.33% of enterprises are financial institutions, and 86.67% are distributed in production, trade and service activities. Here we will not deal with a descriptive analysis of the sample structure, because this information is not relevant to our research.

3.1. Creating a regression model

In order to determine which method of statistical data processing within the quantitative analysis we will use, we must first determine whether it is a normal distribution of our dependent variable in the population. Based on the standard Kolmogorov-Smirnov and Shapiro-Wilk test of the normal distribution of the variables in the population, we see that $P < 0.05$ in the Sig column, so we can reject the zero hypothesis of the standard error one. The test was carried out for all indicators of independent variables.

Table 2. *Test of the normal distribution of dependent and independent variables*

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Index of publishing	0.286	30	0.000	0.803	30	0.000
Value average assets in KM	0.364	30	0.000	0.460	30	0.000
Value of total revenue in KM	0.351	30	0.000	0.463	30	0.000
Number of shareholders in the structure of the ownership	0.367	30	0.000	0.500	30	0.000

Source: Authors' calculation

If we assume that every stock company from the selected sample reports on its business in compliance with all the stated standards, then under such conditions the number of disclosures in the notes referring to the measurement at fair value would be 70. We calculated the publication index as the sum of the number of publication numbers for each standard in the notes to the financial statements and the total number of possible disclosures provided for by this standard. As already stated above, we examined the impact of the size of the business entity and ownership structure on the degree of application of the concept of fair value in the financial statements of joint stock companies of Federation of BiH. The originally set model of multiple linear regression created on the basis of the main and auxiliary hypotheses reads:

$$\text{Index}O\text{B} = \alpha 0 + \beta 1 * log\text{Akt} + \beta 2 * \text{logPr} + \beta 3 * \text{Vlsn}$$

where is:

IndexOB = quotient of the number of announcements and the possible publication number according to the standard
logAkt = logarithmic values of the average assets of a consecutive period
logPr = logarithmic values of total revenue at the end of the period
Vlsn = Number of owners.

3.2. Analysis and interpretation of results

In this part of the paper we will calculate the coefficients of multiple linear correlation and multi-regression coefficients and interpret the obtained results. Table 3 shows the correlation analysis according to the Pearson coefficient, since we have previously established that the phenomenon is normally distributed. We can conclude that the dependent variable positively correlates with the independent variable of the size of the business entity and the number of shareholders in the ownership structure. The correlation is very strong in terms of the interaction of all variables and in the sequel we will examine whether there is a causal relationship between the variables mentioned above, so that we can confirm or reject the auxiliary and main research hypothesis. *Sig (2-tailed)* as a measure of the statistical significance of the linear correlation coefficient for the occurrence implies that the zero hypothesis is deducted on the significance of the linear correlation coefficient.

Table 3. *The correlation of depended and independed variables*

		IOB	Value od average assers	Value of total income	Number of shareholders in structure
IOB	Pearson	1	0.399	0.336	0.397
	Sig.		0.029	0.069	0.030
	N	30	30	30	30
Value od average assers	Pearson	0.399	1	0.678	0.485
	Sig.	0.029		0.000	0.007
	N	30	30	30	30
Value of total income	Pearson	0.336	0.678	1	0.409
	Sig.	0.069	0.000		0.025
	N	30	30	30	30
Number of shareholders in structure	Pearson	0.397	0.485	0.409	1
	Sig.	0.030	0.007	0.025	
	N	30	30	30	30

Source: Authors' calculation

Table 4 in column *R* shows the multi-regression coefficient, in the column *R Square* the multi-determination coefficient, and in the *Adjusted R Square* corrected multi-determination coefficient. The corrected multiple-determination coefficient is less a biased indicator than the multi-determination coefficient. This means that 12.7% of individual differences in terms of disclosure of fair values can be predicted or explained based on differences in the linear combination of two independent (predictor) variables. Based on the set of these two independent variables we can explain 21.7% of the variability of the degree of application of the concept of fair value.

Table 4. *Coefficient of multiple regression*

Model	R	R square	Adjust R square	Std. error of the estimate
1	0.466	0.217	0.127	0.23312

Source: Authors' calculation

4. Conclusion

By analyzing the conducted research we come to a useful observation, that is, companies whose securities are listed on the capital market in the Federation of BiH have a high degree of application of the accounting concept of fair

value in their financial reporting. The obtained results of the survey are in favor of the fact that the accounting standards are primarily intended for business entities trading on the capital markets, and to posit recommends the use of fair values. Based on the performed qualitative analysis and statistical processing of secondary data through correlation and regression coefficient, we can conclude that we should accept the central research hypothesis, which read to the size of the business entity and the ownership structure positively influence the degree of application of the fair value concept in the financial reporting of joint stock companies in the Federation of BiH.

The size of a business entity, measured by the value of average assets and total income, affects the degree of application of the accounting concept of fair value in the financial statements. Businesses with higher average assets and total income offer more information in the notes to the financial statements in terms of fair value. We have come to the conclusion that the value of the assets and the total income of the business entity positively influence the degree of application of the accounting concept of fair value. Also, the wider structure of the owners of the capital, these are the requirements for fair information display higher. Although the assumptions for applying the concept of fair value in evaluating the assets of business entities in terms of the active market have not been met, it can be concluded that a greater degree of tendency for the provision of fair information is observed in large business entities.

Bearing in mind the above mentioned cut the results of the research, both qualitative and quantitative, provide some recommendations for further research on this phenomenon: (a) conduct a written questionnaire through a questionnaire to support or disprove the information obtained from the documentation analysis; (b) take into account the external audit indicators and examine their impact on the degree of fair value application; (c) determine the extent to which this concept applies to small and medium-sized business entities; (d) to look at the phenomenon from the angle of accounting policies and the entire process of harmonization.

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PERFORMANCE AUDIT OF PUBLIC SECTOR WITH REFERENCE TO MEASURING EFFICIENCY IN THE EDUCATIONAL SYSTEM

REVIZIJA UČINKOVITOSTI JAVNOG SEKTORA S POSEBNIM OSVRTOM NA MJERENJE UČINKOVITOSTI U OBRAZOVNOM SUSTAVU

Abstract

Performance audit contributes to the strengthening of the legality, trust and efficiency of institutions in the public sector, and its main objective is to provide a better quality public service through better spending of public money and a higher level of public accountability. As the education system is one of the most important steps in achieving the best possible quality of the public sector and general social and economic well-being, the purpose of this paper is to demonstrate the impact of the performance audit on the increase of the efficiency and effectiveness of the education system through the activities of top audit institutions. The aim of this paper is to construct a model for measurement of effectiveness and through a comparative analysis of reports of conducted performance audits in the field of education to determine the limits of achieving maximum efficiency.

Keywords: efficiency, education system, performance audit, public sector

JEL: H52,H83, M42, I121

Sažetak

Revizija učinkovitosti doprinosi jačanju zakonitosti, povjerenja i učinkovitosti institucija u javnom sektoru i njen osnovni cilj je kvalitetnija javna usluga kroz

kvalitetnije trošenje javnog novca i veći stupanj javne odgovornosti. Kako je sustav obrazovanja jedan od najvažnijih koraka u postizanju što je moguće kvalitetnijeg javnog sektora i općeg društvenog i ekonomskog blagostanja svrha ovog rada je prikazati utjecaj revizije učinkovitosti na povećanje djelotvornosti i učinkovitosti obrazovnog sustava kroz djelovanje vrhovnih revizijskih institucija. Cilj rada je konstruirati model za mjerenje učinkovitosti te kroz komparativnu analizu izvještaja provedenih revizija učinkovitosti iz oblasti obrazovanja utvrditi ograničenja postizanja maksimalne učinkovitosti.

Ključne riječi: javni sektor, obrazovni sistem, revizija učinkovitosti, učinkovitost

JEL: H52, H83, M42, I121

1. Introduction

This paper focuses on performance audit in the educational system. Performance audit is a manner of controlling the operation of the public sector, and a way for interested parties to gain insights into the flow and results of different public subjects activities, while performance audit reports provide significant gains for the public sector as a whole, its administration and the general public, since they create a reliable basis both for the detection and prevention of irregular operations and for the adoption of corrective decisions going in the direction of increased efficiency and success. Performance audits also provide a significant contribution in the increased efficiency of educational institutions, spurring positive changes in their operation (Mamić Sačer, Vuković & Pavić, 2016, pp. 11-28). Performance audits also greatly contribute to public accountability, and allow auditors to provide practical contributions to increased economical operation, efficiency and effectiveness of public institutions (Okanović & Redžepagić, 2012, p. 47). The goal of performance audit is to assess whether the resources used represent the most economical usage of public funds, whether the use of available resources provides best and timely services, whether strategic goals are met, as well as whether there is any influence on the implementation of those goals.

Education is an important activity which necessitates large financial funds. Worldwide, education expenses annually reach around 240 billion USD. The imbalance between the funds necessary for adequate development of education and insufficient current investments in education puts education into an unequal social and economic position compared with other activities.

The financing of education is defined by the fact that education is considered part of public needs and, as such, part of social activities. Education financing system thus depends on two important pre-existing factors: the first one is the economic and political system of a given country, and the other the concept of financing of public expenditure, which then includes educational institutions. There are important differences in systems and models of education financing in individual countries. Education can be financed from State budgets (centralised system), or from the budgets of regional and local administrative units (decentralised system), or through a combination of the two systems. Education financing sources in Europe and the world are different. The main sources are taxes: income and profit taxes, social insurance taxes, salary taxes, property taxes, indirect taxes and customs duties (tariffs). Depending on the kind of school, interest and economic power, other sources can also appear: subsidies, donations and such, coming from foundations, parents, economic organisations, chambers, and individuals.

2. Literature review

An important role of performance audits is to identify existing shortcomings and provide appropriate recommendations. The implementation of recommendations provided should lead to positive changes in the system as a whole, the creation of new value, and improvement of the functioning of the system or institutions, which is in turn reflected in improved economical operation, efficiency and effectiveness in resource usage (Vuković, 2016, p. 3). Performance audit not only provides initiatives for improvement and increased efficiency; it also promotes transparency and accountability of operation both in the public sector and in the educational system (Audit Office for the Institutions of the Federation BiH, 2013, p. 1). Educational institutions attempt to improve efficiency in the performance of their functions. In that sense, more and more attention is focused on providing higher-quality services, while simultaneously and permanently finding ways to cut costs. Thus, in the conditions of limited resources, with an obvious gap between available means and needs that should be met; and particularly in the conditions of large reforms in many parts of the public sector, performance audit takes on particular significance. In developed societies, the main development factors are science and education. This is because education and care have significant impact on the future quality of human capital, on which successful usage of available natural resources, technology and financial capital of a country depends. This is why, today, in highly developed countries, the greatest

treasure lies in their population. The quick growth of certain small, natural-resource-poor countries, such as Ireland and Finland, can be explained by their development policies, which promoted education and science as their national priorities. The awareness of high profit of education investments is generally accepted everywhere in the world today, as can be seen from the percentages of gross national product provided by different governments for formal education in their respective countries (as a rule, ranging from 5% to 6% of GDP), as well as significant non-budgetary funds coming from enterprises and other organisations, also directed towards formal and informal education of their members, and from individuals towards their own personal growth (Government of the Republic of Croatia, 2002, p. 10). It is the attitude of developed European countries that "Europe must invest in education in order to increase the general level of employees' skills and working population, both during basic education and by supporting the acquisition of knew skills and competences throughout their lifetime" (European Commission, 1996, p. 55).

The concept of the balanced scorecard was first introduced byRobert S. Kaplan and David P. Norton(1992) in their now widely cited Harvard Business Review article, "The Balanced Scorecard – Measures that DrivePerformance". By measuring organizational performance in the BSC perspectives, it complements traditional methods with measures for customers, internal processes, innovations and improvement processes, which are in turn linked to the overall institutions' strategic vision. Azizi, Behzadian, and Afshari (2012) in a detailed review studied on which perspectives in the balanced scorecard are appropriate for the universities. They conducted an extensive survey on different perspectives adopted by a number of universities and higher education institutes around the world. They indicated that universities and higher education institutions as non-profit organizations are able to apply four main perspectives of BSC by replacing customer perspective with financial perspective at top of scorecard (Al Hosaini & Sofian, 2015, p. 26).

3. Model of measurement of efficiency in the educational system

Models based on historical, financial indicators are not sufficient for measuring the efficiency of an educational system. What is needed is the balance in the results measuring system between financial indicators, end-users satisfaction, internal processes, and increased efficiency. An analysis using financial indicators is undoubtedly more than welcome, but it cannot represent end-user

satisfaction, innovation, knowledge and skills of the employees. A model that it is possible to apply in the measurement of efficiency in service providing issues, which gathers together all the elements necessary for the evaluation of performance is known under the name of "balanced scorecard (abr. BSC). This model is also known as the Efficiency and Business Excellence Model, and is a popular tool in the private sector (most often used by strategic management). In this part of the paper, the possibility of the application of the BSC model in the public sector shall be analysed, *i.e.* the specific model will be used as a metric tool for the assessment of efficiency in service-providing public companies.

BSC is a management metric methodology, also known as a "balanced targets map". The authors of the concept, Norton and Kaplan (1996, p. 9) define the BSC model as a "method of translating the mission and strategy into clear, all-encompassing, comprehensive and carefully selected group of performance metrics, ensuring the construction of the system for strategic measurements and managing system." BSC is aimed at companies of all sizes and activities, intending to align strategic and operative goals and follow the operation through both financial and non-financial indicators. BSC is widely present in the world due to its success in the implementation of a given organisation's pre-defined strategy and improved efficiency, so it provides good chances of success. It was created as a performance metric for companies, looking at overall performance from several perspectives. The performance of a given organisation, its goals and their metrics are studied from four perspectives (Kaplan & Norton 1996, p. 9):
1. "The financial perspective considers the traditional financial concepts, including profitability, income growth, expenditure control, *etc*.
2. The customer perspective pertains to how customers see the organisation, so the organisation should aim towards providing quality products and services, efficient delivery and customer satisfaction.
3. Internal processes perspective pertains to processes that should be focused on in order to improve organisation: productivity, turnover cycles, and expenses.
4. Learning and growth perspective pertains to all efforts that an organisation should make to maintain its value-creation ability, personnel skills, information systems quality, organisational balance effects, and the ability to reach the set goals."

Financial success is undoubtedly still considered the most important, but it is complemented by the perspective of the customers, internal processes

and learning and growth, which should allow the understanding of the basic factors leading to the achievement of financial success for a given company. Within each of the perspectives within the BSC model, it is necessary to identify key targets and appropriate indicators of the achievement of these targets, as well as to constitute mutual relationships between targets and indicators by identifying causal relationships. BSC creators do not insist on the construction of a four-perspective model, but rather allow the organisations to modify the basic model. Depending on the needs of the management, the model is adapted to a given organisation. Because of this, in practice, one can often find model implementation using three, four, or even five perspectives, depending on what a given company considers as key segments of its operation.Today, BSC is implemented in many companies, organisations and government institutions. The usefulness of BSC implementation has been recognised by many leading world organisations, both for profit (KPMG), public (Government services in Canada) and student organisations (AIESEC) (Jovanović & Pravdić, 2010, p. 37).

The value of the BSC model is reflected in its easy application with different forms of organisation, including the public sector and non-profit organisations (Pervan & Soče, 2010, p. 18). Depending on its size and purpose, an individual organisation can modify the basic BSC model according to its needs and aligns it with what is considered the key areas of the organisation's operations. BSC was originally intended for for-profit organisations, but it has been successfully modified as a system for public and non-profit organisations. It has also been widely applied in public sector organisations such as the Town of Charlotte (USA), USA Department of Defense, USA Department of Energy, Cockburn and Melville (Australia), Singapore district, U.S. National Reconnaissance Office (NRO) with its three programmes (Air Force, Central Intelligence Agency & Navy), and those are just some of the public sector examples of successful usage of BSC in the realisation of the organisations' mission (Wendy, 2001, p. 38). Thanks to the connection between success indicators and key business processes, the BSC model allows to identify and measure performance. In order to implement the BSC model, no expensive investments in technology and other resources are necessary, because the indicators calculation is based on data already available within the company itself, and it includes the people who already have the information needed. The financial perspective is a necessary precondition for an efficient educational system, but it is not sufficient, because, without additional knowledge, it can hardly be effective. It is exactly this shortcoming of the financial analysis that

gave birth to the prevalence of the BSC model, because it offers, together with the financial analysis, an analysis of non-financial indicators as well. The synthesis of both analyses is a good precondition for the achievement of efficient and successful operation, as well as the reaching of strategic goals (Bostan, 2012, pp. 6465-6470). According to Bostan, the specific mission of public sector organisations demands an appropriate modification of the BSC architecture. In the educational system, it is possible to identify two high goals the realisation of which leads towards the mission of educational institutions: the creation of a quality educational system, accompanied by continued financial viability.

The use of indicators of performance as a way of managing and improving performance in education is now so widespread across schools and universities that it is difficult to imagine educational life without them. Educational institutions operate in both the private sector and the public sector. The main objective is to ensure the continuity of business as determined in accordance with the basic aim scheduled (Yüksel & Coşkun, 2013, pp. 2450-2459). For managers of educational institutions in the public sector who aim to achieve the goals and objectives determined by the public educational institutions, non-financial factors such as satisfaction of the customer (student) and other stakeholders, and service quality are more important than the financial objectives. However, the financial aspect of business continuity is also important in the evaluation of the performance of public enterprises (Coskun & Bayyurt 2008, pp. 79-87). Performance measurement system in educational institutions can either be based on financial or non-financial performance. Financial statements analysis and standard cost and budget analysis are examples of financial performance measurement. Managers of the educational institutions can also implement non-financial approaches to performance measurement, such as measuring the service quality, productivity, efficiency and effectiveness, and customer (student) satisfaction (Yüksel & Coşkun, 2013, pp. 2450-2459).

In each perspective of the BSC for educational services there are related strategic objectives and certain number of performance measures to evaluate the achievement to these objectives. Performance targets for each performance measure are determined and achieved results are gathered at the end of each period. Depending on the characteristics of the institutions, the strategic objectives performance measures may differ (Yüksel & Coşkun, 2013, pp. 2450-2459).

Table 1. *Modification of the BSC model for the needs of the educational system*

Financial sustainability perspective	STRATEGIC OBJECTIVES	IMPROVE COST STRUCTURE	INCREASE ASSET UTILIZATION	EXPAND REVENUE OPPORTUNITIES
	PERFORMANCE MEASURES	*Saving in cost of service*	*Efficient use of facilities and resources*	*Level of student enrolment, Fund raising from stakeholders*
Internal process perspective	STRATEGIC OBJECTIVES	IMPROVE STUDENT PERFORMANCE	TO ACHIEVE IMPROVEMENT IN TEACHING EXCELLENCE	INCREASE STUDENT PARTICIPATION TO SOCIAL ACTIVITIES
	PERFORMANCE MEASURES	*Exam results of student*	*Budget spent on staff development*	*Number of social activities*
Learning and growth perspective	STRATEGIC OBJECTIVES	IMPROVE STAFF SATISFACTION	TEGHNOLOGY IMPLEMENTATION	KNOWLEDGE ENHANCEMENT
	PERFORMANCE MEASURES	*Satisfaction surveys*	*Number of courses using new technology*	*Number of seminars attended*

Source: Adapted from (Yüksel & Coşkun, 2013, pp. 2450-2459)

The BSC model modified for the educational system has three perspectives. Financial Sustainability Perspective, which stresses the importance of achieving operative efficiency, in order to optimise direct expenses, but also social expenses (the modification of the financial perspective). Internal Process Perspective, which stresses productivity and Learning and Growth Perspective, which can enter the BSC model as applied in the educational system in its original form. That is to say, for overall efficiency, it is of utmost importance that all participants acquire new knowledge and skills, and for the information system to provide the highest possible support for the system.

After every individual key-point, *i.e.* perspective, defines its targets and metrics, it is necessary to formulate the goal model, which means an alternative reporting model based on the performance balance model, in order

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to ascertain the value of information provided by said system in comparison with the standard model, and to ascertain achievements. Achievements can be measured in two ways: achievement in relation with the previous period, and achievements in relation to target achievements. Each target is joined by its individual indicator, and each indicator shows the realisation for the current year, as well as its target metric, which is defined as the wanted value. Target values are set in such a manner as to be an enticement to progress.

Every BSC suffers from certain limitations. The shortcomings of the balanced targets system include: newness, incompleteness, and scale (Hočevar, 2007, p. 60). Participants often express opposition towards change and new factors, due to poor vertical communication within the system itself, which means that the participants may not be informed on what is actually expected of them. However, both theory and practice have already seen the application of non-financial indicators as measure of performance, so institutions merely need to complete their existing models. Furthermore, insufficiency of perspectives is sometimes quoted as one of the model's flaws. Since this is a complex model, including the basic perspectives and the calculation of numerous indicators, it can also be difficult to assess the success in target achievement. Flaws of the BSC model are not mentioned as often as its advantages. However, overlong application time is stressed as the model's biggest flaw, so most institutions believe that the concept is too complex and difficult to understand, which in turn creates fear among the participants within the educational system (Vuković, 2016, p. 86).

4. Experiences in the implementation of the performance audit of the educational system in the European Union and in Bosnia and Herzegovina

As is well known, Europe does not have a unified school or education and care system. But what unifies the national educational system of developed countries are common goals and principles of their achievement, which guarantees equal education and care outcomes. In a word, developed countries are harmonising their educational policies, which may, in the long term, lead towards similar organisation of the education and care systems. That said, tradition and differences in the social context will continue to produce certain differences in system structures.

In the European Union (EU), the importance of performance audits in education has been recognised. In 2016, European Court of Auditors

published a special report on performance audit with the subject of EU education objectives: programmes aligned but shortcomings in performance measurement (European Court of Editors, 2016, p. 17). The audit included 37 operative European Social Fund (ESF)[1] programmes from the programme period 2007-2013, which represent around 28 billion euro, or 83% of the overall ESF educational budget. Furthermore, it included samples from the bodies of five member countries (Germany, France, Italy, Portugal, and Romania). Speaking of the 2014-2020 programme period, five partnership agreements and eight operative programmes have been revised, covering around 7 billion euro of ESF educational funds. The audit concluded that in the operative programmes in the 2007-2013 periods, educational goals as a whole were taken into account in an appropriate manner. However, some operative programmes showed lack of description for certain components of the intervention logic, and there were certain deficiencies regarding the monitoring tool framework. Furthermore, due to the lack of quantified goals and success indicators, it wasn't possible to systemically prove the success of the projects audited. In most of the operative programmes checked where there were changes in the funds allotted, clear explanations regarding the consequences of the changes in the funds allotted regarding their connected target values were missing. When it comes to the development of operative programmes for the period 2014-2020, it was determined that the educational goals of the EU have been taken into account in an appropriate manner, and that the description of the intervention logic was improved. However, the framework still shows certain shortcomings, which may affect the success monitoring and reporting on it at the level of operative programmes and projects. In addition to that, a clear connection between educational measures and their effect on employment is still missing.

When it comes to performance audit in the educational system in Bosnia and Herzegovina (BiH), in 2007, as a pilot-project, a performance audit was conducted with the subject of "Planning High Education in the Federation of Bosnia and Herzegovina", where the audit focused on the question whether the planning and supervision systems in high education sector were sufficient to maintain the real balance between supply and demand regarding university degree holders in the Federation of BiH. The audit included an assessment on how much the organs responsible had used their opportunities to influence planning, as well as an assessment of the quality of information available to appropriate administrative organs and students. The audit included institutions connected with the high education and employment sectors: the federal and

cantonal ministries of education, all public universities in the Federation of BiH, the Federal Employment Bureau and cantonal employment services. In addition, information was also obtained from the Parliament of the Federation of BiH and the Government of the Federation of BiH. The auditors concluded that the Government of the Federation of BiH, through the Federal Ministry of Education and Science, has the opportunity to influence high education through implementation of policies and execution of federal government laws, as part of their constitutional duties. Furthermore, the Government provides the Parliament of the Federation of BiH with relevant information. However, the Government of the Federation of BiH did not completely use its legal power. The Government ministries and appropriate institutions did not undertake sufficient initiatives with the goal of evaluation of the statistics systems, practices in the allotment of the federal budget resources, opinion regarding employment policies and assessment of the labour market in order to obtain and provide information on the changes at the labour market. Each canton individually conducts the planning of higher education and is independent in the creation of admission policies. The practice of cantons and universities mutually coordinating or harmonising the number of freshmen students does not exist. Information on the planning of higher education and labour market needs is not appropriate, reliable nor do they have sufficient quality (Audit Office for the Institutions of the Federation BiH, 2007, p. 20). Exchange of information among all the participants included in the audit is not at a satisfactory level. Unified information data bases are mostly absent, and those that do exist are not interconnected, which makes access to data usage more difficult.After the 2016 audit, a follow-up audit was conducted, showing that, of the total of seven recommendations given, none of the recommendations was completely realised by all the institutions that had received them. Of the total of 28 institutions that were to realise the recommendations given, only four institutions completely undertook activities on the realisation of the recommendations, and at the level of the Federation of BiH, a unified database for which all appropriate institutions from the cantonal level would be under obligation to regularly provide relevant data on admissions policies and needs of the labour market has not been constituted (Audit Office for the Institutions of the Federation BiH, 2007, p. 22)

Looking at the performance audits in the educational systems in the EU and in BiH, it can easily be seen that Supreme Audit Institutions have noticed the basic shortcomings of the educational systems observed, and provided recommendations for their improvement. However, at the example of BIH, it

becomes obvious how important it is that appropriate institutions follow the audit reports. Namely, the information that, over a period of 10 years, not a single recommendation of the performance audit in BIH has been implemented is disastrous. The audit is not a goal on its own; without implementation of the recommendations, the whole process makes no sense. Regular conduct of performance audits in different segments of the educational system would contribute to the increased efficiency of the system and a larger number of satisfied users, but, most importantly, it would flow over to the entire public sector and improved standard of living.

5. Concluding remarks

An efficient educational system is one of the most important preconditions in the achievement of general social and economic prosperity. This paper proposes the BSC model as measurement of the efficiency and effectiveness of the educational system. As the value of the BSC model is reflected exactly in its applicability to different organisational forms, including the public sector and non-profit organisations, the said model has found its application in the educational system as well. The BSC model can also be used by auditors as a method to measure the efficiency of the audited institutions within the educational system. Experiences in the conduct of performance audits within educational institutions have shown that auditing is of extreme importance when it comes to accentuating the shortcomings and problems within the system; however, in order to achieve maximum effects of the audit, cooperation between all participants and appropriate institutions is necessary. The advantage of the BSC model is in wide use.

In the future, it would be interesting to explore the possibility of applying this model in the performance audit and whether such methods and types of audits would facilitate and speed up the work of auditors. Furthermore, the education system of BiH is inefficient, a great study of the effectiveness of the same (for example, through performance audit) and the possible implementation of the BSC model would provide useful guidelines and results.

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Endnote

1 The goal of the European Social Fund (ESF) is to strengthen the economic and social cohesion within the EU, with improved employment options (mostly through education measures), spurring high levels of employment, and creation of more numerous and advantageous jobs.

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THE RELATIONSHIP BETWEEN THE ACCOUNTING PROFESSION AND THE TAX ADMINISTRATION: THE CASE OF THE FEDERATION OF BOSNIA AND HERZEGOVINA

ODNOS RAČUNOVODSTVENE PROFESIJE I POREZNE ADMINISTRACIJE: SLUČAJ FEDERACIJE BOSNE I HERCEGOVINE

Abstract

This paper aims to show the importance and influence of good cooperation between the accounting profession and the tax administration in the tax compliance process. Raising taxpayers' awareness about lawful calculation and payment of public revenues is a key issue for every country and the one in which the accounting profession plays a significant part in addition to the tax authority. Any business process is hardly imaginable today without being adequately connected with the accounting profession and this profession is now more than ever before in the service of public interest that is primarily based on the need for lawful and fair reporting on business entities' business operations. The accounting profession should play an important part in fighting all forms of tax fraud, evasion and all other forms of illegal activity. This is to be achieved also through preventive action where accountants use advice and instruction to discourage fraud and avoidance of payment of public revenues. The accounting profession should be based on the principles of legality, professionalism and ethics, as any other interpretation or action would distance the accounting profession from legality. The tax administration needs sufficient accounting and financial evidence to be able to draw reasonable conclusions on which to base its opinion whether or not tax liabilities have been calculated, paid and reported in accordance with regulations in force. The cooperation between the tax administration, taxpayers and the accounting profession should represent the establishment of partner relations and striving towards a common goal – lawful collection of public revenues. This cooperation should, as a priority, be based on proper understanding, definition and exercise of mutual rights, obligations and the

development of partner relations, and the outcome of such relations is measurable and will be reflected in the results of public revenues collection.

Keywords: accounting profession, taxpayers, cooperation, Federation of BiH Tax Administration

JEL: M40, M41, H20

Sažetak

Cilj ovog rada je da ukaže na značaj i uticaj dobre saradnje računovodstvene profesije i porezne uprave u postupku izvršavanja poreznih obaveza. Razvijanje svijesti poreznih obveznika o zakonitom obračunu i plaćanju javnih prihoda je ključno pitanje za svaku državu, a u tome pored poreznog organa poseban značaj ima i računovodstvena profesija. Danas je gotovo nezamisliv bilo koji poslovni proces bez adekvatne povezanosti sa računovodstvenom profesijom i ona je u ovom vremenu više nego ikada do sada u službi javnog interesa koji se primarno temelji na potrebi zakonitog i fer izvještavanja o poslovanju poslovnih subjekata. Računovodstvena profesija treba da ima značajnu ulogu u suzbijanju svih vrsta poreznih prevara, utaja i svih ostalih oblika nezakonitosti. To treba da se postiže i kroz preventivno djelovanje, tj. da računovođe svojim savjetima i uputama odvraćaju od prevara i izbjegavanja plaćanja javnih prihoda. Računovodstvena profesija treba biti utemeljena na principima zakonitosti, profesionalizma i etičnosti, jer svako drugačije shvatanje i postupanje vodi ka udaljavanju računovodstvene profesije od zakonitosti. Poreznoj upravi su neophodni dostatni računovodstveno-finansijski dokazi da bi mogla izvući razumne zaključke na kojima će zasnivati svoje mišljenje o tome da li su porezne obaveze obračunate plaćene i prijavljene u skladu sa važećim propisima. Saradnja između porezne uprave, poreznih obveznika i računovodstvene profesije treba da predstavlja uspostavljanje partnerskih odnosa i težnju ka ostvarivanju zajedničkog cilja – zakonite naplate javnih prihoda. Ta saradnja se prioritetno treba zasnivati na pravilnom razumijevanju, postavljanju i izvršavanju međusobnih prava, obaveza i izgradnji partnerskih odnosa, a izlazni rezultati ovih odnosa su mjerljivi i iskazat će se kroz rezultate naplate javnih prihoda.

Ključne riječi: računovodstvena profesija, porezni obveznici, saradnja, Porezna uprava Federacije BiH

JEL: M40, M41, H20

1. Introduction

Tax activities, by their structure, are very complex and consist of a larger number of participants. The main participants in tax processes and activities are: lawmakers, taxpayers, tax authorities - accountants, auditors, and other entities. In order to pursue and achieve the social goal, optimal and legal collection of public revenues, the concept of cooperation and synergy should be a joint activity of all participants in the tax process. An important catalyst for participants in the tax process is the accounting information. Accounting with its activities in each company should enable a realistic presentation of the real financial position, business results and cash flows according to the real values of assets, liabilities, and capital, on the basis of which different users of financial reports could use them in making economic decisions. The responsibility of the accountant is not solely to meet the needs of an individual employer but to act in the public interest and to act in accordance with applicable regulations and the Code of Ethics for professional accountants. Co-operation between the tax administration and the accounting profession and mutual expectations should be based on their competencies and tasks that are regulated by applicable regulations, developing mutual cooperation, transparent and partnership relations based on positive regulations. The best way to cooperate is to do all your work and activities lawfully, timely, and professionally.

2. Accounting profession and ethics in the function of developing tax awareness, with a focus on the Federation of Bosnia and Herzegovina

Accounting profession throughout the world takes a central role in society. Without the existence of this profession, it is impossible for any economic community to function. Accounting is used in all business segments and without it successful business is inconceivable. The roots of this profession appear in the 19th century. There are a number of accounting definitions, and one of them is that accounting is the systematic collection, development, and analysis of information about the financial condition of an organization. According to Puškarević (2015), the most commonly encountered definition of accounting in textbooks, but also in professional terms, is the one given by the American Institute of Authorized Public Accountants, which defines accounting as "*the art of writing, classifying, and summarizing in a significant way and in money terms, jobs and events that are, at least, of a financial nature, and interpreting their results*". This institution later also

provides an advanced definition of accounting. According to this definition, accounting is "*the process of identifying, measuring, and communicating economic information to enable information-based judgment and decision-making by user information*" (American Accounting Association, 1966).

Like accounting, the accounting profession itself is exposed to constant changes due to the globalization and development of society, so its goal is to constantly modernize and change. Accounting is a noble profession that requires a high level of professionalism (Akenbor & Tenison, 2014). It is one of the fundamental professions in every society and it is very important that it is educated and organized in a quality way (Žager & Dečman, 2015, p. 269). This profession is subject to continuous improvement from specialized areas and is present in the public and private sectors (Dražić Lutilsky *et al.*, 2010). It makes it different from other professions of the facts of accepting responsibility and its actions in the public interest. The objective of the accounting profession is fulfilled if four conditions are met: the validity of information, the quality of the services provided, professionalism, and trust. Vidaković (2002) states that accounting and auditing is the product of an economic and overall social system in which the key role of the state in regulating this field is crucial. Accounting profession is extremely important because all financial information is provided to information users by the accounting process, and they are crucial for business decisions of taxpayers, investors, creditors, but also for tax institutions. Accurate accounting information is the result of quality financial information and reports, and the reliability of their quality is of great importance to tax administrations and to the quality management of a tax policy of a country. The accounting profession should be ethical in the function of public interest, tax process, taxpayers and tax administrations. Moral education, knowledge of ethics, personal and business morals that must guide them in their actions in dealing with others, the environment and society as a whole, makes up a professional accountant not only an educated expert, but of a complete human person, who truly has the meaning and significance of the notion of personality (Janković & Vlašić, 2010, p. 85). This profession together with tax administrations should establish the synergies that are necessary for the efficient and effective collection of public revenues that will provide benefits to the community and society as a whole. Only professional and moral employees of the accounting profession, tax administrations and taxpayers are the foundation and guarantee of optimum collection, that is, the improvement and stability of public revenue collection, which is a condition of the progress of modern society.

In every society and community, the development of taxpayers' awareness of legal accounting and the payment of public revenues is an extremely important issue. In this particular importance is also the accounting profession, which through its ethical behavior should positively influence the behavior and awareness of taxpayers and society in general. The accounting profession belongs to a very important ethical task in the interactive relations between taxpayers and the tax administration. It is important for the establishment and development of cooperation of all participants in the tax system. Today, almost any business process is unthinkable without an adequate connection with the accounting profession, and today it is more than ever in the service of public interest. Its public interest is primarily based on the need for legal and fair reporting on the business of businesses. Accountants today are professionals who require a high level of professionalism and ethics based on knowledge, competencies and experience. Accounting ethics in its definition includes a set of generally accepted moral norms based on ethical values that are necessary to apply when compiling and presenting financial information related to an institution and an enterprise. The basic principles of ethics of professional accountants and auditors are: objectivity, integrity, professional competence, trustworthiness and professional behavior (Malinić, 2011).

The accounting profession is now organized through various associations and associations. Around the world, this is the International Federation of Accountants (IFAC), the European Federation of Accountants (FEE), the European Association of Accountants (EAA), the American Institute of Public Accountants (AICPA), the Financial Accounting Standards Board (US GAAP). In Bosnia and Herzegovina, these are: the Accounting and Auditing Commission of BiH, the Federation of Accountants, Auditors and Financial Workers of the Federation of Bosnia and Herzegovina (SRRiF-FBiH), the Association of Accountants and Auditors of the Federation of BiH (URR FBiH), Association of accountants, auditors, tax advisors and financial employees of BiH (JAFIS), Association of Accountants, Auditors and Financial Workers of RS (SRR-RS).

The professional behavior of an accountant is regulated by the code of ethics for professional accountants. The IFAC has issued an international code with the idea that it will be the basis for drafting national codes with detailed rules, guidelines and standards of conduct. Today, the *"Handbook of the Code of Ethics for Professional Accountants"* is in force (2015 edition). Certain changes have taken place in this release, which entered into force on April 15,

2016, except for the changes in section 290 that came into force for audits and financial statements for periods beginning on or after the 15th of April 2016. The code of ethics for professional accountants is designed to apply to all professional accountants, regardless of whether they are in the public domain, industry, commercial, public sector or education. According to this Code, a professional accountant is anyone who performs audits, accounting, taxes, and similar consultations. In addition to IFAC, the second most recognized organization as the creator of ethical codes for professional accountants is AICPA. Through its membership of the IFAC members, through its membership, the IFAC mission promotes the public interest through the strengthening of the global accounting profession and the contribution to the development of strong international economies by establishing and promoting adherence to high quality professional standards, supporting international harmonization of such standards and extending issues that are in the public interest where professional expertise is most relevant. Today, the IFAC consists of 175 members of the alliance in more than 130 countries and jurisdictions, representing nearly 3 million accountants in public practice, education, civil service, industry, and trade.

When it comes to BiH, it is important to emphasize that complex socio-economic relations, post-war situation in society and political relations within BiH society are of great importance to the status and quality of the accounting profession. Due to the complexity of the tax system and the state of BiH, this section will focus on only one part, which is the Federation of BiH, with a special emphasis on the Tax Administration of the Federation of BiH, which is responsible for the application of tax regulations at the Federation entity as part of the state of BiH. SRRiF-FBiH is a non-governmental, non-profit, professional association of certified accounting technicians, certified accountants, certified auditors as well as other accounting, accounting, auditing, financial workers and other related professions in the Federation of BiH. The role of the SRRiF-FBiH is defined in its Statute (Union of Accountants, Auditors and Financial Workers of the Federation of BiH, 2017), according to which it operates in the function of:
- Development of accounting, auditing, financial profession and other related professions;
- Promoting and maintaining the highest standards of professional competence;
- The provision of quality services for professional training and training of its members in terms of necessary qualifications, vocational training,

certification and licensing, and performing other activities and activities from the scope of the professional accounting authority.

The SRRiF-FBiH Statute prescribed the basic tasks, which are:
- To work on the translation, publication and raising awareness of the importance of implementing the standards as well as all accompanying instructions, explanations and guidelines of the International Federation of Accountants and the International Accounting Standards Board and other competent bodies;
- To provide professional training, testing and certification of its members, as well as licensing, in accordance with the standards and guidelines of the competent international organizations and bodies in this field,
- To act in the direction of ensuring the continuous professional development of professional accountants, and
- To carry out other activities and responsibilities of a professional accounting officer.

In accordance with the *"Handbook of the Code of Ethics for Professional Accountants"* (IFAC, 2015), which is in force and applies in the territory of the Federation of BiH, the accountant should act in accordance with the following basic principles:
a) *Honesty* − be honest and honest in all professional and business relationships. The principle of honesty imposes an obligation on accountants to be honest in all professional and business relationships. A professional accountant will not knowingly be associated with reports, submissions, communications, or other information where he/she believes that information: contains a material misstatement or misleading allegation, contains carelessly worded statements or information, or omit or distort the information that should be included where such a discharge or distortion led to the creation of a misconception.
b) *Objectivity* − do not allow bias, conflict of interest, or inappropriate influence of others over his professional or business judgment. The principle of objectivity imposes an obligation on all professional accountants not to compromise their professional or business estimates due to bias, conflict of interest or undue influence of others. A professional accountant will not perform a professional activity or service if the circumstance or relationship creates prejudice or improperly affects the professional judgment of an accountant in connection with that service.
c) *Professional competence and due attention* − to maintain professional skills and knowledge at the level necessary to ensure that a client

or employer will receive a competent professional service based on contemporary achievements in practice, legislation and techniques, and act diligently and in accordance with professional and professional standards that can be apply.

d) *Confidentiality* − to respect the confidentiality of information acquired on the basis of professional and business relations, and therefore not to disclose any such information to third parties without special and appropriate approval, unless it has no legal or professional right or obligation to publish, nor use information for the personal benefit of a professional accountants or third parties. The principle of confidentiality imposes an obligation on all accountants to refrain from: publishing confidential information obtained through professional and business relationships outside the auditing company or employer's organization without proper and specific approval, or if there is no legal or professional right or duty to publish and use confidential information obtained on the basis of professional and business relationships for their own benefit or the benefit of third parties.

e) *Professional behavior* − act in accordance with relevant laws and regulations, and avoid any action that discredits the profession. The principle of professional behavior imposes an obligation on all professional accountants to comply with relevant laws and by-laws, and avoid any action that a professional accountant knows or should know to impair the reputation of the profession.

Although the principles outlined above are intended for accountants, they represent universal and general values that in their work can and should be consumed to the fullest extent by other participants in the tax system, especially employees in tax administrations.

3. Tax Administration of the Federation of Bosnia and Herzegovina − role and tasks

The Tax Administration of the Federation of BiH is a federal administration within the Federal Ministry of Finance, whose basic task is the application and supervision of the application of tax regulations and regulations on collection of contributions. The Tax Administration is one of four tax administrations in BiH. In addition to the Tax Administration of the Federation of BiH in BiH there are also the Indirect Taxation Authority of BiH, the Tax Administration of the Republic of Srpska, and the Tax Administration of Brčko District. The result of such a regulated tax policy is derived from the BiH Constitution.

The competence of the Tax Administration is regulated by the Law on the Tax Administration of the Federation of BiH. The strategic plan of the Tax Administration defines its mission, vision, and core values. The Tax Administration's mission is collecting - collection of public revenues by the correct application of tax laws, with better cooperation with taxpayers and as little as possible expenses, in order to increase the social well-being. Within the framework of the vision, the Tax Administration aims to be a modernly equipped tax authority that is highly professional, efficient, economical and dynamic, with satisfied, educated, capable and ambitious employees, respected by taxpayers - citizens, entrepreneurs, associations and non-governmental organizations, and higher executive and legislative bodies. The values of the Tax Administration are the principles on which current and future activities are based in order to fulfill the mission and realize the vision.

Principles are continuously implemented by all employees. The basic values of the Tax Administration are (Tax Administration of the Federation of BiH, 2014) are as follow:
- Consistent and mutual application of legal regulations by taxpayers and the Tax Administration of the Federation of BiH;
- Mutual respect and trust between the Tax Administration of the Federation of BiH and taxpayers;
- Efficiency and effectiveness in work and collection of public revenues;
- Professionalism, impartiality and respect for the ethical code of the employees in order to protect the interests of the institution and common values.

According to the currently valid work strategy, the basic objectives of this tax administration are to be a fair, rational and efficient administration, which among other things includes:
- Full application of the applicable laws and regulations in the process of accurate determination and collection of tax liabilities;
- The tendency towards the full and timely execution of all obligations arising in the way of collection of public revenues for which it is competent;
- Respecting all rights of taxpayers with equal treatment and treatment towards everyone, *i.e.* that there are no privileged taxpayers;
- Continuous tendency towards improving the level of quality of services and services to taxpayers, which will enable them to operate more easily and as easily and cheaply as possible to settle their tax liabilities;

- Establishing clear and transparent communication with taxpayers, all governmental and non-governmental institutions, the media and the general public;
- Development of material, personnel and financial capacities and conditions for timely execution of all tasks for which it was founded;
- Establishment and preservation of a system in which all employees have a status exclusively according to knowledge, work, work results, moral code of conduct, that there are no privileged;
- Strengthening the reputation and reputation through the development of expertise and professionalism and functioning in accordance with the law.

The Tax Administration is responsible for carrying out activities in the field of all types of federal, cantonal, city, and municipal taxes and contributions, special fees, membership fees from tourist communities, membership fees of crafts chambers, and fines for tax offenses. The scope of work of the Tax Administration of the Federation of BiH is regulated by the Law on the Tax Administration of the Federation of BiH ("Official Gazette of the Federation of BiH", 2002), as follow:
- Registration and identification of taxpayers;
- Management of tax records and tax accounting;
- Receipt and control of tax returns, recording of tax liabilities in tax accounting, collection and return of tax liabilities;
- Determining the timeliness, legality and regularity of submitted tax returns;
- Collection of tax debt by regular and compulsory means;
- Conducting inspection supervision;
- Management of a unique system of registration, control and collection of contributions, fiscalization system and gaming system;
- Developing services to taxpayers, informing and educating taxpayers;
- Cooperation with tax authorities and other governmental institutions in the Federation and Bosnia and Herzegovina as well as cooperation with international institutions and organizations;
- Other tasks in accordance with the regulations.

In the course of carrying out their tasks, the Tax Administration and its employees, within the scope of their powers, have the obligation and the right to strictly adhere to all Federation laws. In order to carry out this task, this body seeks to continuously improve its knowledge of tax obligations, to constantly strive and provide the prerequisites for the constant improvement

and equalization of the quality of services throughout the Tax Administration, thus enabling subscribers to have adequate support and services that will help them understand and predict their tax obligations and reduce errors (Isović, 2017a). One of the basic objectives of the Tax Administration is the education and training of employees who will work in this administration, because only educated, capable and moral employees can adequately respond to all the challenges. In spite of the large financial and material constraints and the lack of tax officials, the Tax Administration makes great efforts to efficiently and rationally fulfill its obligations and advocates a just, rational and efficient administration to build a just, clear and stable tax system that will respond to the needs of development earth.

3.1. Cooperation of the Tax Administration of the Federation of Bosnia and Herzegovina and taxpayers

Cooperation between the Tax Administration and taxpayers represents the establishment of partnership relations in the pursuit of a common goal. Cooperation should be based on the correct understanding, setting-up and execution of mutual rights, obligations and the building of partnership relations. Tax administration and taxpayers in the framework of joint work, through general action on efficient and rational implementation of tax legislation, must understand, understand and accept mutual rights and obligations. Within the framework of mutual rights and obligations, based on the law, for easier communication, it is important to understand what is expected, in order to have systematic functioning of cooperation in mutual relations, mutual satisfaction and fulfillment of the common goal - legal collection of public revenues. In order for the Tax Administration to fulfill its obligations efficiently, rationally and impartially, it is necessary for the Tax Administration and taxpayers to know and practice all mutual rights and obligations and to establish and develop a relationship of mutual trust and appreciation. These relationships should be transparent, open, professional and as such will be effective and enable taxpayers to more easily and easily fulfill their tax obligations, and to the Tax Administration to be more rational and efficient in collecting public revenues. The administration should be assisted in all ways by the taxpayers who show that they want to fulfill their tax obligations, and show the determination to take all measures against those who want to avoid their obligations and direct them to lawful treatment.

Establishing communication between taxpayers and the Tax Administration should be based on mutual understanding in order to achieve a common goal − legal payment of public revenues. The rights of taxpayers are determined by the Law on the Tax Administration of the Federation of BiH, the Code of Ethics of Civil Servants in the Federation of BiH, and other applicable regulations from the scope of work of this institution. According to the above, taxpayers can and should expect the Tax Administration to:

- Implement laws in a consistent and consistent manner, while respecting the principles of non-discrimination on any ground and without any undue influence;
- Charge only the amount of taxes, that is, public revenue that the taxpayers are obliged to pay in Accordance with the law (neither the mark nor the mark less);
- Treat with due care, to be fair to them, assuming that taxpayers are telling the truth, unless there is a reliable reason to be considered contrary;
- In accordance with the law, provide complete and accurate information that will enable them to realize and realize their tax obligations and avoid any possible errors in the calculation and payment of taxes;
- Enable the taxpayers to clarify all the facts relevant to the calculation and payment of taxes with its employees, during the inspection and determination of obligations;
- Respect the right of taxpayers to submit: complaints, appeals and lawsuits on decisions on established obligations and that their acts and evidence will be taken into account and be carefully considered and explained and will correct any errors in their acts.
- Keep data and information representing a tax secret, that without the consent of the obliged person, they will not give this information to other persons, except in cases when it is prescribed by law;
- Recognize the right to refund and make a decision on more or wrongly paid tax;
- In case of delay in payment, calculate and charge interest in accordance with the law;
- Enable taxpayers to obtain an adequate service, contact the tax officers in connection with their cases and resolve any request for assistance in a timely and complete manner;
- Take all measures to prevent the avoidance of payment of taxes, contributions and any other public revenue and apply all the statutory measures and sanctions;
- Continuously improve their knowledge of tax liabilities in order to be

able to provide appropriate support and provide taxpayers with services to help them understand and anticipate their tax obligations and reduce errors.

From the same legal regulations that determine the rights of taxpayers, the expectations and rights of the Tax Administration are defined. As taxpayers have their expectations, the Tax Administration expects taxpayers to:
- Comply with tax laws and fulfill their tax obligations within prescribed deadlines;
- Truthfully and accurately present data in tax returns and submit tax returns in accordance with the prescribed deadlines;
- It will not knowingly and deliberately avoid taxation regulations and that it will promptly seek advice on the obligation and manner of execution of tax obligations;
- Keep the books and records in a manner determined by the applicable regulations and ensure the keeping and keeping of books, records and documentation in the deadlines prescribed by applicable laws, and at least for a period of five years from the date of maturity of the tax return for the tax relating to those books and records;
- Understand and accept the right and obligation of the Tax Administration to conduct tax supervision, and that it will not endeavor to influence inappropriately the control, accounting and payment of public revenues and other activities;
- For the purpose of rapid and efficient implementation of inspection supervision and tax supervision procedures to cooperate, to be honest in communication and, at the request of its authorized employees, to provide: business books, business and other documentation, accurate and complete information relevant to the determination of tax liabilities;
- Respect the impartiality and independence of this administration, to be open, honest and cooperative in all matters that are important for determining their tax obligations and achieving the objectives and role of the Tax Administration;
- Inform the Tax Administration in due time and within the prescribed deadlines when there are changes that are significant for their tax status and the Tax Administration;
- Read the information, communications and messages sent to them by the Administration, whether it is sent to the taxpayers personally or through general communications, through the Administration website or some long form of communication.

In its work, the Tax Administration continuously records upward results in the collection of direct public revenues. Thus, in 2016, taxpayers paid about BAM 4.5 billion of public revenues, which in comparison with 2015 represented a higher payment of BAM 350 million or expressed in percentages, more by 8.51%. Positive trend of collection of revenues was realized in the first ten months of 2017. Namely, in the period January-October 2017, public revenues for which the Tax Administration are responsible in the amount of BAM 3,977,813,673, and in comparison with the same period last year, they increased by 9.61%, or by BAM 348,769,099. These results are the result of systematic work, development and application of the principle of professionalism and legality in the daily work of employees of this administration, raising the discipline and overall awareness of taxpayers and citizens about their obligation to report and pay taxes. In addition to the positive results in the collection of public revenues, a positive trend has been noted in the past period in other segments of the Tax Administration's work, which represents a progress towards creating a modern, efficient and economical system of tax administration, improving the efficiency and effectiveness of all business processes, raising the quality of services and reducing costs fulfillment of tax obligations. The Tax Administration is strongly oriented to be the best service to taxpayers and to build transparent relationships based on applicable laws. On this path, it is oriented towards seeking new and better solutions leading to progress and stability. Ethical principles and behavior of its employees are fundamental principles and behavioral patterns.

The Tax Administration has an open call for taxpayers to be its partner, since the Tax Administration sincerely wants to be a partner to all taxpayers who legally operate, and the imposition of fines is solely the means by which the full implementation of tax laws is achieved. The Tax Administration uses every opportunity to publicly thank all taxpayers who properly carry out their tax obligations and invite all taxpayers to operate legally, to use their money to improve their business, investment, development, to pay salaries to employees rather than making hard-earned money They spend on paying penalties and interest. The Tax Administration calls upon taxpayers to execute their obligations timely, to voluntarily declare and pay them, to report to each employee, or to operate in accordance with tax and other applicable regulations, as this is the best and safest way of doing business. The principles of legality,

professionalism, ethics, trust, respect and understanding between the Tax Administration and taxpayers are the basis for fulfilling mutual expectations and cooperation, and the outcomes of these principles are measurable and will represent results in the collection of public revenues (Isović, 2017b). In honoring these principles, an accounting profession plays an important role that together with the tax administration will encourage taxpayers to align their business with the law.

4. Accounting profession and Tax Administration of the Federation of BiH − situation and perspectives

Accountants are, as a rule, taxpayers, so everything that has been said above for relations between taxpayers and tax administration is mainly related to accountants. Accounting profession is needed for all participants in the exchange of accounting and business information that are established on the principles of professionalism and legality. The role of the accounting profession, based on the principles of professionalism and ethics, is important for the efficient and effective functioning of the tax system.

Tax procedures should be based on precise and verifiable transactions. The Law on Accounting and Auditing in the FBiH ("Official Gazette of the Federation of BiH", 2009) stipulates that the contents of the accounting document must clearly and credibly show the type and extent of changes that have occurred, the nature of business changes, technical characteristics with the possibility of timely supervision, and that a credible document is considered accounting a document on the basis of which a third party who has not participated in a business event can undoubtedly and without any doubt determine the nature and extent of the business event. The accounting profession should and must be based on the principles of legality, professionalism and ethics, since any other understanding and treatment would mean the removal of the accounting profession from the legality and reality. The Tax Administration needs sufficient relevant and competent accounting and financial evidence to obtain reasonable conclusions on which to base its opinion on whether or not tax returns have been prepared in accordance with the law and whether taxes are calculated and paid in the prescribed amounts. In this process it is necessary that the tax administration develops the financial and accounting knowledge of all its employees working on tax returns, calculation and cutting of tax liabilities, inspection supervision, *etc*.

Taxation relies on accounting rules that do not match the tax, so it is necessary to provide through the accounting system the information necessary for easy calculation and control of public revenues. Accounting is based on accounting regulations; however, in contemporary society, the need to align financial accounting with the principles of comprehensibility, clarity, simplicity and convenience is becoming more and more important, and this profession should ensure the keeping of records of relevance to tax matters, which should be true, accurate and correct and as such are an important source of information for the Tax Administration. Therefore, continuous tax consultations are also needed to better understand and implement tax accounting. The tax administration of the Federation of BiH in the coming period intends to intensify its activities in the segment of tax consulting and education of its employees and taxpayers. It currently does so in accordance with its available capacities and with the lack of funding through internal seminars, websites and various media outlets. The business policy of the Tax Administration is to publish every information on its work on its website and through the media, which in the past period was a significant support to this tax authority. Through various instructions and guides that are publicly available to taxpayers and accounting profession, the Tax Administration seeks to improve its services and be the best service for both, and in this way, in this way, with better cooperation, achieve good results in collection, strengthening of tax awareness and discipline, but also to improve its reputation and position in society. These are various instructions on how to proceed, instructions on completing tax returns, instructions on deadlines for filing tax returns, electronic submission of tax returns, electronic filing of applications, guides for access to information, check of betting sheets, check of paid contributions, checking of paid contributions reporting fiscal devices, *etc*. However, in the next period, within the framework of its communication strategy, the Tax Administration intends to intensify its public tax consultations with the support of the authorities and the necessary additional financial resources, in which the role of the accounting profession will be very important.

Accounting and taxation education is very important for the detection and prevention of tax fraud for the accounting profession and the Tax Administration, so accounting and taxpayers must be familiar with both accounting and tax regulations in order to be able to operate within the limits and in the manner prescribed by law. A significant problem for taxpayers and accountants is that there is a fairly complicated, complicated legal tax framework, the unrestricted regulation and their frequent changes that lead to the uncertainty of the

entire social system, and are actively working on taxpayers, taxpayers and accountants, which increases costs adaptation and education. Because of this, the accounting profession and the Tax Administration need to exhibit significant synergy and jointly strive to make the laws more rational, more comprehensive, not to produce ambiguity and ambiguity, to minimize the need for additional interpretations by their quality, and to ensure long-term sustainability and sustainability of tax solutions in order to the risks of non-payment, evasion and fraud, or uncertainties brought about by any change in tax policy, have been reduced. The stability or long-term nature of tax and accounting solutions will inevitably lead to raising the level of knowledge and professionalism in these areas, and certainly to greater legal certainty of taxpayers.

In its work on the territory of the Federation of BiH, the tax administration continuously discovers additional tax liabilities, a large number of undeclared workers working while not registered in unregistered business entities, taxpayers who do not record turnover, and other illegal activities. For example, only in 2016, the Tax Administration established more than BAM 400 million additional liabilities and submitted 39 official reports to the competent prosecutor's offices because of the existence of grounds for suspicion that tax crimes were committed, and in the first three quarters of 2017, additional tax liabilities were imposed from over BAM 143 million. On the other hand, in only 45 fast one day actions conducted in the last period, this administration found: 4,066 undeclared workers, 3,481 non-invoicing entities, 1,576 subjects who worked without a license, 1,051 entities without an installed fiscal device. Due to these irregularities, it sealed 2,502 facilities and issued 6,872 misdemeanor orders with fines in the amount of BAM 16,805,900.00. These data point to the fact that the accounting profession is not comprehensive, that there is no adequate information exchange with the Tax Administration, and that there is a significant area for establishing better cooperation. These data logically produce the question: "*What is the 'role and responsibility' of the accounting profession in these forms of law violations and does this profession reduce and behave in a preventive manner?"* It is certain that accountants who maintain business books to taxpayers, who violate the penalties imposed on them, have knowledge and responsibility in this regard. The accounting profession should play a significant role in combating fraud and manipulation in general, and therefore tax scams. This is best achieved through preventive action, *i.e.* that accountants discourage their advice and instructions from fraud and avoid paying public revenues. The accounting profession, even after suspecting the possibility of fraud or after

fraud detection, may act in a manner that informs the Tax Administration of such information. However, practically this is rarely happening. Accountants, in many cases, are silent and silently tolerate unlawful business in a kind of way. Such behavior should be changed in the coming period, including the prescription of penal policy for accountants who do not report this behavior or do so. The current penal policy does not support this. This is confirmed by the fact that when it comes to the work of the Tax Administration of the FBiH, there is no single case in which the accountant reported the unlawful treatment of a taxpayer. Namely, via e-mail for gray economy applications, and open telephone lines from the 10th of 2015 to the end of October 2017, about 2,670 applications were received. The most applications were from citizens, but they were also from disenfranchised workers or taxpayers who report other taxpayers. After processing, all applications were analyzed by intelligence-investigative inspectors and delivered to the competent cantonal offices for treatment and control. By analyzing submitted applications, it was found that none of the applications came from an accountant. It is very clear that the accounting profession has a direct insight into the business of the subject and is aware of the irregularities, since no accountant who keeps a business account for one taxpayer cannot not notice that the taxpayer did not correctly calculate and pay the tax liabilities that are required by law. Given the importance of performing accounting and auditing tasks, this profession may and should have a significant role in preventing illegal activities of taxpayers and responsible persons. Therefore, the Tax Administration addressed the accountants and auditors on a number of occasions with a public call. The Management Board has publicly invited certified accountants, authorized and internal auditors to not participate in the work for which they are authorized, or provide advice to taxpayers and responsible persons in the conduct of illegal activities in the business, and to report to the Tax Administration those who do so. Calls always included a note that the Tax Administration will pay special attention in the following period to accountants and auditors whose clients appear as actors for avoiding and not paying public revenues, and that some irregularities made by the BH Federation Criminal Code qualify as criminal offenses in the area of taxation which prescribe penalties of imprisonment and fines. The position of the Tax Administration of the FBiH is that the accounting profession must serve the public interest and act in accordance with the applicable laws and regulations, and to refrain from any behavior that can harm the public interest and be discredited for this profession. Acting in the public interest and in accordance with the rules of the profession, accountants need to protect themselves and the profession

they perform, because the principles of professionalism and legality are the foundation for meeting mutual expectations and good cooperation.

5. Conclusion

The cooperation of the tax authority, accounting profession and taxpayers and expectations as a result of mutual cooperation should be based on the fact that each of these participants acts in accordance with applicable regulations, standards and ethical principles, while continuously maintaining professional competence. Maintaining the professional competence of taxpayers and accountants should be based on continuous monitoring and the adoption of relevant professional, professional and business achievements. Professional behavior should be built in accordance with relevant laws and avoiding any activity that discredits the profession. Accounting and tax regulations are very important for the accounting profession, the Tax Administration of the Federation of BiH and taxpayers, so accounting and taxpayers must be familiar with the accounting and tax regulations in order to be able to operate within the framework and in the manner prescribed by law. Only professional and moral employees of the accounting profession, tax administration and taxpayers are the foundation and guarantee of good cooperation. Everyone needs to act diligently, professionally, legally, ethically, to understand and understand each other's rights and obligations, and build mutual respect and trust.

Cooperation and expectations between the Tax Administration of the Federation of BiH, the accounting profession and the taxpayer should be a continuous process based on joint work. Cooperation should be based on the correct mutual understanding, setting-up and implementation of mutual rights, obligations and building partnership relations, so that it can function systematically. It is important that the Tax Administration of the Federation of BiH in its further strategic commitments continues to incorporate the concept of the importance of the synergy of accounting profession and your administration. Both must necessarily work together to adopt laws that will be understandable, comprehensive, long-term sustainable, to respect the economic power of the taxpayer and the needs of the development of the state.

In accordance with its mission and vision, the Tax Administration will continue to improve its knowledge of tax liabilities in order to be able to provide appropriate support and provide taxpayers with services to help them

understand, calculate, pay and plan their tax liabilities and reduce possible errors. This body is committed to providing support to taxpayers in its entire means that show their intention and wish to fulfill all their tax obligations, and on the other hand is determined to take all measures against those who want to avoid their obligations and direct them to the legitimate treatment. The principles of legality, professionalism, ethics, trust, respect, and understanding of taxpayers, accounting profession and tax administration are the foundation for the fulfillment of mutual rights, expectations and cooperation, and the outcomes of these relationships are measurable and will be reflected through satisfactory results of public revenue collection, which will all positively affect the development of the economy of the social welfare of a country.

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CONSULTANCY SERVICES MARKET FOR MICRO, SMALL AND MEDIUM-SIZED ENTERPRISES IN CROATIA[1]

TRŽIŠTE KONZULTANTSKIH USLUGA ZA MIKRO, MALA I SREDNJA PODUZEĆA U HRVATSKOJ

Abstract

Business advisors and their impact on the performance of micro, small and medium-sized companies (MSMEs) have been in the focus of many researchers for a long time. MSMEs are reporting increasing interest in professional business advice, but only a small share of MSME owners is using consultancy services.

This paper analyzes the consultancy market sector for MSMEs in Croatia, with a special focus on differences in the perspectives - gaps and overlaps of the supply (consultancy companies) and the demand side (MSME owners) of the market. The main objectives of the study are to identify and analyze determinants that influence consultancy market for MSMEs in Croatia, through opinions and views of the owners of MSMEs, from one side, and consultants as service providers, on the other side (mirroring perspective).

The empirical evidence in this paper is provided through secondary research and primary research – a survey conducted among 303 MSME owners and 60 providers of consultancy services for MSMEs. The main findings of this study enable segmentation of the users of consultancy services for MSMEs and identification of market niche for MSME consultants.

Based on the research results, recommendations for better understanding of MSME owners as clients of consultancy services are created, especially those related to improving marketing and service development strategies. The results of this study and recommendations can be used by a wide network of advisory service providers for MSMEs (e.g. accountants, lawyers, IT consultants) for improving the quality of service and identification of market niches.

Keywords: consultancy market services, micro, small and medium-sized companies, entrepreneurship supporting institutions

JEL: L84

Sažetak

Poslovni savjetnici, kao i njihov utjecaj na poslovanje mikro, malih i srednjih poduzeća (MMSP) su već duže vrijeme u fokusu istraživanja brojnih istraživača. MMSP iskazuju sve veći interes za uslugama profesionalnih savjetnika, no tek mali udio njih zaista i koristi te usluge.
Ovaj rad analizira tržište konzultantskih usluga u Hrvatskoj, s posebnim fokusom na razlike u perspektivama – jazove i preklapanja u ponudi (konzultantska poduzeća) i potražnji (vlasnici MMSP) na tržištu. Osnovni ciljevi istraživanja su determinirati i analizirati čimbenike koji utječu na tržište konzultantskih usluga u Hrvatskoj, kroz mišljenja i stavove vlasnika MMSP s jedne strane, i konzultanata kao pružatelja usluga, s druge strane (perspektiva zrcaljenja).
Empirijski rezultati u ovom radu su nastali na temelju sekundarnog i primarnog istraživanja – istraživanje provedeno među 303 vlasnika MMSP i 60 poduzeća koja nude konzultantske usluge za MMSP.
Rezultati istraživanja omogućuju segmentaciju korisnika konzultantskih usluga za MMSP i identificiranje tržišne niše za konzultante MMSP. Na temelju rezultata istraživanja kreirane su i preporuke za bolje razumijevanje vlasnika MMSP, kao korisnika konzultantskih usluga, kojima se može utjecati na kreiranje boljih marketinških i strategija razvoja usluga. Rezultati ovog istraživanja i preporuke mogu koristiti širokoj mreži poslovnih savjetnika za MMSP (primjerice računovođe, odvjetnike, konzultante za informacijsku tehnologiju) s ciljem poboljšanja kvalitete svojih usluga i identifikacije tržišnih niša.

Ključne riječi: tržište konzultantskih usluga, mikro, mala i srednja poduzeća, poduzetničke potporne institucije

JEL: L84

1. Introduction

Micro, small and medium-sized enterprises (MSME) are important part of every national economy. With the rate of 99.8% of MSME present on the EU28 market, this sector provides employment for 66.8 % employees of total workforce and produces 57.9 % of total value added generated by the non-financial business sector (European Commission, 2014). Although all the national

governments recognized the importance of the MSME sector, and therefore developed different services that could help and boost further growth of that sector, there are still obstacles that hinder their development. Owners of the MSMEs usually complain on finding skilled workforce, access to finance and finding new customers (European Commission, 2014). Business environment in which MSMEs are operating is complex, dynamic and under constant process of changing, while this sector is more affected by market distress and macroeconomic changes.

In dealing with all these issues external help, especially the expert one, could provide necessary assistance and answers. The literature review revealed a great interest of the researchers on the impact that usage of external expertise could have on performance of MSMEs, but very few were focused on MSME that still hesitate to seek for the advice. The aim of this paper is to detect the determinants that are crucial for seeking and using external help, but also to identify the reasons for not asking one. On the other hand, for the complete understanding of this complex relationship between client (owners of the MSMEs) and the consultant, it is necessary to find out consultant's opinions. Standpoints and opinions on the same issues, from clients and consultants, are researched and compared (mirroring perspective), which provided new insights into the problem that was analyzed from different angles.

By identifying necessary characteristics and expertise that clients (owners of the MSMEs) ask from the consultants, it becomes possible to recognize the biggest obstacles for the development of the consultancy market in Croatia. Conclusions and recommendations could help in shaping policies that can help in developing that market, but also to consultants to understand better standpoints and needs of their potential clients.

2. Previous research

With the rise of the number of MSME in national economies, but working in very dynamic environments, it become obvious that owners of MSME need help in running their everyday businesses. Most MSMEs fail due to a lack of marketing or managerial skills or capabilities and technical expertise (Dyer & Ross, 2008). Number of companies registered for offering external help or advice also recorded considerable rise. Owners of the MSME reported that the impact of the advice was important and crucial (Bennett & Robson, 1999). Researchers confirmed positive relationship between growth of MSMEs and

external advice (Wren & Storey, 2002), which was measured through sales turnover, employment, exports and profitability (Turok & Raco, 2000).

External advice is usually targeted on filling specific needs of MSMEs (Ramsden & Bennett, 2005) which will enable owners of MSME to overcome some specific problems, legal issues or provide them a strategic view of market or the company itself. Owners or managers of MSMEs need to extend their expertise beyond their background competencies in order to survive on competitive markets. Turok and Raco (2000) emphasize that management weaknesses are widely considered to be the most important internal growth constraint facing MSMEs. But many owners of the MSME are either unaware that such services exist, they are skeptical of their value or confused about who to choose among many external advisers on the market (Gibb, 1998; Storey, 1994). Christiansen and Klyver (2006) and Nicolescu *et al.* (2013) have found paradoxes in the researches about MSMEs and their use of advisory services. There is no doubt that owners of the MSMEs need some external advisory help, but they are using it very seldom and owners of the MSMEs find professional management advice of little or no use at all. Other researchers (Bennet & Robson, 1999; Berry *et al.*, 2006; Ramsden & Bennet, 2005; Blackburn & Jarvis, 2010) report that business advice is crucial for survival of MSME in the dynamic and constantly changing markets. Research results are pointing out on two very important facts – owners of the MSMEs are using external help, but consultants are not their first choice and determinants that are affecting the process of choosing external advisers are still subject of research. Also, according to research results, level of market development (also the diversification of the services offered), dynamics and complexity of the environments can be important factor for searching some advice from external adviser.

Bennett and Robson (1999) reported that external help for MSME could be grouped into six areas: professional specialists, professional generalists, market contacts, social contacts, business associates and government agencies. Among all experts that can provide external help to MSME, accountants dominate (Collins & Jarvis, 2002; Matlay *et al.,* 2005). Accountants are, according to Blackburn and Jarvis (2010) the first choice of the MSME owners. While Bennett and Robson (1999) and Carey *et al.* (2005) claim that determinants of advisory services are completely objective and measurable: competence of the adviser or accountant, size of the firm (frequency of meeting the accountants increases with size of the company), industry and firm growth,

Berry and Sweeting (2006) are claiming that determinants of business advice are more complex. They have proved that among these determinants the key role are playing the "soft" ones: trust, relationship and professional ethics in the provision of business advice. Gooderham *et al.* (2004) are claiming that professional accountants are shown to be extremely important in MSME while introducing implementations and changes. They maintain a broad base of expertise, enabling them to contribute to the success of MSME by providing services beyond the traditional services, such as accounting, auditing and assurance services (Greenwood *et al.,* 2002; Kamyabi & Devi, 2012). While maintaining its traditional focus, the accountants tapped into to business advisers market. Blackburn *et al.* (2010) suggest that accountant's services go beyond conventional taxation and financial issues and include business development advice and "emotional" support. Over the time, the amount and type of advice from accountants has evolved according to both the needs and the strategic intent of accountants (Doving & Gooderham, 2008), which seriously changed the business advice market and the position of the consultants. Owners of the MSMEs and their accountants have developed relationships, gained mutual trust, which reduced information asymmetry costs.

Recognizing the importance of the MSME, governments also wanted to soothe the barriers in their business eco-system. Establishment of government agencies, focused on providing help to MSME in coping with everyday challenges, changed dramatically the market of the business advice. By offering free or subsidized advice, government agencies (usually business support organizations) became important competitor to all other business advice providers, especially consultants. While in some countries, like Business Link in United Kingdom, programs and advice from government agencies recorded impressive results, in others (results from Canada, Romania and Croatia) those agencies did not achieved planned results and outreach. Shaw and Blackburn (2000) identified five factors that explain failure of owners of the MSME to use public resources and services offered by government agencies: lack of confidence, services are of poor quality, poor marketing of those services, rates higher than owners are willing to pay and poor fit between services that are offered and those that MSMEs need. Since government policies are tailored to be universal for all MSME, owners often have a feeling that they are "disconnected from the reality of small business" (Audet & St-Jean, 2007 p. 175). Since every industry have its own specifics, individualized programs are welcome but cannot be offered by government agencies and civil servants. They do not have the necessary expertise or authority to adjust ser-

vices to the requirements of individual firms (Audet & St-Jean, 2007 p. 175). Also, among research results Audet and St-Jean (2007) conclude that MSME owners want accessible, efficient and fast service, which government agencies can hardly deliver.

Owners of MSME are seeking for advice that is fit for purpose, relevant, timely delivered and of high quality (Blackburn & Jarvis, 2010). Consultants are bringing fresh and unprejudiced points of view with problem solving capabilities and they are complementing internal resources and capabilities, providing reliable information, independent evaluation, making expert recommendations, giving legitimacy, changing strategic orientation (McLachlin, 2000). Choosing among different advice providers on the market, owners of the MSMEs will decide upon trust, relationship that has been built through cooperation, reputation that advisers have on the market (especially among owners of MSMEs), expertise or specialization and perceived value of the advice (Blackburn *et al.,* 2010). Offering good work and good service are not enough to attract and retain customers (Soriano *et al*., 2016).

According to Mihai (2009) research results are indicating that there is an acute lack of information among MSMEs regarding the consultancy services on the market. Inefficient communication between business advice providers can be one of the major reasons for owners and managers of MSMEs turn on their accountants in searching for business advice. Evidence from developing countries revealed insufficient number of individuals qualified for providing quality advice (Fernandes & Mattoo, 2009).

Owners of small companies tend to rather solve problems on their own, than to open their company to a stranger (Bennett, 2007). Good reputation and recommendation are the most significant factors that influence usage of the consultancy services. Expertise and fresh perspective can bring in the company only business advisers that have experience and reputation. Despite common belief that price of the service is significant factors for choosing business adviser, Blackburn *et al*. (2010) proved that owners and managers of the MSME think rather about value of the advice and the change that adviser can bring in the company.

2.1. Consultancy market in Croatia – supply side of the market

Previous research (Bennett, 2007, Mihai, 2009, Fernandes & Mattoo, 2009) showed that market specifics but especially business eco-systems can influ-

ence supply side of the consultancy market. Also, government policies and establishment of the network of government agencies or business support organizations can significantly change the picture of consultancy market. Croatian consultancy market also has its own country specifics.

The commercial and professional infrastructure for the development of MSMEs in Croatia is providing support to MSMEs by two types of organizations: entrepreneurship supporting institutions and professional private consulting companies.

The network of entrepreneurship supporting institutions encompasses 30 regional development agencies, 35 centers for entrepreneurship, 30 business incubators, 3 business parks, 9 technology parks, around 100 business zones whose activities are financially supported primarily by their founders (local or/and regional municipalities in majority of cases), EU funded projects and Ministry of Entrepreneurship and Crafts grants.

Croatia does not have a unified database of the business entities and information about the consultancy services market. According to FINA (Financial Agency) consultancy services are provided by 2,799 professional consultancy companies, where majority of them (59%) is located in Zagreb County, where operate 34% of all Croatian MSMEs. Geographical distribution of the consulting companies is fairly uneven. Number of MSMEs per consulting company varies from 18.1 in City of Zagreb to 268.5 in Lika-Senj County. Consultancy market and perception of quality of professional infrastructure support for MSMEs within GEM – Global Entrepreneurship Monitor research is graded with 2.6 in 2015, while EU average is 3.1 (Alpeza, Has, Novosel & Eterović, 2017)[2]. This grade indicates dissatisfaction of the MSME owners and managers with available services on the consultancy market, but also as a mismatch between demand and supply on the market.

2.2. MSME sector in Croatia – demand side of the market

Croatian economy is mostly grounded on MSMEs sector. This sector makes 99.8 % of total companies in Croatia and provides workplace for 69.2 % of total employees (Alpeza, Has, Novosel & Eterović, 2017).

According to GEM research results, level of activity in start-up businesses is lower than average of countries involved in GEM research (Croatia 7.7, GEM

countries' average is 8.0), but majority of the companies were started because of necessity. Furthermore, Croatia has small number of growing companies, among which 71.8 % of them offered a product that was not new to anyone. Croatian MSME sector is marked with big regional differences. The majority of MSMEs is concentrated around City of Zagreb (34.15 %), while other poorer counties (like Lika-Senj County) suffer from low entrepreneurial activity.

Croatian MSME work in very dynamic, complex and difficult environment. Obstacles that hinder growth and development of MSMEs are pretty much constant over the years. Among biggest ones, according to World Banks Doing Business are protection of investors, dealing with construction permits and registering properties (World Bank, 2015). These issues are followed by corruption, high tax rates and limited access to finance. Obstacles, next to low level of innovativeness are the main reasons that MSMEs stay small. With the products that are not new to no one, Croatian MSMEs are not competitive and majority of their incomes comes from domestic, national market.

3. Research methodology

The empirical part of this research consists of secondary and primary data collection. Secondary research included data collection from the existing documentation and research results – FINA (Financial Agency), CEPOR (SMEs & Entrepreneurship Policy Centre) and data from GEM - Global Entrepreneurship Monitor research about the MSME sector in Croatia. The results of this part of research enabled better understanding of this sector, needs and obstacles that hinder or at least make difficult MSMEs to grow. Those obstacles could require external consultants' help. Secondary research was also used to identify consultancy companies and to analyze services they are offering on the Croatian market.

The second part of the research was primary data collection from two samples: the MSME owners (in total 303 respondents from MSME sector with 0-249 employees) and MSME consultants (in total 60 respondents from domestic consultancy firms and individual consultants) about their needs, opinions and future plans. The objective of primary research was to compare supply side (consultants) and demand side (MSME sector) of the market. In pursuit for the determinants that shape the decisions of using external consultants' advice, the comparison was conducted of the consultants' and MSMEs'

opinions and standpoints about the factors that influence decisions when using consultants' advice. Data from both MSME owners and consultants were collected by two different questionnaires, developed based on study objectives and findings from two in-depth interviews (one with a consultant and one with an entrepreneur). Primary data collection among both samples was conducted by CATI methodology by using integral and completely automated system for telephone interviewing. The stratified random sampling was used for sample selection. Strata was defined based on geographic distribution of MSME companies and consulting companies. Total population was divided in five regions (Slavonia, Central Croatia, Zagreb region, Dalmatia and Primorje). Number of interviews in each region was defined according to number of targeted business entities in regions. Inside of each region (strata) random sample selection was done. Basis for random selection was database of all companies that submitted annual financial report in 2012 (for MSME Study study) or list of 500 consultancy firms identified through secondary research (for Consultant Study).

4. Results and discussion

Majority of the MSMEs that have participated in the research originated from the trade sector (31%), followed by the production sector (17%), while the remaining 52% of enterprises fall into the providing other services category. More than half of the enterprises (62.4%) included in the research were oriented toward domestic (Croatian) market, and only 9.6% were exclusively oriented toward foreign markets.

The biggest problems enterprises are facing are various legal issues (51% of enterprises), followed by the problems in financial management (43.9%), and problems in sales or marketing (43.6%). The key problems companies must solve in the next year are problems related to the financial management, searching for loans, and problems in sales or marketing. In addition, 8% of companies stated that they have no problems to solve. Other problems (12%) for companies are related to the building permits, concessions solvency, collection of complicated tenders, finding business opportunities, business expansion, and state bureaucracy.

Despite those issues and challenges, 78% of respondents have not hired consultant in last three years, 9% hired consultant only once and 13% have hired consultant several times. The largest number of those that used consultants

help, used the consultant for solving various legal issues and problems related to business planning and project preparation (19.4%).

Croatian MSME prefer domestic consultants (91% of the respondents hired the Croatian ones) and they obtained information through word of mouth or recommendation (71.6%) or through internet (19.4%).

When asked to evaluate their satisfaction with consultancy services, company owners expressed most satisfaction with consultants' expertise and knowledge (M=4.31), while they are the least satisfied with usefulness of cooperation (M=3.9). Majority of enterprises' owners that used consulting services would repeat their cooperation with the consultants (certainly yes 43%, probably yes 28%), while 14% of them would not repeat cooperation with consultants.

Understanding the business problem, expertise and knowledge, and the speed of giving feedback are the best rated satisfactions according to the enterprises stating that certainly and probably would use services of consultants. The least rated satisfaction is value received for the price, usefulness of cooperation and overall results.

In most of the cases, non-users of consulting services are informed and familiar with the offer of consulting services in Croatia (70.8%), while 8.9% have requested offers from consultants. Majority of non-users of consulting services have not used services because they managed to solve their problems on their own, so that there was no need for consulting services (67%), while the other reason for not using consulting services is the high cost of the service (15.5%). The main reasons for the lack of the trust between enterprises and consultants are: riskiness, enterprises have not heard much positive about consultants, consultants talk much and charge dearly, consultants have no connection with the real situation and have no intention of investing their own money.

The largest number of non-users of consulting services stated that they will use consulting services if they will be convinced that they will benefit from them (39.4%), if the service provided is more reasonable pricing (21.2%), and if they can firstly receive a free advice and then, based on that experience, they will think about the cooperation (12.3%). Other reasons crucial for enterprises use of consultant services are: commission system, connection of consultants with the results of tenders, expanded business guarantee of solving problems, and increased volume of work.

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When asked about future plans related to use of consultants' services, the largest number of enterprises would use consultants in order to solve problems related to writing plans and projects, business planning, and when seeking for business partners and investors, while the smallest number of enterprises would use consultants in order to solve problems related to engineering. Owners of the MSMEs and consultants mostly agree on criteria when selecting an external consultant – knowledge and expertise, understanding the business problem, recommendation and previous experience. Geographical proximity and company origin are rated as the least important criteria. Still, biggest gaps can be found in relation to certificates where MSMEs are giving higher rating than consultant, just as is the case with intuition. Recommendation, important from every perspective, is somewhat higher rated by consultants (Figure 1).
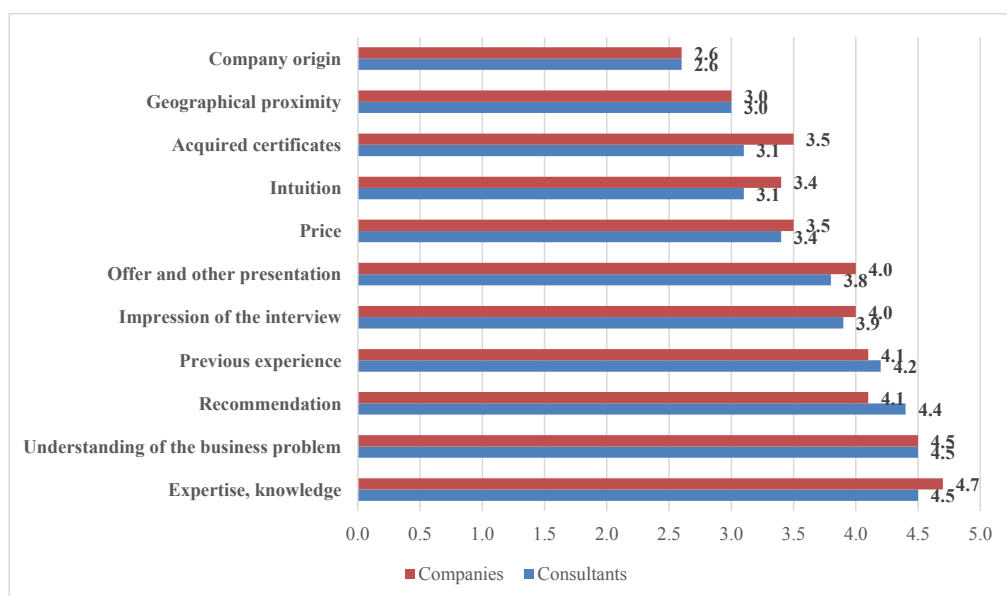
Figure 1. *Rating of the importance of each criterion for the selection of the external business consultant, business prospects and consultants*

In addition, 58% consulting companies have a membership in a consultant association, such as Association of Consultants within the Croatian Chamber of Economy (62%), HAMAG INVEST Network of consultants (6.9%), and Croatian Association of Management Consultants (3.4%). Almost 70% of surveyed consultants have specific certificates and licences and 31% of consultants do not have any certificates or licences. The most represented form

of promotion and sales of consultancy services is recommendation - word of mouth (47.3%), advertising through their own website (34.5%), advertising through the Internet (12.7%), and advertising through traditional media (1.8). In addition to the traditional methods of advertising listed in figure 39, most of the respondents are contacting potential clients on their own initiative (83.3%), by visiting gatherings (83%), using social contacts (79.2%), and by presenting their services at various events (62%). Slightly fewer number of interviewed consultants are making additional investments in advertising (44.2%), developing formal marketing strategy (33.3%), while the smallest number of respondents is developing formal sales strategy (25%).

5. Conclusion and recommendations

The commercial and professional infrastructure for the development of MSMEs in Croatia is providing support to MSMEs by two types of organizations: entrepreneurship supporting institutions and professional private consulting companies (more than 2,500 according to FINA data), where majority of them (59%) is in Zagreb County. Areas of providing consulting services and areas to which the MSME consultants are the most oriented are primarily associated to writing plans and projects for application to tenders for various incentives, loans, EU funds, *etc*., and with business planning, including preparation of investment projects, market research, marketing plans, searching for business partners and investors. Consultants in general have wide knowledge and covers range of fields, but there is insufficient number of consultants with specialized expertise.

In the last three years, 22% of MSMEs have hired a consultant, when solving legal issues, problems related to business plan preparation, problems in financial management or management in general. The most important criterion for choosing the consultant is expertise and knowledge, followed by understanding of the business problem and experience. The least important criteria are origin of the company, geographic proximity and price. MSMEs in general perceive themselves as being familiar with the offer of consultancy services market in Croatia. In most cases, non-users of consulting services have not used services because they have managed to solve their problems on their own.

Majority of MSME consultancy companies are familiar with consultant associations in Croatia, and every second consultancy company in Croatia has a membership in a consultancy association. Both, at this point, are not recognized as proof of quality meaning that they are not able to transfer the value

on consultants if not recognized as value holders. Certificate should reposition itself from "just a label" to "label of trust".

Based on the research results, recommendations for advisory service providers for MSMEs are developed:

- *Recommendation 1* - Consultants should focus on the key problems in business that members of the MSME sector recognize as significant for solving in the next period such as issues of legal nature, problems related to financial management, problems related to marketing and sales. Furthermore, consultants should focus on the areas where demand for consulting services is not met: energy saving and environmental protection measures; introduction and upgrading of computer information management systems, implementation, preparation and certification of quality management systems, systems for improvement of accounting and controlling, engineering studies, implementation of modern human resources management systems.
- *Recommendation 2* - Consultants should develop own formal sales and marketing strategies with the aim of higher quality approach to sales and marketing of services, and a more credible presentation of the importance of creation of the same approach in clients' businesses.
- *Recommendation 3* - Consultants should organize free-of-charge half-day workshops for entrepreneurs on topic of issues whose solving they can help by providing consulting services and present successful examples from their own consulting practice in order to build credibility and entrepreneurs' trust in the capacity for providing help in solving problems. Consulting services to entrepreneurs should be offered with the option to choose different modes of payment, which would reflect consultant's willingness to participate in the risk of decision-making and implementation of solutions proposed by the consultant, and self-confidence in the ability to provide support in solving problems and developing entrepreneur's business.

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Endnotes

1   The paper was selected for publishing in the *Economic Review – Journal of Economics and Business*, 15(2), ISSN 1512-8962.

2   Ratings from 1 to 5, where rating 5 indicates there are consultancy, professional legal and accounting services; companies can afford them; they are of high quality (Alpeza, Has, Novosel & Eterović, 2017).

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EXPLORING CHANGE MANAGEMENT IN CROATIAN SMEs

ISTRAŽIVANJE UPRAVLJANJA PROMJENAMA U MALIM I SREDNJIM PODUZEĆIMA U REPUBLICI HRVATSKOJ

Abstract

Small and medium-sized enterprises (SMEs) are considered great contributor of economic growth. Their importance in national economies is not reflected only in their share in the total number of enterprises but also in their share of the realized value of GDP and exports and their great contribution to employment. However, it is not enough to start small businesses and ensure their survival, but a critical factor of SMEs' influence on economic growth is the propulsion of their growth and development.

This research assumes that the way SMEs manage the changes determines their development potential and consequently their success and its associated longevity. The purpose of this paper is to examine whether the studied enterprises could be categorized with recognizable features concerning the mode these SMEs manage organizational and strategic changes. Therefore, a cluster analysis is used on the sample of 190 established SMEs in the Republic of Croatia. The results indicate the distribution of analyzed SMEs in four clusters that show significant differences between selected classification variables of organizational and strategic dynamics and their related performance. In cluster of SMEs with the strongest organizational and strategic dynamics are the enterprises that show the highest level of performance. More than 60% of the enterprises with the potential (fast-growing, high-tech and innovative SMEs) are in this cluster.

Based on the conducted research, practical recommendations may be provided for resource allocation on certain aspects of organizational and strategic dynamics with the aim of increasing SME's development potential and their long-term performance. From the theoretical viewpoint, this research gives a new insight into the specificities of change management in SMEs in relation to large enterprises. It also unfolds arrays of new research to include new samples and longitudinal approach. This

would allow a comparison of results and further expansion of knowledge in this specific area.

Sažetak

Mala i srednja poduzeća (MSP) općenito se smatraju glavnim poticateljima ekonomskoga rasta. Njihova se važnost ne ogleda samo u njihovom udjelu u ukupnom broju poduzeća, već u njihovom udjelu ostvarene vrijednosti BDP-a i izvoza, te velikom doprinosu zaposlenosti. Međutim, nije dovoljno osnivanje malih poduzeća i njihovo preživljavanje, nego je kritični činitelj utjecaja MSP-ova na ekonomski rast propulzivnost njihova rasta i razvoja.

U ovom se istraživanju pretpostavlja da dinamički kapacitet MSP-ova utječe na razinu njihove adaptabilnosti i fleksibilnosti te posljedično i na njihovu uspješnost i s njom povezanu dugovječnost. Odnosno, pretpostavlja se da način na koji MSP-ovi upravljaju promjenama određuje njihov razvojni potencijal. Svrha ovoga rada je istražiti mogu li se, s obzirom na način na koji MSP-ovi upravljanju organizacijskim i strategijskim promjenama, istraživana poduzeća kategorizirati s prepoznatljivim obilježjima. U tu svrhu koristi se klaster analiza na uzorku od 190 etabliranih MSP-ova u Republici Hrvatskoj.

Rezultati provedene klaster analize ukazuju na distribuciju istraživanih MSP-ova u četiri klastera koja pokazuju značajne razlike odabranih klasifikacijskih varijabli organizacijske i strategijske dinamike te s njima povezane uspješnosti. U klasteru poduzeća s najjače izraženom organizacijskom i strategijskom dinamikom su poduzeća koja pokazuju i najvišu razinu operativne i strategijske uspješnosti te je među njima više od 60% poduzeća iz skupine brzorastućih, visokotehnoloških i visokoinovativnih MSP-ova. Na osnovu provedenog istraživanja mogu se dati praktične preporuke za usmjeravanje resursa na određene aspekte upravljanja organizacijskim i strategijskim promjenama, a s ciljem povećavanja razvojnog potencijala MSP-ova i njihove dugoročne uspješnosti. U teorijskom smislu, ovo istraživanje daje novi pogled na specifičnosti upravljanja promjenama u MSP-ovima u odnosu na velika poduzeća te otvara prostora za nova istraživanja koja bi obuhvaćala nove uzorke i longitudinalni pristup. To bi omogućilo usporedbu rezultata i daljnje proširivanje saznanja iz ovoga specifičnog područja.

1. Introduction

Small and medium-sized enterprises (SMEs) are generally considered main contributors of economic growth. In majority of national economies they represent more than 99% of the total number of enterprises. In 2015 SMEs represented 99.7 % of the total number of registered enterprises in the Republic of Croatia, with a share of 54% in total revenues, 69.2% in employment and 50.3% in Croatian exports (CEPOR, 2017, p. 7). Therefore, a vast number of institutional support measures is directed towards different categories of small enterprises in order to strengthen their development potential. On the other hand, those measures often don't give the expected results. When it comes to scientific context, the number of research papers trying to explain the factors of business success of SMEs in different ways has been growing for the past 25 years.

The focus of such research have been different combinations of variables from internal and external surrounding which are crucial for the success of entrepreneurial undertaking. However, none of those research projects, *i.e.* theories, hasn't been able to fully explain the principles of business success of small enterprises. Beside that, most of research was directed to special categories of SMEs, such as the startups, fast growing and high-tech enterprises. A gap remained in research of already established SMEs, which achieved a long-term success measured by the growth in the number of employees, revenue and years of functioning.

This research starts with the hypothesis that the way SMEs manage the changes determines their development potential and consequently their business success and longevity. The empirical part of the research has been conducted on the sample of 190 already established SMEs in the Republic of Croatia.

The purpose of this research is to examine whether the researched enterprises could be categorized with recognizable features regarding the specificities of organizational and strategic dynamics and certain criteria of business success. Using the cluster analysis, this research divides the analysed SMEs in several clusters whose characteristics give insight into factors which determine their operative and strategic success.

The final goal is to use the findings from this research to create specific models of change management in SMEs with some recommendations for

key decision maker. Before presenting the results of the conducted empirical research, theoretical framework of this research will be described briefly.

2. Theoretical framework of the research

SMEs stand out due to their ability for adaptability and flexibility which enables them to develop their position proactively in current dynamic economic circumstances. Therefore, they have been very inviting field of research for the past 25 years. Although the economic benefits of micro, macro and medium-sized enterprises are well-known, only small number of enterprises grow, while the majority remain small or "die" young (Doern, 2009, p. 276; Amm, 2011, p. 4, quoted in Šimić, 2014, p. 20). At that point, general research question about the features of SMEs with long-term development perspective comes into focus. According to Torres and Lyon (2003), research of growth and business success of SMEs can be divided into those trying to establish universal principles (theory of life cycle) and those being directed to research factors of growth in the context of contingency variables. Different theories tried to give insight into growth of enterprises but the generally accepted theory still hasn't been provided (Federico, Kantis & Rabetino, 2012, p. 575).

The area of change management in the enterprises has been researched to a great extent in bigger systems. What can be applied to bigger enterprises can hardly be applied to smaller ones due to their unique features: limitations of different types of resources, short-term goals, smaller market influence, bigger susceptibility to market change, bigger influence of personality of key people/entrepreneurs, changeable and varius strategies, *etc*. (Poole, 2009, p. 15) Beside their unique features, the question about the typical content of changes being conducted in SMEs pops out. Although according to Nicholson, Shepherd and Woods (2009) the elements of business model which can be subject to change (*e.g.* offer, market, internal competences, competitive strategy, financing, personal business ambitions of an entrepreneur, *etc.*) can be taken as the guidelines, each entrepreneurial undertaking can contain some of the unmeasurable variables which significantly affect the processes as well as the results of the changes. Those are, for example, entrepreneur's energy, intuition and his personal goals, the employees' willingness to identify themselves with the company's aims in all segments of the job, the level of ambidextrous orientation on individual and organizational level, *etc*.

One of the most often mentioned features of SMEs is their resource limitation. In the framework of research of change management in SMEs the question of

organizational resources and capacities imposes itself. In order to conduct the planned changes successfully, enterprises require resources which overpass the minimum of resources necessary for the production of current output and enable focus on long-term results (Srinivasan, Rangaswamy & Lilien, 2005, p. 114).

Small enterprises often lack resources, but they try to compensate through flexibility. Flexibility, in this case, means organizational capability which hastens the organizational adjustment to changes (Bahrami, 1992, quoted in Martin, 2006, p. 17). Connected to the resource flexibility is the area of strategic flexibility as the capability of dynamic re-defining of business model and strategy as the consequences of changes (Hamel & Valikängas, 2003). It is also reflected in fast implementation of changes with strategic impact (Hitt *et al.*, 1998, p. 26-27).

All of the above mentioned indicates a large number of specific variables which influence change management in SMEs. Bearing in mind the generally accepted assumption about the internal potential being crucial for business success of SMEs, it is assumed that their internal organizational dynamics can be described by the way they manage organizational changes, resources and capabilities.

Since there is also an assumption that the organizational efficiency must be in function of organizational effectiveness, this research includes the research of specificities of strategic dynamics in SMEs. Compatibility between the organizational and strategic processes should crucially affect the business success of an enterprise, appreciating the external influences.
Next chapter will describe methodology and results of the empirical research conducted in this research paper.

3. Methodology and results of the empirical research

The first phase of empirical research that this research paper proceeds with referred to confirmation of connection between the change management, strategic development and the business success of SMEs[1]. For that purpose a questionnaire was made and its validity and reliability were confirmed by the analysis of the research results (Tomljenović, 2016).

This research paper is looking for the answer to question whether the researched SMEs can be categorized with recognizable features, due to the specific variables of organizational and strategic dynamics and certain

success criteria. Therefore, the cluster analysis is used on the data gathered by empirical research.

The basic working hypothesis of this research paper is: based on the variables of organizational and strategic dynamics it is possible to group the established SMEs with regard to their development potential.

This research was focused on SMEs with 10 and more employees, which have been operating for over 7 years. Based on FINA's data base the research population was identified and made out of 7903 SMEs in the Republic of Croatia. The research population represents 8.1 % of total number of entrepreneurs in the Republic of Croatia, 38.3 % of employees and 28.8 % of revenue from entrepreneurial activity (Tomljenović, 2016, p. 128).

The research was conducted from May to September, 2014 and it included 190 SMEs, which makes 2.4 % of research population. It was made by an on-line questionnaire sent to the owners/managers of researched enterprises. Calculation of chi-square test and its insignificance showed that the research sample reflects the research population due to territorial presence of the sample enterprise, core business and the size of the enterprise (Tomljenović, 2016, pp. 133-134). During the research, the category of enterprises with specially emphasised growth potential popped out, namely fast-growing, high-tech and highly innovative enterprises. In total sample there were 46 or 24 %.

Cluster analysis was used as the basic method in this research. Cluster analysis is a multivariate data mining technique whose goal is to group objects based on features they possess (Hair *et al*., 2010).

Multivariety is a feature of cluster analysis enabling it to analyse several variables at the same time and as a part of a whole. K-means clustering method has been used in order to get detailed characteristics of each cluster. It is suitable for grouping units (SMEs in this case) on which certain features were measured (research variables).

In addition to that, this research paper will show the results of discriminant analysis which was also used in order to determine the capacity of variables to predict classification of enterprises within a cluster. To make sure that the result was appropriate, it used canonical discriminant analysis for the verification of the data.

Here are the variables that have been used for analysis:

Table 1. *Variables in the questionnaire*

Organizational dynamics	Strategic dynamics	Performances and business success	Context
Managing organizational changes • Intensity of changes in operating processes • Intensity of changes in market processes • Planned approach to change • Specific context of change • Individual orientation of entrepreneurs with changes *Resource management and capabilities* • Availability and flexibility of financial resources • Flexibility of Human Resources • Contextual ambidexterity	• Strategic Flexibility and Diversity • Strategic orientation • Strategic ambidexterity	• Perceived performances • Business performances • Level of achievement of strategic goals	• Entrepreneurial orientation • Environmental uncertainty

Source: Author's research

3.1. Results of cluster analysis

Based on the results of k-means cluster analysis this chapter will explain the characteristics of four clusters of SMEs regarding the chosen classification variables.

Table 2. *Characteristics of cluster based on mean and standard deviation*

Variables	Cluster 1 N=75		Cluster 2 N=12		Cluster 3 N=58		Cluster 4 N=43	
	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.
Intensity of changes in operating processes	**3.38**	1.12	2.02	1.19	2.00	0.80	2.85	1.00
Intensity of changes in market processes	**2.89**	0.72	2.12	1.12	2.10	0.76	2.74	0.74
Planned approach to change	**3.59**	0.80	1.58	0.77	2.29	0.77	2.62	0.83
Specific context of change	3.37	0.96	3.22	1.31	**3.53**	0.76	2.29	0.77

Individual orientation of entrepreneurs with changes	**4.34**	0.52	2.72	0.88	3.83	0.59	3.89	0.67
Managing organizational changes	**3.52**	**0.82**	**2.33**	**1.05**	**2.75**	**0.74**	**2.88**	**0.80**
Availability and flexibility of financial resources	3.50	0.98	1.75	0.63	**3.67**	0.87	2.08	0.78
Flexibilityof human resources	**3.96**	0.78	2.42	1.10	3.23	0.77	3.38	0.94
Contextual ambidexterity	**3.89**	0.61	2.38	0.81	3.38	0.53	3.42	0.69
Resource management and capabilities	**3.78**	**0.79**	**2.18**	**0.85**	**3.43**	**0.72**	**2.96**	**0.80**
Strategic ambidexterity	**4.27**	0.44	2.84	1.16	3.51	0.67	3.76	0.64
Strategic flexibility and diversity	**4.14**	0.57	2.33	0.63	3.22	0.71	3.61	0.72
Strategic orientation	**4.27**	0.59	2.67	0.74	3.44	0.57	3.97	0.63
Strategic dynamics	**4.22**	**0.53**	**2.61**	**0.84**	**3.39**	**0.65**	**3.78**	**0.67**
Level of achievement of strategic goals	**3.85**	0.75	1.92	1.08	3.28	0.79	2.58	0.76
Perceived performances	**4.07**	0.50	2.08	0.87	3.64	0.49	3.14	0.55
Business performances	**3.72**	0.65	2.11	0.86	3.26	0.76	2.47	0.76
Entrepreneurial orientation	**4.17**	0.56	2.67	0.90	3.54	0.62	3.97	0.65
Environmental uncertainty	3.30	0.79	2.79	1.01	2.61	0.70	**3.35**	0.80

Source: Author's research

Distribution of the researched SMEs into 4 clusters shows significant differences among classification variables: organizational dynamics, strategic dynamics, performance and the context of researched enterprises. The key characteristics of SMEs in each cluster will be given below.

Cluster 1

75 (41 %) out of total 190 SMEs belong to this cluster, making it the cluster with most members. Here is the highest evaluation of most of research variables and more than 60 % of enterprises with growth potential belong to this cluster. When it comes to demographic characteristics, what can be noticed is the difference in revenue which is on average higher in this cluster in comparison to the others. In the area of organizational dynamics there is a significant positive deviation in evaluation of the intensity of changes in the operative processes, planned approach to changes, individual orientation of entrepreneurs to changes and the flexibility of human resources. Ambidexterity is highlighted contextually and strategically which means that the current enterprise potential is successfully used, while they are simultaneously devising and working on the future business success. In the area of strategic dynamics strategic flexibility and diversity are significantly better evaluated than in other clusters. Business success of SMEs in this cluster is higher regarding the level of reached strategic goals as well as reached performances. Beside that, entrepreneurial orientation is significantly better evaluated, but the environmental uncertainty is also higher than the average. It can be concluded that SMEs in this cluster are characterized by high level of organizational and strategic dynamics and business success connected to that. The higher level of the environmental uncertainty is connected to the need for dynamics of business system, which is being confirmed by characteristics of SMEs in this cluster.

Cluster 2

This cluster has the smallest number of members (12:6%). It has the smallest percentage of family enterprises and no SMEs with growth potential. Average evaluation of research variables in the area of organizational dynamics, strategic dynamics and performances is below average and significantly lower in comparison to the other clusters. What can be noticed is very low business success of enterprises in this cluster expressed through the evaluation of subjective and objective performances and the level of achieving strategic goals. It can be stated that, without a certain level of organizational and strategic dynamics, it is hard to ensure business success and development potential of an enterprise. Enterprises belonging to cluster 2 are those whose future is uncertain and which should recognise possibilities for changes which would affect all the aspects of their business success. Low level of

strategic and entrepreneurial orientation of entrepreneurs suggests the need to re-define the mission of the enterprise itself and the motifs that guide key people who manage the enterprise.

Cluster 3

This cluster has 58 members (30% of total researched enterprises). When taking demographic characteristics into account, the prevailing part of enterprises are family enterprises and service sector enterprises. The particularity of this cluster is relatively small current dynamics of different types of organizational changes. However, they have relatively high availability and flexibility of human and financial resources and the individual orientation of entrepreneurs towards changes. This result can be attributed to high level of family enterprises whose primary goals are connected to longevity and financial stability, as well as willingness to adjustments in order to reach that. Strategic dynamics has average evaluation which means that the need for flexibility and the adjustment of strategic approach is recognized, but it's not specially highlighted. The environmental uncertainty got low evaluation which can be explained with smaller need for organizational changes and the average evaluation of strategic dynamics. Business success measured by objective performances, subjective perception of satisfaction and the level of achieved strategic goals is satisfactory. It can be concluded that this cluster includes enterprises in relatively stable environment. Therefore, no intensive changes in organizational processes are needed but the entrepreneurs show the willingness to changes if necessary. In the area of strategic behaviour the highest evaluation belongs to strategic ambidexterity which means that, together with the current utilization of the market opportunities, the future strategic moves are being planned.

Cluster 4

This cluster includes 45 enterprises (24%). The prevailing enterprises are the ones with revenues up to 15 mil kn (more than 80%), mostly individual or family ownership. Also, in comparison to other clusters, it has the most manufacturing enterprises (33%). The organizational dynamics is relatively low, when taking into consideration types and intensity of organizational changes as well as the availability and flexibility of human resources. Entrepreneur's individual orientation to changes and the flexibility of human resources are highlighted. Strategic dynamics was evaluated above average,

which can be caused by higher evaluation of environmental uncertainty. The evaluation of objective performances and the level of accomplished strategic goals is above average, while the subjective evaluation of business success is just a bit higher than the average. In this cluster only strategic dynamics is highlighted, not the organizational. Since they show the environmental uncertainty above average and realatively low evaluation of business success it is obvious that they should put more effort into adjusting the internal organizational factors. Relatively high share of manufacturing enterprises can explain the lower level of organizational dynamics because the changes in this sector are the hardest and the most expensive ones.

3.2. Verification analysis

In order to assess the results of the conducted cluster analysis the results of its verification wil be shown below, by using canonical discriminant analysis on 4 clusters and 16 variables. A discriminant analysis checks the goodness of fit of the model that the cluster analysis found and profiles the clusters. In almost all analyses a discriminant analysis follows a cluster analysis because the cluster analysis does not have any goodness of fit measures or tests of significance. The cluster analysis relies on the discriminant analysis to check if the groups are statistically significant and if the variables significantly discriminate between the groups. (Setyaningsih, 2012, pp. 291-292). Box′M test is testing the assumption of covariance matrix equalitiy. In this case, Box′M statistic had value of 747.371 with probability of 0.00. Since the result is significant ($p < 0.05$) there is sufficient evidence that can reject the hypothesis that the groups covariance matrices are equal. To test the significance of the model it is necessary to analyse eigenvalues and Wilk′s Lambda coefficients presented in Table 3.

The larger the eigenvalue, the more of the variance is explained by that function. Nearly all of the variance explained by the model is due to the first two discriminant functions. The canonical correlation is the measure of association between the discriminant function and the dependent variable and the results of the first and second function show high canonical correlation. Wilks′ Lambda is a measure of how well each function separates cases into groups. Smaller values indicate greater discriminatory ability of the function. Results presented in Table 3 indicate highly significant functions ($p < 0.05$).

Table 3. *Eigenvalues and Wilk's Lambda result for discriminant analysis*

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation	Wilks' Lambda	Chi-square	df	Sig.
1	3.580[a]	67.5	67.5	.884	.074	461,846	48	.000
2	1.572[a]	29.6	97.1	.782	.337	192,522	30	.000
3	.154[a]	2.9	100.0	.365	.867	25,309	14	.032
a. First 3 canonical discriminant functions were used in the analysis.								

Source: Author's research

Clasification statistics is used to assess how well the discriminant function works, and if it works equally well for each group of the dependent variable. In this case 96.3% of original grouped cases correctly classified. It can be concluded that the results of the conducted cluster analysis can be regarded as relevant.

3.3. Models of change management in SMEs

The presented results of cluster analysis show that the way SMEs manage organizational and strategic changes is of high importance for their business success. Based on the already presented characteristics of each cluster, there has been made an attempt to abstract specific models of change management which could indicate development potential of enterprises that apply them. Presented model of change management in SMEs (Table 4) suggest some general recommendations for key decision makers.

Table 4. *Models of change management in SMEs*

	Organizational dynamics	
Strategic dynamics (high)	**Model 1: Highlighted strategic dynamics**	**Model 2: Highlighted organizational and strategic dynamics**
	–Low level of organizational dynamics, with the exception of human aspect (entrepreneuring and human resource) –Strategic dynamics above average –Environmental uncertainty –Problems in achieving strategic goals and performances below average –Family enterprises *Recommendation: taking measures in area of increasing dynamics of organizational processes; analysis of internal factors and the evaluation of the needs for changes; reconsidering the existing strategic goals; building up financial strength, etc.*	–Highly emphasized organizational and strategic dynamics in all dimensions –High level of operative and strategic success –High share of enterprises with growth potential (high-tech, highly innovative, gazelle) –Environmental uncertainty *Recommendation: further development of organizational and strategic potential to retain the existing level of business success and developing potential for achieving new strategic goals; focus on creative and innovative solutions in various segments of business*
Strategic dynamics (low)	**Model 3: Small dynamics and low performances**	*Model 4: Highlighted resource flexibility and the entrepreneur's orientation towards changes*
	–Low level of organizational and strategic dynamics –Unrealized strategic goals –Low performances and entrepreneuring orientation *Recommendation: reconsidering entrepreneur's motivation; rearrangeing business model*	–Diversity and dynamics of organizational changes isn't high, but the flexibility and availability of resources and the entrepreneur's orientation towards changes are above average –Average strategic dynamics –Average achievement of strategic goals and average performances (subjective satisfaction being emphasised) –Family enterprises –Large share of service enterprises *Recommendation: reconsidering entrepreneur's goals; directing available resources to achieve key goals.*
	low — Organizational dynamics — high	

Source: Author's research

In model 1 it is suggested reconsidering of organizational dynamics and establishing internal potential which can improve operative success and contribute to better achieving of strategic goals. It seems that the willingness of people to implement changes is not questionable, but the ability to notice the type of necessary changes and the way to implement them.

According to model 2 highlighted organizational and strategic dynamics is connected to the high level of operative and strategic success. In order to retain the level of business success and improve development potential they should strive to find ways of using creative and innovative potential in different segments of business.

In model 3 dynamics is low and the organizational performances indicate lack of sucess potential. Due to that, it is necessary to reconsider entrepreneur's motivation. If there is motivation to continue doing business further on, the existing business model should be rearranged and significant changes should be made.

Model 4 has more highlighted organizational than strategic dynamics and average performances. Since this model has a large share of family enterprises, it is suggested to reconsider entrepreneur's (family's) goals. If there is motivation for strengthening competition position and business expansion, decisions on directing available resources to new goals should be made.

The results of this research show that business success of the established SMEs is connected to the way they manage organizational and strategic changes. However, key limitations of this research are relatively small number of research variables, the size and heterogeneity of the sample, sample being limited to the Republic of Croatia and the cross-sectional approach. Beside that, taking into consideration all the recognized models of change management, including longitudinal approach and qualitative analyses of the chosen enterprises would enable further understanding of organizational and strategic processes that determine long-term success of SMEs. This way concrete recommendations could be given to key decision makers in SMEs, but also to the creators of institutional support measures for the sector of small and medium sized enterprises.

4. Conclusion

This research was conducted on the sample of established SMEs, questioning the entrepreneurs' attitudes to key variables of the research: organizational dynamics, strategic dynamics, business success and the context. The results of cluster analysis grouped the researched SMEs into four clusters with different characteristics.

Based on the characteristics of enterprises from each cluster four specific models of change management in SMEs have been recognised. In model 1 strategic dynamics is highlighted, in model 2 strategic and organizational dynamics, in model 3 all aspects of dynamics got low evaluation as well as business success of enterprise while in model 4 the greatest attention is directed to availability and flexibility of resources and the entrepreneur's orientation towards changes is high. Each model, due to its key features, shows different level of performance. All the listed characterictics indicate the possibility to create general recommendations for key decision makers with respect to the key characteristics of each model.

The scientific hypothesis of this research paper has been supported by the presented results, but further research requires new samples, longitudinal approach and the inclusion of qualitative research methods. It would enable deeper understanding of the relations between change management and business success of SMEs. It would also offer additional theoretical contribution in explaining the growth of SMEs and practical contribution in creating concrete recommendations for the entrepreneurs and the creators of institutional support measures, having the improved business success of the sector of small and medium enterprises as its goal.

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Endnote

1   Data base used in this research paper was a part of research within PhD thesis Change management in the function of strategic development (Tomljenović, 2016). This paper includes new analyses and presents unpublished results

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TEACHER'S PERCEPTIONS OF SCHOOL LEADER'S EMPOWERING BEHAVIORS, PSYCHOLOGICAL EMPOWERMENT AND CAREER SATISFACTION: EVIDENCE FROM A SLOVENIAN SAMPLE

PERCEPCIJE UČITELJA O OSNAŽIVAČKOM PONAŠANJU ŠKOLSKIH VOĐA, PSIHOLOŠKOM OSNAŽIVANJU I KARIJERNOM ZADOVOLJSTVU: DOKAZI IZ SLOVENSKOG UZORKA

Abstract

School leader influence on teachers in many different ways. Empowering school leader is capable of fostering work conditions that increase teacher's psychological empowerment and their career satisfaction.
Main aim of our research was to empirically test the relations between teacher's perceptions of school leader's empowering behaviors, psychological empowerment and career satisfaction. We tested two hypotheses in one structural model by using structural equation modeling (SEM). The quantitative data was collected through an online survey on a sample of 525 primary school teachers in Slovenia. Findings show that teacher's perceptions of school leader's empowering behaviors are

positively and statistically significantly related to psychological empowerment and career satisfaction.

Our study shows that teacher's perceptions of school leader's empowering behaviors affect teacher's psychological empowerment together with their career satisfaction. Therefore, it is essential for school leaders to enhance awareness and capacity in exercising empowering behaviors towards their teachers to maximize teacher's work potential. Research in the area of school leader's leadership is relatively new; based on our research, we can add to these studies the effect on psychological empowerment together with career satisfaction. Our research also contributes to understanding of leadership in primary education, organizational behavior and work psychology.

Sažetak

Školski vođe utječu na učitelje na različite načine. Osnaživački vođe škola su sposobni poticati radne uvjete, koji povećavaju psihološko osnaživanje učitelja i njihovo zadovoljstvo u karijeri.

Glavni cilj našeg istraživanja bio je empirijski testirati odnose između percepcije učitelja o osnaživačkom ponašanju vođa škola, psihološkog osnaživanja i karijernog zadovoljstva. Testirali smo dvije hipoteze u jednom strukturnom modelu pomoću modeliranja strukturnih jednadžbi (SEM). Kvantitativni podaci prikupljeni su putem online ankete na uzorku od 525 učitelja osnovnih škola u Sloveniji. Nalazi pokazuju da je percepcija učitelja o osnažujućem ponašanju vođa škola pozitivno i statistički značajno povezana sa psihološkim osnaživanjem i karijernim zadovoljstvom.

Naše istraživanje pokazuje da učiteljeve percepcije osnaživačkog ponašanja vođa škol utječe na psihološko osnaživanje učitelja zajedno sa karijernim zadovoljstvom. Stoga je od ključne važnosti za školske vođe da unaprijede svijest i sposobnosti u vježbanju osnažujućih ponašanja prema svojim učiteljima kako bi se povećala mogućnost rada učitelja. Istraživanje na području osnaživačkog ponašanja vođa škola je relativno novo; na temelju našeg istraživanja, možemo dodati ovim istraživanjima i učinak na psihološko osnaživanje zajedno sa karijernim zadovoljstvom. Naše istraživanje doprinosi i razumijevanju vođenja u osnovnom obrazovanju, organizacijskom ponašanju i radnoj psihologiji.

1. Introduction

In the 21ˢᵗ century, teachers are independent educational professionals (Tschannen-Moran, 2009) and driving force of primary education institutions (Aslan *et al*., 2014). Since, the teachers are key element and driving force of organization (Jordan, Miglič & Marič, 2016) it is of great importance to understand how to lead them and to motivate them effectively. One of the most important determinants of teacher's work motivation are psychological empowerment together with career satisfaction (Edalatian Shahriari *et al*., 2013), therefore school leaders must enhance awareness and capacity in exercising behaviors that will grow teachers' psychological empowerment and career satisfaction (Lee & Nie, 2014).

Empowering school leaders are capable of fostering encouraging work conditions that increase teacher's psychological empowerment and effect on their career satisfaction (Arnold *et al*., 2000). Main aim of our research is therefore to empirically test the relations between teacher's perceptions of school leader's empowering behaviors, psychological empowerment and career satisfaction. We will teste these two hypotheses in one structural model by using structural equation modeling (SEM).

2. Literature review

2.1. Teacher's perceptions of school leader's empowering behaviors

School leader's behavior is crucial component in creating effective work environment that influence teacher's behavior (Bass 1985). Past research has shown the most effective school leadership styles, but none of those make clear a fact which are the crucial segment of leader's behavior that empower workers. In the past decade the interest in researching linking between school leader's empowering behaviors and teacher's psychological empowerment becoming greater. Researchers are interested in how can school leader empower teachers with their own behavior (Lee & Nie, 2013). But it is not only school leader's empowering behavior that influence teacher's psychological empowerment, teacher's perception and interpretation of school leader's empowering behavior is crucial as well (Lee & Nie, 2014).

Arnold *et al.* (2000) develop a scale for evaluating the communal perception of school leader's organizational empowering behaviors, on the other hand

Konczak, Stelly & Trusty (2000) develop a scale for evaluating the individual perception of school leader's empowering. Mentioned authors found that empowering school leaders are regularly capable of fostering encouraging conditions that increase teacher's psychological empowerment and effect on greater work results.

Lee and Nie (2013) develop The School Leader Empowering Behaviors (SLEB) for measuring teacher's perceptions of school leader's empowering behaviors; it is composed of seven dimensions: delegation of authority, providing intellectual stimulation, giving acknowledgement and recognition, articulating a vision, fostering collaborative relationships, providing individualized concern and support and providing role-modeling. Therefore, it is essential for school leader to enhance awareness and capacity in exercising empowering behaviors towards their teachers to maximize their work potential (Lee & Nie, 2013).

2.2. Psychological empowerment

Empowerment is a process of strengthening individuals' feelings of their own effectiveness among other members of an organization (Conger & Kanungo, 1988). It can be defined as individual's internal or external process of feeling empowered (Shapira-Lishchinsky & Tsemach, 2014). Empowerment has been defined in several different perspectives: process approach, structural approach, and psychological approach (Quiñones, Van den Broeck & De Witte, 2013).

Advocates of the process approach define empowerment as the relationships between structural antecedents and resulting psychological states (Lee & Wei, 2011). Advocates of the structural approach see empowerment as a set of management practices and managers' behaviors that include the delegation of authority and responsibility to the employees (Lee & Wei, 2011). Advocates of the psychological approach contemplate empowerment as the psychological state of subordinates resulting from empowering practices at work (Spreitzer, 1995a).

Conger, Kanungo and Menon (2000) defined psychological empowerment as a motivation and as a process of individuals' perception of their own effectiveness in comparison to the other members in organization, together with a help of formal and informal procedures and techniques for

encouraging effectiveness. Psychological empowerment can be defined as an active motivational orientation with regard to individual's work role and individual's feeling of being in control at work (Boudrias, Morin & Lajoie, 2014). Psychological approach defined empowerment as four-dimensional construct of employees' perceptions (Spreitzer, 1995b): meaning (sense of meaningfulness that their work is important); competence (competence to perform their tasks well); self-determination (freedom to choose how they carry out their tasks) and impact (belief that their work has an impact on the effectiveness of the larger system).

2.3. Career satisfaction

Career satisfaction has a long-standing tradition in research (Gözükara & Çolakoğlu, 2016). It is a main concept in work psychology, and research on its determinants and outcomes is significant for the development of appropriate human resources management practices (Hauff, Richter & Tressin, 2015). Career satisfaction is defined as personal evaluation of individual's contentment with their career achievements (Judge *et al.*, 1995). It is an individual's perception and evaluation of a career, which is influenced by the individual's unique circumstances such as needs, values and expectations (Sempane, Rieger & Roodt, 2002).

Main predictors of career satisfaction are matter and societal subsistence together with environmental endorsement (Barnett & Bradley, 2007). In the past researchers relate teacher as passive individual who is influenced by situational determinants (Bell & Staw, 1989), therefore first of all they explore the impact of school leader's leading and behavior on teacher's career satisfaction. Opposing present researchers focus more on personal factors, such as psychological empowerment (Joo & Lim, 2013). These researchers show that teachers, who are more psychologically empowered, are more satisfied with their career.

Understanding career satisfaction is of great importance for two reasons: personally for teachers and for school leaders, because it affects teacher's productivity (Keles, 2015). Teachers who have high level career satisfaction have positive attitude towards their work (Robbins & Judge, 2015). Understanding of this perspective can help organizations to retain their employees (Westlund & Hannon, 2008). Teacher's career satisfaction also affects the health of their personal relationships outside of work environment (Chen *et al.*, 2015) and their self-evaluation (Wu & Griffin, 2012).

3. Research methodology

3.1. Hypotheses

Based on written above we formulated two hypotheses to determine relations between teacher's perceptions of school leader's empowering behaviors, psychological empowerment and career satisfaction, because studies have shown that there is positive connection between them (Joo & Lim, 2013; Lee & Nie, 2013). Proposed hypotheses were tested in the proposed model (Figure 1).

The hypotheses are:
H_1: *Teacher's perceptions of school leader's empowering behaviors are positively related to psychological empowerment.*
H_2: *Psychological empowerment is positively related to career satisfaction.*

3.2. Instruments

The School Leader Empowering Behaviors (SLEB) was used for measuring teacher's perceptions of school leader's empowering behaviors, developed by Lee and Nie (2013). The 21-item scale is composed of 7 dimensions: delegation of authority: (*e.g.*, "Principal gives me the authority to make changes necessary to improve things"), providing intellectual stimulation (*e.g.*, "Principal asks questions that prompt me to think"), giving acknowledgement and recognition (*e.g.*, "Principal always gives me positive feedback when I perform well"), articulating a vision (*e.g.*, "Principal paints an interesting picture of the future for our school"), fostering collaborative relationships (*e.g.*, "Principal fosters collaboration among staff members"), providing individualized concern and support (*e.g.*, "Principal treats me as an equal") and providing role-modeling (*e.g.*, "Principal works as hard as anyone in my school"). The response scale was a five-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). The coefficient of reliability (Cronbach's alpha) was 0.93, respectively.

Psychological Empowerment Questionnaire (PEQ) was used for measuring psychological empowerment developed by Spreitzer (1995b). The 12-item scale is composed of 4 dimensions: competence (*e.g.*, "I am confident about my ability to do my job"), self-determination (*e.g.*, "I have significant autonomy in determining how I do my job"), meaning (*e.g.*, "My job activities are

personally meaningful to me") and impact (*e.g.*, "I have significant influence over what happens in my department"). The response scale was a five-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). Evidence of the internal consistency of the psychological empowerment has been reported in numerous studies (Faulkner & Laschinger, 2008; Spreitzer, 1995). The coefficient of reliability (Cronbach's alpha) was 0.93, respectively.

Career Satisfaction Scale was used for measuring career satisfaction developed by Greenhaus, Parasuraman and Wormley (1990). Scale is composed of 5 items: (*e.g.*, "I am satisfied with the success I have achieved in my career"). The response scale was a five-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). Higher scores indicate the teacher's perception of being more satisfied with their career. The coefficient of reliability (Cronbach's alpha) was 0.93, respectively.

3.3. Research setting and participants

For the purpose of research, we conducted an online survey in May 2017, which was sent to all primary schools in Slovenia. Email addresses were selected from official internet site of Ministry of Education, Science and Sport, Slovenia. The survey was translated and presented to the participants in Slovenian language. The survey consisted from measure of teacher's perceptions of school leader's empowering behaviors, psychological empowerment, career satisfaction and demographics. The participants in the research were primary teachers from Slovenia. The full set of questionnaires was completed by a total of 525 teachers, of whom 40 (7.6%) were men and 485 (92.4%) were women. The average age of respondents was 44.7 years.

In average teachers have 19.9 years of work experience. According to the marital status, 336 (64.0%) were married, 109 (20.8%) were in relationship, 44 (8.4%) were single, 26 (5.0%) were divorced and 10 (1.9%) were widowed. According to the teachers' permanent accommodation by region 102 (19.4%) were from Osrednjeslovenska region, 92 (17.5%) were from Podravska region, 81 (15.4%) were from Gorenjska region, 50 (9.5%) were from South – east Slovenia, 49 (9.3%) were from Savinjska region, 36 (6.9%) were from Goriška region, 27 (5.1%) were from Obalno – kraška region, 19 (3.6%) were from Notranjsko-kraška region, 25 (4.8%) were from Koroška region, 17 (3.2%) were from Pomurska region, 15 (2.9%) were from Spodnjeposavska region and 12 (2.3%) were from Zasavska region.

4. Results

The empirical part of our research is based on quantitative research, for which the data was collected through our survey. The descriptive statistics for the variables of the teacher's perceptions of school leader's empowering behaviors, psychological empowerment and career satisfaction are presented in Table 1.

Table 1. *Descriptive statistics for the variables of school leader's empowering behaviors, psychological empowerment and career satisfaction*

	n		Mean	Standard deviation
	Valid	Missing		
School leader's empowering behaviors	525	0	3.82	0.79
Psychological empowerment	525	0	4.32	0.54
Career satisfaction	525	0	3.74	0.68

Source: Authors' research

In continuation, we present a method to test the model by applying structural equation modeling (SEM), which is used for testing structural relations between constructs.

That operation was made by building a model in Lisrel 8.80 software package, which is an analytical statistics program, which allows the testing of multiple structural relations at once (Prajogo & McDermott, 2005). It combines factor and regression analysis by which it tests the proposed model by which we can assess the significance of hypothesized cause-and-effect relations among the variables (Diamantopoulos & Siguaw, 2000).

The standardized solutions and t-values for the hypotheses tested in the model are presented in Figure 1.
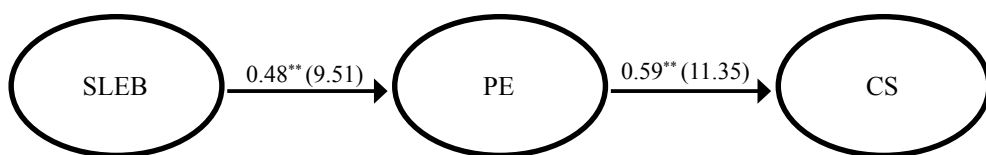
Figure 1. *Conceptual model with the standardized solutions (and t-test) for the hypotheses*

Notes: SLEB=school leader's empowering behaviors; PE=psychological empowerment; CS=career satisfaction

Source: Authors' research

Standardised solution weights between the teacher's perceptions of school leader's empowering behaviors, psychological empowerment and career satisfaction are presented in the model in Figure 1. We can therefore with the use of structural equation modeling confirm positive relations between the researched constructs in our hypotheses:

H_1: *Teacher's perceptions of school leader's empowering behaviors are positively related to psychological empowerment. (Standardized solution = 0.48, t-test = 9.51)*
H_2: *Psychological empowerment is positively related to career satisfaction. (Standardized solution = 0.59, t-test = 11.35).*

Based on the standardized solutions we found that the relations are positive. Table 2 presents model fit indices, reference values and model fit according to individual indices (Kenny, 2014) for our researched model.

Table 2. *Model fit indices*

Fit indices	Value for the model	Reference value*	Model fit according to individual indices *
x^2/df	8.46	≤ 2 or ≤ 5	Bad fit**
RMSEA	0.12	< 0.08	Bad fit**
NFI	0.92	≥ 0.90	Very good fit***
NNFI	0.93	≥ 0.95	Bad fit**
CFI	0.93	≥ 0.93	Very good fit***
IFI	0.93	≥ 0.95	Bad fit**
SRMR	0.08	< 0.08	Bad fit**

* Kenny, 2014.

** Problems with sample size (Sharma *et al.*, 2005; Iacobucci, 2010).

*** Williams & O'Boyle, 2011

Source: Authors' research

Whereas most of the model fit indices show a very good model fit, there are five indices which show a bad fit, which is a result of a smaller than recommended sample (Kenny, 2014). x^2 is troublesome in cases where the sample is too large or too small (Kenny, 2014) and almost always when used in such cases shows a bad model fit (Jöreskog & Sörbom, 1993); since there is no unilateral agreement on the marginal value that provides a good or bad model fit (Kenny 2014). The same problem arises when it comes to all indices which are derived from it (x^2/df, RMSEA and SRMR), since they are sensitive to sample size in can consequently lead to an unjustified rejection of the model (Sharma *et al.*, 2005). Model fit indices therefore confirm a good model fit and strong, positive and statistically significant relations.

5. Discussion and conclusion

Studies in the area of school leader's behavior have shown how teachers' perceptions of school leaders' empowering behaviors are linked with higher levels of psychological empowerment and career satisfaction (Joo & Lim, 2013; Lee & Nie, 2013), based on our research, we can add to these studies the effect on psychological empowerment together with career satisfaction. With proposed hypotheses, which were based upon previous research and in-depth study of relevant literature, we have tested the relations between teacher's perceptions of school leader's empowering behaviors, psychological empowerment and career satisfaction. Teacher's perceptions of school leader's empowering behaviors play an important role in adding to psychological empowerment together with career satisfaction, as we have found by testing our hypotheses.

Limitations of this study need to be considered before interpretations of the results can be explored. The whole research was focused mostly on how teacher's perceptions of school leader's empowering behaviors relates to psychological empowerment together with career satisfaction, whereas other determinants were not considered. As mentioned, teacher's perceptions of school leader's empowering behaviors are not the only determinant of psychological empowerment together with career satisfaction, therefore we can only propose that, teacher's perceptions of school leader's empowering behaviors in part affects the dimensions of teacher's psychological empowerment together with career satisfaction, whereas there are also other factors involved in the process.

The theoretical contribution of this study is to the existing research of teacher's perceptions of school leader's empowering behaviors and psychological empowerment together with career satisfaction in the aspect of advancing previous research by empirically examining the relations between both of them. The practical contribution is in the presented results that school leaders influence on teachers with their behavior.For further research, we suggest investigating the effects of the determinants omitted or to put in other words not included in our study.

These determinants could be divided into those influencing teachers besides their school leader's behavior, such as situational and other attributive determinants. Understanding the importance of school leader's empowering behaviors and psychological empowerment together with career satisfaction is of great importance for school leaders, because only empowering school leader is capable of fostering work conditions that increase teacher's psychological empowerment and career satisfaction (Lee & Nie, 2013).

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CAN THE ACADEMIC TRAINING INFLUENCE MORAL AND ETHICAL JUDGEMENT? A STUDY WITH UNIVERSITY STUDENTS OF ECONOMICS AND PSYCHOLOGY

MOŽE LI OBRAZOVANJE UTJECATI NA MORALNE I ETIČKE PROCJENE? SLUČAJ STUDENATA EKONOMIJE I PSIHOLOGIJE

Abstract

As recently observed in medical students, university education can lead to the paradoxical phenomenon of the regression of moral reasoning, an increase of

utilitarian and personalistic decisions and the "waste" of socially and culturally acceptable ideals.

The present experimental study aims at investigating possible differences in moral judgement between students of Economics at their first year and students at the end of university training. This population has been compared to a similar group of students of the School of Psychology. Also the weight of religiosity and gender has been taken into consideration.

Results show that gender and academic seniority can directly drive moral decision making, while the fact to be enrolled in different academic courses (i.e. Economics vs. Psychology) can probably only indirectly modulate this behavior. In fact, the analysis of type of answer (i.e. the evaluation concerning the appropriateness of the action depicted in each dilemma) showed that females are more inclined toward a claim of inappropriateness of moral scenarios than males. Moreover it has been seen that students in their 5th year tend to spend less time in reading dilemmas and thus they decide quickly to pass immediately to the answering phase. More specifically, it appeared that females and students of Economics showed to be the readiest to answer to the dilemma. Finally, with respect to the time spent in responding to dilemmas again students at the 5th year were faster to decide (and to answer) about the moral appropriateness of the scenario depicted in the dilemma. These results confirm some effects already known in the literature, and suggest some newly observed differences between samples under investigation. Some explanations to these phenomena will be put forward and discussed in a critical way.

Keywords: moral dilemmas, moral judgement, decision-making, university training

JEL: A12, A22

Sažetak

Kao što je nedavno primijećeno kod studenata medicine, univerzitetsko obrazovanje može dovesti do paradoksalnog fenomena regresije moralnog razmišljanja, povećanja utilitarnih i ličnih odluka i "otpada" socijalno i kulturološki prihvatljivih ideala.

Ova eksperimentalna studija ima za cilj istraživanje mogućih razlika u moralnoj procjeni između studenta ekonomije u prvoj godini i studenata na kraju njihovog univerzitetskog obrazovanja. Ova populacija je upoređena sa sličnom grupom studenata psihologije. Uzima se u obzir i faktor religioznosti i pola

Rezultati pokazuju da spol i akademska seniornost mogu direktno pokretati donošenje moralnih odluka, dok pohađanje različitih akademskih kurseve (npr. Ekonomija vs Psihologija) vjerovatno samo indirektno modulira ovo ponašanje. U stvari, analiza vrste odgovora (tj. procjena u vezi sa odgovarajućom akcijom koja je prikazana u svakoj dilemi) pokazala je da su žene sklonije ka tvrdnji o neprikladnosti moralnih

scenarija nego muškarci. Štaviše, vidjelo se da učenici u svojoj petoj godini imaju tendenciju da troše manje vremena u čitanju dilema i tako brzo odluče da odmah pređu u fazu odgovora. Preciznije, čini se da su žene i studenti ekonomije pokazali najveću spremnost da odgovore na dilemu. Konačno, u odnosu na vrijeme provedeno u reagovanju na dileme, studenti 5. godine brže su odlučili (i odgovorili) na moralnu prikladnost scenarija prikazanog u dilemi. Ovi rezultati potvrđuju neke efekte koji su već poznati u literaturi i predlažu neke nove posmatrane razlike između uzoraka pod istragom. Neka objašnjenja za ove pojave će biti predstavljena i diskutovana na kritičan način.

Ključne riječi: moralne dileme, moralni sud, odlučivanje, univerzitetska obuka

1. Introduction

Debates on the moral nature of man was the center of discussions among theologians, philosophers, and laymen for many centuries (Moll *et al*., 2008). This is not surprising since the fact that morality plays a central role in the constitution of human nature. People in fact can risk often material resources or even its own physical integrity to help and/or to punish perfect strangers. As stressed by Moll *et al*. (2008), this inclination can go far beyond the interpersonal sphere, because humans can engage in costly behaviors in order to support abstract causes, beliefs and ideologies also. This so-called "moral sensitivity" emerges from a sophisticated integration of cognitive, emotional and motivational mechanisms, internalized through an active process of cultural learning during sensitive periods of personal and individual development (Moll *et al*., 2002).

Defining morality is a difficult task, since any definition will suffer from limitations, especially when evaluated by scholars from different fields and with different cultural and teorethical background. Generally, one can define morality as the sets of customs and values that are embraced by a cultural group to guide social conduct (Moll *et al*., 2005).

Several psychological studies showed that our cognitive, emotional, social processes can be at least modulated by individual motivations and expectations. According to the cognitive-developmental approach based on Kolberg's ideas, the development of moral reasoning as critical period in late adolescence and young adulthood (Rest *et al*., 2000; King & Mayhew, 2002),

where educational experience can play an essential role and the majority of studies confirmed the positive association between moral reasoning and higher education (King & Mayhew, 2002; Pascarella & Terenzini, 2005).

Nonetheless this, in the years of university education, some paradoxical effects have recently been reported. In medical area, for example, university training can lead to the phenomenon of the regression of moral reasoning (Hren *et al*., 2011), an increase of utilitarian and personalistic decisions paralleled by the "waste" of socially and culturally acceptable ideals in the last compared to the first year of study. These effects have been further confirmed by some studies showing the decline of medical students' idealism, indicating that job security, student debt and social status increasingly outweigh idealistic motivations and that this effect can occur as early as the second year of medical education (Morley *et al*., 2013; Mader *et al*., 2014).

Again, when comparing goal contents and characteristics in medical and business students, social concern goals were greater in medical students, whereas wealth goals were stronger in business students, and these goal undoubtedly drive consequent choices and behaviors (Park *et al*. 2016). Marwell and Ames (1981) and later Carter and Irons (1991) come to similar results in relation to groups of students of Economics. The authors demonstrate that the behavior of students of economics is more selfish/greedy or less pro-social compared to other social groups. There are two possible interpretations of this: the first which assumes that those most selfish/greedy choose to study economics rather than classical philology or other subjects; the second, according to which an economics course makes students more selfish and greedy. Some measurements "before and after treatment" (*i.e.*, before and after a standard course in microeconomics) seem to support the latter interpretation based on a "learning morally harmful" (Orsini, 2006).

The main aim of the present study is to assess the moral sensitivity in university students of School of Economics compared to a matched sample of students of School of Psychology, to evaluate if people with interests in so different university training courses do present differences in moral behavior. Moreover, the research also takes into account the year of study: we aim at investigating the possible presence in these population of the phenomenon of the so-called 'regression of moral judgement', an event well described in medical students (Hren *et al*., 2011).

2. Methodology

2.1. Participants

Seventy-six students of Economics at Sapienza-University of Rome (38 at the first year of course and 38 at fifth year) voluntarily decided to participate to the study and were compared to a matched sample of students of Psychology at University of L'Aquila.

The sample of participants at the first year of Economics was composed by 13 males and 25 females (mean age 19.57±0.95 years) while that of Psychology counted 19 males and 19 females (mean age 20.15±1.34 years). The sample of participants at the fifth year of Economics was composed by 21 males and 17 females (mean age 25.92±1.34 years) while the group of Psychology was composed by 13 males and 25 females (mean age 24.95±2.62 years).

2.2. Procedure

Each participant, after being fully informed about the study' objectives, completed a customized software (SuperLab 4.1 for Windows, Cedrus Corporation) aimed at evaluating their behavior in a situation of moral decision-making. The task presented a set of different moral dilemmas originarily proposed by Greene and coworkers (Greene *et al*., 2004) and recently used and validated also in the Italian context (Migliore *et al.,* 2014). In each task trial participants were asked to answer to 20 moral personal, 20 moral impersonal and 20 non moral dilemmas, randomly administered by the SuperLab software. The moral personal dilemmas depict scenarios in which the participant behaves in a way that inflicts harm to other human beings by means of a his own explicit action: also if this action is aimed at good and positive purposes (*i.e.*, to save someone else), these dilemmas have an higher emotional involvement. The moral impersonal dilemmas depict scenarios in which the participants do not induce damages to others with his/her actions but behaves in a non politically correct way (*i.e.*, violating common and shared social rules): also these dilemmas have a relatively high emotional involvement. Finally, non moral dilemmas describe scenarios with a very low emotional involvement, since they do not violate neither moral rules nor standard of social cohabitation and cohesion.

Participants were asked to suggest whether the resolution of each dilemma was appropriate or inappropriate and the software recorded both the type of answer (appropriate vs. inappropriate) and the time needed to read the dilemmas (Reading time) and to respond to them (Answer time) measured in milliseconds. Type of answer, reading time and answer time were then submitted to statistical analyses. During the whole administration they were sitting in front of a PC screen of 17", in a sound-proof, temperature-controlled and quiet room.

2.3. Statistical analyses

Type of answer, time needed to read (Reading time) and to answer (Answer time) to the three types of dilemmas (Moral Personal, Moral Impersonal and Non Moral) measured in milliseconds were used as dependent variables and submitted to a Multivariate analysis of covariance (MANCOVA) considering as possible predictors level of Religiosity, Gender (Males Vs. Females), School (Economics Vs Psychology), Year (1st Vs. 5th). MANCOVA test was choosen because it allows to analyze data with more than one dependent variable and where it is mandatory controlling for some concomitant independent variables (the so-called "covariates").

3. Results

3.1. Type of answer

The MANCOVA indicated a main significant effect for Gender ($F_{3,140}$ = 3.58; p = .015) indicating a greater difference between males and females in the type of answer expressed, with females much more prone to claim about inappropriateness of those scenarios than males.

This effect was particularly evident and statistically significant for both Moral Impersonal (p=.009) and Moral Personal dilemmas (p=.0008), as depicted in Figure 1.

No other main effects or interactions did result statistically significant.
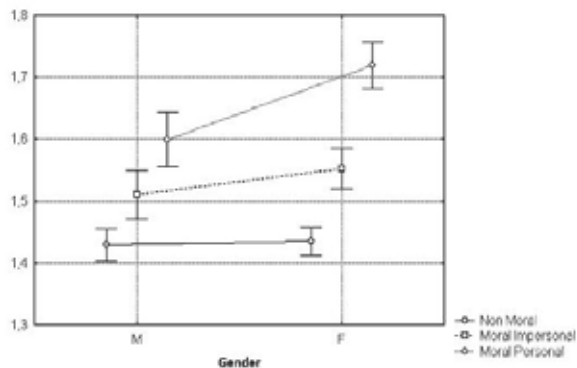
Figure 1. *Type of answer (mean values and standard deviation): gender differences in the answer to the three different types of dilemmas*

Source: Authors' research

3.2. Reading time

The MANCOVA on reading time indicated a main significant effect for Year of study ($F_{3,140}$ = 4.44; p = .005), indicating that students at the 5th year are faster to read dilemmas and to decide to go by to the answering phase. This effect was statistically relevant mainly for Moral Personal dilemmas (p = .04), as depicted in Figure 2. A trend toward the statistical significance was observed for Gender ($F_{3,140}$ = 2.44; p = .06), indicating that females tend to read for a shorter time the dilemmas compared to males. Finally, another trend toward the statistical significance was observed for School ($F_{3,140}$ = 2.01; p = .08), indicating that Economics students need less time to read the dilemma and to go to the answer phase. No other main effects or interactions did result statistically significant.
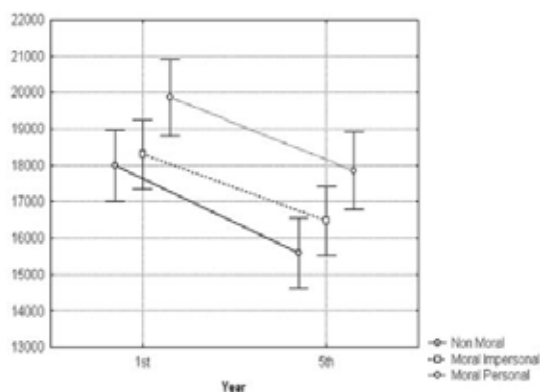
Figure 2. *Reading time (mean values and standard deviation): academic seniority differences in the time needed to read the three different types of dilemmas*

Source: Authors' research
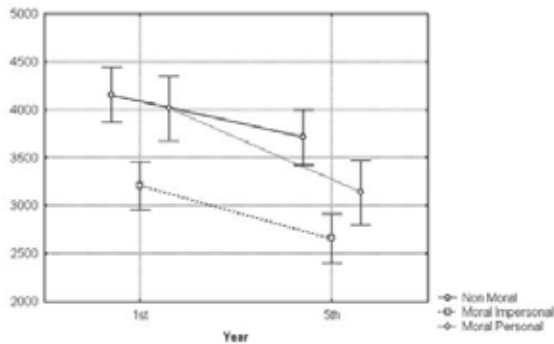
Figure 3. *Answer time (mean values and standard deviation): academic seniority differences in the time needed to respond to the three different types of dilemmas*

Source: Authors' research

3.3. Answer time

The MANCOVA on answer time indicated again a main significant effect for Year of study ($F_{3,140}$ = 5.15; p = .002), highlighting that independently by other variables, students at the 5th year are faster to decide if that scenario is morally acceptable or not. This effect was statistically relevant mainly for Moral Personal dilemmas (p = .02) and Moral Impersonal dilemmas (p = .04), as depicted in Figure 3. No other main effects or interactions did result statistically significant.

4. Discussion

The present study had as a main aim to assess the moral sensitivity in university students at School of Economics compared to a matched sample of students at School of Psychology, with the aim to test if different cultural interests can bring to different moral behavior. We investigated the role of age and of academic seniority, by comparing in the two groups students at first and fifth year of study: this was aimed at testing the hypothesis of the regression of moral judgement, an event well known and described in medical students (Hren *et al.*, 2011).

Present results indicate a generalized effect of gender and year of study, while type of study seems to arise only a small trend to statistical relevance.

More in depth, the analysis of type of answer showed a significant differences for gender, indicating a sharp difference between males and females in the type of answer expressed. Females, in fact, showed to be more predisposed toward a claim of inappropriateness of those scenarios than males.

Regarding the Reading Time, a significant effect for year of study has been observed. This effect indicated that students in their 5th year tend to spend less time in reading dilemmas and thus they decide quickly to pass immediately to the answering phase. This effect was very similar for all kind of dilemmas, even if a statistical significance was reached for Moral Personal ones. The analyses on Reading time also showed some statistical trends toward the significance: females showed a tendency to read for a less time the dilemmas with respect to males, and the same effect of shortening of time needed to read the dilemma was observed in Economics with respect to Psychology students. In both these cases, it seemed that females and students of Economics showed to be readier to answer to the dilemma requested.

Finally, with respect to the Answer Time, the only significant effect was again about year of study. Here data indicated that students at the 5th year are faster to decide about the moral appropriateness of the scenario depicted in the dilemma. Again, such an effect was more evident in both the types of Moral dilemmas compared to Non Moral ones.

These results confirm some effects already known in the literature, and suggest some newly observed differences between samples under investigation.

As a first, the progressive increase in time of response from Non Moral to Moral Impersonal and Personal dilemmas is consistent with previous literature (Greene *et al*. 2004; Migliore *et al*. 2014). Present findings may reflect a conflict between deontological rules and cognitive control of problem solving: processes of deciding and answering take a longer time in the moral vs. nonmoral conditions because the involved emotional status is much stronger and can intensify this conflict.

Secondly, we can identify an effect of academic "ageing": the students at the end of their university training are much more inclined to decide in an utilitarian way, reading and answering faster than younger students. Strikingly, this effect does not seem a general consequence of academic seniority, since it is emphasized in moral dilemmas compared to non moral ones, and in

personal compared to impersonal ones. This curious effect could be explained on the basis of difficulty to cognitively and emotionally manage situations such those depicted in moral dilemmas, in order to solve as soon as possible these very engaging requests.

This "carry on effect" was intimately linked to the trend toward a statistical difference seen when students of different schools are compared. Independently by the absence of statistical significance, the effect of shorter dilemma's reading times is clearly observable in Economics students with respect to Psychology ones. This result confirm previous data about the increased utilitarian and personalistic decision. As briefly discussed in the Introduction, some authors still claimed about the existence of a possible "behavioral fingerprint" of students in Economics (Marwell & Ames, 1981; Carter & Irons, 1991). The present study could be the first confirmation of the hypothesis that put forward and partially demonstrated in an Italian study (Orsini, 2006), according to which an economics course makes students more selfish and greedy, hypothesizing an educationally unfair learning in some training courses, such as Economics.

Finally, gender differences observed in this study deserve some remarks. Here females showed to be 1) faster in deciding what is morally appropriate and what is not, and 2) basically predisposed to judge as inappropriate the moral dilemmas. This finding supports the idea that females are less inclined to make utilitarian choices, maybe due to the fact that they could be mainly driven by emotions and empathy, following the so-called ethics of care, while males could tend to solve moral dilemmas following law and order rules, according to an "ethics of justice" (Gilligan 1982). Recently these results have also been confirmed in a different experimental situation by Capraro and Sippel (2017), who reported that women tend to embrace deontological ethics more than men, particularly in personal dilemmas, showing again the relevance of emotional salience in this kind of moral decision making.

The present study has some limitations like the limited sample size: a higher number of participants could have given the possibility to show other effects or interactions between factors under investigation. Another limitation is related to comparison between only two types of academic training: it would be interesting to include students of care professions, "hard" sciences, technical courses or "soft" sciences.

In conclusion, the present study shows that mainly gender and academic seniority can drive moral decision making, while the fact to be registered

to some academic training courses can probably indirectly modulate this behavior. Future studies need to be specifically designed to investigate more in depth these differences and to clarify the presence of possible psychological factors able to predict and/or modulate the complex behavior of decision making in case of moral dilemmas.

5. Conclusions

In conclusion, the present study shows that mainly gender and academic seniority can drive moral decision making, while the fact to be registered to some academic training courses can probably indirectly modulate this behavior. It would also seem that modulating moral decision-making mainly involves gender-related and seniority-related factors. Future studies need to be specifically designed to investigate more in depth these differences and to clarify the presence of possible psychological factors able to predict and/or modulate the complex behavior of decision making in case of moral dilemmas.

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HIGHER EDUCATION AND SOCIO-ECONOMIC INEQUALITIES IN SOUTH-EAST EUROPE: RESULTS OF EMPIRICAL RESEARCH

VISOKO OBRAZOVANJE I SOCIO-EKONOMSKE NEJEDNAKOSTI U JUGOISTOČNOJ EUROPI: REZULTATI EMPIRIJSKOG ISTRAŽIVANJA

Abstract

In this paper, authors analyze the potential relationships among the selected indicators of students' socio-economic status and their attitudes toward education, including the attitudes toward the selection of the institution of higher education (HE). In addition, different indicators, related to entrepreneurial experience and the family business ownership are considered, in order to establish the empirical differences in attitudes toward education among the groups of students with different entrepreneurial background.

Keywords: socio-economic inequalities, attitudes toward education, entrepreneurial background, South-East Europe

JEL: D63, I24

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Sažetak

U ovom se radu analizira potencijalna povezanost između izabranih pokazatelja socio-ekonomskog statusa studenata i njihovih stavova prema obrazovanju, uključivši i stavove o izboru institucije visokog obrazovanja. Također se u obzir uzimaju i pokazatelji koji ukazuju na osobno i obiteljsko poduzetništvo, kako bi se utvrdilo postoje li razlike u stavovima o obrazovanju između skupina studenata s različitim poduzetničkim iskustvom.

Ključne riječi: socio-ekonomske nejednakosti, stavovi prema obrazovanju, poduzetničko iskustvo, jugoistočna Europa

JEL: D63, I24

1. Introduction

At the individual level, education provides social mobility and better life chances through access to jobs, social institutions and services (Dragun & Relja, 2006, p. 64). In addition, the educational structure of the population is an indicator of the competitiveness of the state (Popović, 2017). As a problem of less developed countries, including the post-socialist ones in South-East Europe, the "brain drain" (migrations of highly educated individuals, due to the lack of coherence between education policies and the needs of national economies) is often highlighted. For such countries, losses are multifaceted: financial resources invested in migrants' education are most often irretrievably lost, while their leaving weakens human capital necessary for economic development (Bjelajac, 2007; Bejaković, 2008).

Pastuović (2012) points out that growth of social capital strengthens the human capital of a country, although it does not have to be the opposite. Namely, the development of the economy and the democracy, resulting in increased cooperation and trust in society, usually increases the educational level of the population and the investment in education (Bejaković, 2008). On the other hand, better education does not simply bring about the growth of trust, cooperation, democracy and the economy.

The latter scenario reflects the current situation in Croatia, manifesting itself within the study of the student population. The increase in the number of enrolled students in universities and highly educated persons does not result in the growth of the economy and social capital. Young people are aware of the usefulness

of education in terms of better employability, the achievement of financial independence and self-actualization. However, its limitations are quite clear, when personal contacts and political eligibility become important for social promotion (Gvozdanović, 2014, p. 110). Such a situation also leads toward the increased migrations of young people abroad, especially since Croatia has joined the European Union in 2013. For instance, in 2015, there were 30 000 individuals migrating from Croatia, which is three times higher than in 2010 (Croatian Bureau of Statistics, 2016).

In fact, young people are kind of a reflection of a society that socializes them. Their attitudes need to be listened to and explored in order to know what to expect in the future, adapting our planning to that insights (hence educational policy). Therefore, it is important to continually report on the ways students experience educational processes and the broader social context. Based on the results of such research, it is necessary to coordinate different policies with educational issues.

Recent studies show that students attach high value to professional development and getting a job (Ilišin, 2014), as well as their willingness to use various (il)legal means to achieve their goals (Relja *et al.*, 2011, p. 182). With the lacking self-actualization, most of them intend to migrate abroad, and such aspirations have been intensified after Croatia became part of the EU. They also show increasing dissatisfaction with the education system that does not ensure good chances on the labor market.

The outdated educational content can be further linked to the weak social utility of education. On the other hand, the lack of interest in strengthening the democratic capacity of society is empirically confirmed for Croatian youth (Ilišin & Kovačić, 2014, p. 305). All this is a reflection of the society, in which the role of the entrepreneurial background and the own entrepreneurial experience is to be empirically analyzed, as well, since previous research did not take those variables into account.

2. Research sample and methodology

The convenience sample of the empirical research is composed of 251 students at the undergraduate level, studying at Faculty of Economics and Faculty of Humanities and Social Sciences, at the University in Split, Croatia. The general demographics are as follows:

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- 197 (78.5%) respondents were students of the 1st and 2nd year of the undergraduate program at Faculty of Economics, 54 (21.5%) students of the 2nd year of the undergraduate program at Faculty of Humanities and Social Sciences;
- 30.4% of valid responses were from male and 69.6% from female respondents;
- All respondents did not wish to disclose their status, regarding the financing of their studies (12%): out of the received responses, 61.1% of students were supported by the national Ministry of Education and Science, 35.7% of respondents were full-time students, with their parents financing the cost of their tuition from private funds. Only 3.2% of respondents were part-time students, financing the cost of tuition by earned income.
- Approximately one-fourth (25.1%) of responding students are receiving grants and/or scholarships. Out of all respondents, 11.2% claimed the grant/scholarship received is based on academic performance and 15.5% cited their social status as a reason for financial assistance. Another 2.6% claimed there are other, legitimate reasons for the financial assistance received. The two questions produce somewhat different claims, as related to the number of respondents, receiving financial assistance, which could be attributed to their interpretation of the term "grant and/or scholarship".
- Only 7.6% of responding students belong to the top tier, according to academic performance (with the average grade of 5 – corresponding to the Anglo-Saxon grade of A). Majority of respondents earned the average grades of 3 (45.7% - corresponding to the grade of C) and 4 (43.5% - corresponding to the grade of B). The lowest tier, according to the academic performance (with the average grade of 2 – corresponding to the Anglo-Saxon grade of D), in our sample, consisted of 3.1% of respondents.

In this study, some of the socio-economic indicators, as well as indicators, related to benefits and limitations of higher education are adapted from Ilišin (2014). Results of this study are based on the representative samples of Croatian students from 1999, 2004 and 2010. Our intention was to compare the results to a sample of students, reported in this study.

3. Results of empirical research

Firstly, we analyze the perception of belonging to a social class. The social dimension of the student life in Croatia has already been empirically analyzed. Findings of a study, conducted on a national sample of students, in 2010, found that the majority of students' parents are highly educated, holding

positions of experts and managers, with above-average income (Potočnik, 2014). Therefore, it appears that higher education becomes less accessible to lower classes (Ilišin, 2014).

In this study, once all respondents who did not provide any answer, or explicitly refused to disclose their social status, were excluded from the sample, the valid percent has been calculated for the self-assessed social class. The majority of 86% believe they belonged to the middle class, while 6.5% claimed their social status could be described in the term of a higher class. 7.5% of responding students perceived themselves as belonging to a lower class. To check those claims, respondents were asked to assess financial problems, faced during their studies.

Once the respondents who did not provide any answers (or explicitly denied disclosure of the data) were excluded, the valid percent has been demonstrated that only 5.9% claimed they had difficulties with financing meals, although 7.7% could not afford books and other required literature, 8.4% did not have means to buy new clothing, 9.3% could not afford regular trips home (in case they are leaving home for study at the University of Split), while 11.7% could not cover the tuition and other obligatory costs of studying. 19.5% claimed they cannot finance going out with their friends, while one third could not afford any holidays whatsoever.

Similar results can be found in Potočnik (2014), based on representative sample of Croatian students, reporting insufficient funds to meet the needs that are usually not considered necessary, such as traveling or going out. However, one-tenth of respondents can be described as 'poor', since they find it difficult to finance regular meals and/or clothing and the standard bills.

The social status data were further analyzed by consolidating the reported financial problems during the studies, except for problems with financing costs of socializing and holiday trips, which could be considered as 'non-essential'. None of the 'essential' financial problems were faced by 84.4% respondents, only one by 7.8%, two by 3.5%, four by 0.7% and all five by 3.5%. Compared to the self-assessment of class belonging, it seems that *belonging to a lower class corresponds to facing at least one of the described 'essential' financial problems.*

The association between the two variables is confirmed by a statistically significant (at the 0.05 level), negative correlation of -0.338 between the number

of "essential" financial problems faced and the self-assessment of social status (measured by the rank-based, Pearson indicator of bivariate correlation). At the other hand, there is *no significant association between the award of grants/scholarship and the number of "essential" financial problems faced.* Students, perceiving themselves as belonging to a higher social class, also receive less grants/scholarships (as confirmed by the Pearson indicator of correlation, with the value of -0.156, being statistically significant at the 0.01 level).

The work and entrepreneurial experience is similar to the previous studies of student entrepreneurship in Croatia. While 58.3% of respondents did have a relevant work experience (regardless whether it is related to a summer/student job, or some other form of employment), as much as 18.8% had any kind of an entrepreneurial experience. There was a high level of bivariate correlation between the two forms of experience (with the Spearman coefficient value of 0.296 and p=0.01).

The obtained results are comparable to previous results by Alfirević, Umihanić & Rendulić (2015). In addition, a study on a sample of students of Faculty of Agriculture, at the University of Zagreb (Juračak & Tica, 2016), found that 21.8% of respondents had a regular job, while as much as 74.2% some form of work experience. This could be attributed to better opportunities for student employment in Zagreb, as compared to other parts of the country.

Nevertheless, 26.4% of students of agriculture did have a high level of previous entrepreneurial experience, which is, also, similar to results of this study. In our sample, 68.9% of respondents did have a personal knowledge of an entrepreneur and his/her entrepreneurial venture. Cross-tabulations were performed, as to check the statistical differences between the two schools, involved in the survey, by using the chi-square procedure. No significant association among the previous work and entrepreneurial experience, or the personal acquaintance to an entrepreneur has been established, in relation to studying at Faculty of Economics, vs. Faculty of Humanities and Social Sciences.

We also wanted to establish, if respondents were exposed to family business. In the entire sample, 37.7% of respondents had a family business background. Students, coming from entrepreneurial families, preferred to study business and economics, as confirmed by the significant difference, between the students of two analyzed schools, which has been determined by the chi-Square test ($\chi^2(1)$=5,511; p=0.019).

When the indicators of social and work/entrepreneurial status are correlated (once again, by using the "conservative", Spearman's rank-based bivariate indicator), there is no evidence of association between the perception of social class and work/entrepreneurial background. Nevertheless, "essential" financial problems are significantly associated with the work experience (Spearman's indicator value of 0.235 and p=0.01).

Attitudes toward education, included into the study, were related to a range of *potential general benefits, obtainable by higher education* (consisting of: contribution to a higher standard of living, social status, a higher capacity for problem-solving, personal development opportunities, achieving independence and obtaining employment).

In addition, a series of reverse-worded items were included into the study, suggesting the *irrelevance of higher education in the current social and economic circumstances* (due to: relevance of personal wealth and political/ social connections in the society, lack of work in the chosen profession, lack of status and the incoherence between the supply of higher education degrees and the actual labor market needs).[1]

The two item groups were clearly divided in the questionnaire, both visually and logically. All items were measured on a symmetric and equidistant Likert scale, with five levels of (dis)agreement with the previously described items.

The positively worded items (describing *general benefits of higher education*) have an average value, ranging from 3.23 (potentially obtaining a higher standard of living) to 3.75 (personal development). Attitude toward almost all of the items, describing the benefits of higher education, can be interpreted as neutral, except for the personal development, which is somewhat positive (see Table 1).

At the other hand, after recoding the reverse-worded items, describing *relevance of higher education,* their average values ranged from 1.89 (contribution to employment) to 2.28 (social status), expressing a slightly negative attitude toward higher education (see Table 1).

A bias toward the two similar item sets is clearly visible, which could be interpreted in terms of the socio-economic context: *students seem to be positive, or at least neutral, toward the education as a general social value/*

practice, but their attitudes become negative, once educational practice is viewed as an embedded part of the wider, socio-economic structure/context.

The results of the representative sample of Croatian students from 2010 are somewhat more favorable in terms of the general benefits of education, as well as obstacles preventing its affirmation through social mobility (Gvozdanović, 2014). The reason may be that the sample included a large number of students from Zagreb, which, as a Croatian capital, provides more opportunities.

Table 1. *Assessment of benefits and relevance of higher education*

Benefits of higher education (as contributing to)	Mean	Std. dev.	Relevance of higher education (as hindered by)	Mean	Std. dev.
...the higher living standard	3.23	1.271	...personal wealth and political/social connections	1.98	1.016
…social status	3.38	1.057	…lack of work	1.89	.895
…problem-solving skills	3.41	1.044	…lack of social status	2.28	1.017
…personal development	3.75	1.029	…incompatibility with the needs of the labor market	2.21	1.058
…achieving independence	3.46	1.078			
…obtaining employment	3.22	1.272			

Source: Empirical research

It was considered essential to test for the statistically significant influence of a range of potential factors, which could be considered as hypothetically relevant for the resulting attitudes toward the higher education. It is somewhat surprising that none of the previously described variables, except the academic performance, seems to matter, when it comes to students' differences in attitudes toward higher education.

Namely, the 'conservative', non-parametric Kruskall-Wallis test, considered to be the equivalent of the analysis of variance (ANOVA), has been performed for the following grouping variables: perception of social class, receiving grants/scholarships, the level of experiencing "essential" financial problems during studies, work or entrepreneurial experience, personal knowledge of an entrepreneur and family background experience. *None of those variables produced a single statistically significant difference among student groups, as related to their attitudes, relevant for higher education (HE).* The only significant grouping variable proved to be the academic performance (see Table 2).

Table 2 shows *the existence of significant differences among groups of students, according to their average grades.* It is interesting to note that the academic performance (grades) *influences only the general attitudes toward HE, but it does not make a difference, when it comes to the contextualized social view of HE.*

Although it could be expected that the higher grades are consistently associated with the higher level(s) of positive attitudes toward HE benefits, this is not confirmed.

It is rather interesting that students with average grades (3) consistently value the benefits of HE, than students with lower (2), as well as higher grades (4 and 5). This can be statistically confirmed by using the post-hoc pairwise comparisons, demonstrating the following significant differences:

- No significant differences showed up for the groups of students, defined by the academic performance, as related to their attitude toward HE as an enabler of a higher living standard;
- Groups of students, achieving average grades 3 and 5, differed significantly (p=0.05) in their attitude toward HE as a potential cause of social status;
- Groups of students, achieving average grades 3 and 4, differed significantly (p=0.012) in their attitude toward HE as contributing to problem-solving skills;
- Groups of students, achieving average grades 2 and 3 (p=0.021), as well as average grades 3 and 5 (p=0.023), differed significantly in their attitude toward HE as contributing to achieving independence;
- Groups of students, achieving average grades 3 and 5, differed significantly (p=0.041) in their attitude toward HE as contributing to obtaining employment.

Table 2. *Differences in attitudes toward higher education among student groups*

	HE as contributing to…						HE as hindered by…			
	…the higher living standard	…social status	…problem-solving skills	…personal development	…achieving independence	…obtaining employment	…personal wealth and political/social connections	…lack of work	…lack of social status	…incompatibility with the needs of the labor market
Chi-Square	8,507	13,110	12,341	6,298	15,550	8,521	,588	1,386	,333	2,722
Df	3	3	3	3	3	3	3	3	3	3
P	**.037**	**.004**	**.006**	.098	**.001**	**.036**	.899	.709	.954	.437

Source: Empirical research

Figure 1 illustrates the differences in mean ranks, obtained by the Kruskall-Wallis test, for the groups with different of levels of academic performance.

Criteria for students' evaluation of a HE institution/study were also measured on a symmetric and equidistant Likert scale, with five levels of (dis)agreement with the items, related to location/price of tuition and costs of study (and other contingency factors), as well as variables, related to the quality and attractiveness of a HE institution/program.

Some of the evaluation criteria, such as the encouragement of students to take an active role in quality assurance, are, definitely, influenced by the existing student experience, and cannot be easily assessed by first year students.

All other criteria, related to quality/social status of a HE institution/program are exceeded by the importance of convenience and costs of enrollment (with the highest mean score of 3.75).
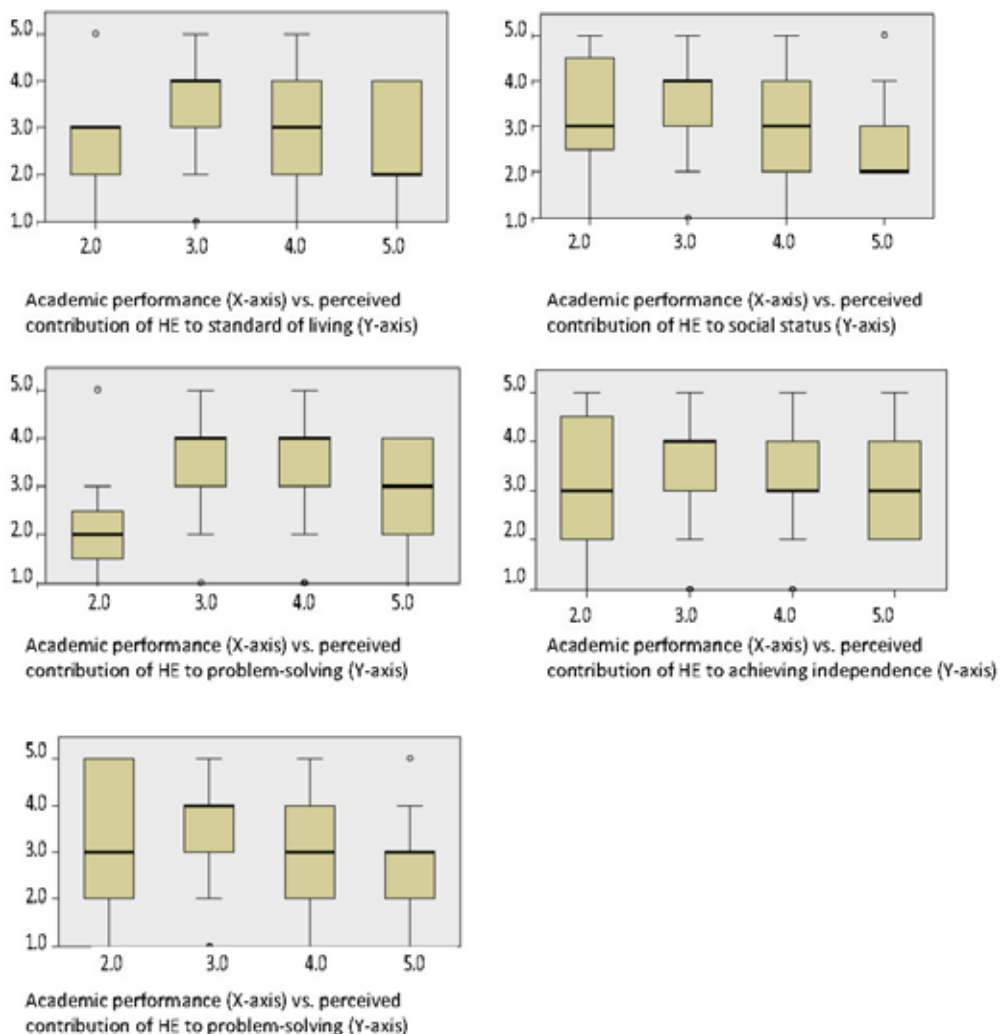
Figure 1. *Academic performance (grades) and attitudes toward
higher education (post hoc test results)*

Source: Empirical research

Table 3 describes the students' criteria for evaluation of HE programs and institutions.

Once again, significant differences in evaluation criteria, among students groups, defined according to socio-economic variables, show up for a single criterion (perceived overall quality of a HE institution/study).

Table 3. *Criteria for student evaluation of higher education programs and institutions*

	Mean	**Std. dev.**		**Mean**	**Std. dev.**
Location of an institution, costs of studying and other contingency factors	3.75	.845	Perceived over-all quality of a HE institution/ study	3.18	1.020
Obtained information on a HE institution/study	3.36	.976	Publicly available rankings of a HE institutions/study	3.69	.967
Obtained information on quality assurance at a HE institution/ study	3.56	.976	Perceived role of students in assurance of quality at a HE institution/study	3.91	.849

Source: Empirical research

This is demonstrated by Figure 2, summarizing the results of the Kruskall-Wallis test and the *post hoc* pairwise comparisons.

Academic performance (X-axis) vs. perceived overall quality of a HE institution/program (Y-axis): significant differences among groups of students with average grades 2 and 5 (p=0.036)

Academic performance (X-axis) vs. perceived overall quality of a HE institution/program (Y-axis): significant differences among groups of students according to grants/scholarships (p=0.045)

Academic performance (X-axis) vs. perceived overall quality of a HE institution/program (Y-axis): significant differences among groups of students, perceiving themselves as belonging to middle and higher classes (p=0.035).

Figure 2. *Academic performance (grades) and evaluation criteria (post-hoc test results)*

Source: Empirical research

It is somewhat peculiar that *the decreased academic performance is associated with the increase of interest for perceived overall academic quality (?!)*. The other findings, relating *receivers of grants/scholarships and the perception of belonging to higher social classes, to the increasing interest of academic quality,* can be easily interpreted. Even in this case, work and entrepreneurial experience, as well as the family entrepreneurial background do not seem to be relevant grouping factors.

4. Conclusion

There are virtually no differences in attitudes towards education with regard to selected socioeconomic indicators. In relation to the subjective and objective dimension of their social status (perception of social class belonging, facing the financial problems), students are mostly part of middle and higher classes.

By contrast, one-tenth can be considered as socially vulnerable. Our results are comparable with the previously described empirical research of the student population in Croatia. However, previous research did not cover students' entrepreneurial social background.

In this study, we did not establish that the students' (family) entrepreneurial background, or their own entrepreneurial experience serve as empirically significant predictors, when considering attitudes toward higher education.

Nevertheless, as education is perceived, with certain significance, as a source of social mobility, this could become one of major social problems in Croatia. Without further action from educational and social policies, young people will achieve their aspirations by migrating abroad, as previously mentioned in the theoretical part of this study.

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Endnote

1   For more information, see: (Ilišin, 2014).

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EFFICIENCY OF ENTREPRENEURIAL EDUCATION – PERCEPTION OF STUDENTS IN CROATIA

UČINKOVITOST PODUZETNIČKOG OBRAZOVANJA – PERCEPCIJA STUDENATA U HRVATSKOJ

Abstract

Countries in transition are characterized by relatively high rates of unemployment, a high amount of youth and highly educated among the active, but unemployed individuals. Similar to the developed countries, structure of business enterprises is dominated by micro, small and medium-size enterprise. There are, also, different projects of entrepreneurial education within the higher education sector. The topic of this paper is how the students perceive the practical value of available knowledge and skills, as related to the potential entrepreneurial activity, after finishing the education.
Authors analyze the entrepreneurial education from the aspects of the educational content and the methods of teaching. They also analyze students' perceptions, related to strengthening competences and skills, which can be associated to the entrepreneurial activity. The research has been conducted on a sample of the second year students. Its results show that the content and the approach of entrepreneurial education influence the positive perception of students, related to acquiring entrepreneurial competences and skills. The results can be useful for development of the entrepreneurial education system. They can be also used to initiate adequate measures of public support for educational institutions, as to develop a system of

entrepreneurial education. Finally, they are a part of a methodological framework for assessment of entrepreneurial education efficiency in the institutions of higher education.

Keywords: entrepreneurial education, entrepreneurial competences, Croatia, student entrepreneurship

JEL: L26

Sažetak

Zemlje u tranziciji obilježavaju relativno visoke stope nezaposlenosti, značajan udio mladih među nezaposlenim radno aktivnim stanovništvo, te visokoobrazovanih osoba. Slično razvijenim zemljama, u ukupnom broju aktivnih poslovnih subjekata prevladavaju mikro, mala i srednja poduzeća. Također, u sustavu obrazovanja posebno visokog, razvijeni su različiti programi poduzetničkog obrazovanja. Predmet istraživačkog interesa autora je percepcija studenata upotrebne vrijednosti dostupnih znanja i vještina u odnosu na moguću poduzetničku aktivnost nakon završetka obrazovanja.

Autori poduzetničko obrazovanje razmatraju s aspekta sadržaja i primijenjenih metoda prenošenja znanja. Također, analiziraju stavove studenata u odnosu na jačanje kompetencija, odnosno usvajanje vještina koje se povezuju s poduzetničkom aktivnošću općenito. Istraživanje je provedeno na uzorku studenata druge godine studija. Rezultati istraživanja pokazuju kako sadržaj i način poduzetničkog obrazovanja utječu na pozitivnu percepciju studenata u smislu stjecanja poduzetničkih kompetencija i vještina.

Rezultati istraživanja mogu biti korisni u smislu razvoja i unapređenja sustava poduzetničkog obrazovanja, posebno za poduzetništvo. Također mogu potaknuti razvoj odgovarajućih mjera javne potpore obrazovnim institucijama za razvoj cjelovitog sustava poduzetničkog obrazovanja. Konačno mogu se smatrati dijelom razvoja metodološkog okvira procjene efikasnosti sustava obrazovanja za i u poduzetništvu na visokoobrazovnim institucijama.

Ključne riječi: poduzetničko obrazovanje, poduzetničke kompetencije, Hrvatska, poduzetništvo studenata

JEL: L26

1. Introduction

The objective of this paper is to analyze the efficiency of entrepreneurial education, on a sample of students, who are either enrolled into the formal

program for higher education in the field of entrepreneurship, or have participated in a program, supporting the youth entrepreneurship. The objective for the empirical part of the paper is, specifically, to evaluate if the entrepreneurship courses/programs lead to the entrepreneurial competences. The empirical research has been carried out in two institutions of higher education in Croatia.

Unemployment, especially of the youth, is a significant problem in EU countries. According to recent data (Statista, 2017), countries with the highest youth unemployment rates are Greece (46.6%), Spain (38.6%), Italy (37%), including Croatia (28.4%). Youth unemployment is defined as unemployment of individuals, between 15 and 25 years old. Supporting entrepreneurial activity, at the level of individual national strategies and policies, is considered to be one of the approaches to solving this problem. The precondition for such a solution is related to public support of including youth into different forms of entrepreneurial education, in all stages of education. Different forms of knowledge transfer and taking over the risk of entrepreneurial activities can be supported, as well (World Economic Forum, 2015).

Supporting the entrepreneurial activities of youth is one of the objectives of the *Europe 2020* strategy (European Commission, 2010) It is also one of the areas, promoted by the *EU Youth Strategy (2019-2027)* (European Commission, 2018), while entrepreneurship is considered to be a key competence in the *European Reference Framework on Key Competencies for Lifelong Learning* (European Commission, 2006). In a special report, EU highlights the differences in the level of youth unemployment among the EU countries, as well as that learning, especially different forms of informal learning, can motivate the transformation of youth potential in acquiring knowledge, skills and values (European Commission, 2012). At all levels of educational systems, today, there are numerous programs, which can be associated to entrepreneurial education, when considering their content and the approach to knowledge and skill transfer. Kuratko (2009) mentions more than 1.6 thousand universities in the world, which have at least one program, related to entrepreneurship and emphasizes that this field has dramatically changes in the previous 35 years. Numerous formal and informal educational programs, related to entrepreneurship, show that knowledge and skills, useful to entrepreneurs, can be learned. In addition, development and availability of entrepreneurial education is as important as its content and the approach to knowledge and skill transfer.

2. Results of previous research

Research of the content and approach to education of individuals, who manage independent ventures, or prepare themselves to start such a venture, as well as research of educational efficiency, are limited. This is due to the unclear definitions of entrepreneurship and the entrepreneurial education themselves. Although comprehensive (and a growing) literature is available, related to entrepreneurial education, it covers mostly the institutional support (Saeed *et al.*, 2013); approaches to learning required knowledge and skills – in order to enhance the learning capacity and innovation, as significant determinants of entrepreneurial activity (Collins *et al.*, 2006; Pittaway & Cope, 2007; Vinten & Alcock, 2004); and educational programs, related to their content and the student population, involved in developing relevant skills, during the formal education (Heinonen, 2007; Heinonen & Poikkijoki, 2006).

Previous research has also shown the influence of entrepreneurial education and support to educational activities to developing attitudes toward developing the competences, required to manage independent business ventures (Hartshorn & Hannon, 2005). It is also important to develop predisposition toward self-employment, after finishing formal education, including any form of entrepreneurial education (Krueger & Brazeal, 1994).

Recently, research interest has concentrated on the analysis of efficiency of entrepreneurial education, especially in formal programs. Cox, Mueller and Moss (2002) suggest that students' satisfaction by such programs and the perception of its success can be indicators of effectiveness, for such a form of entrepreneurial education.

Peterman and Kennedy (2003) have analyzed the participation in entrepreneurial education programs and established that it is significantly associated with the perception of sustainability of the future independent venture. Therefore, it can be assumed that entrepreneurial education supports entrepreneurial orientation and intent among the student population.

Universities should develop and implement the evaluation of the potential entrepreneurship education programs' impact to the perception of the practical value, related to knowledge and skills for strengthening the entrepreneurial capacity (Kraaijenbrink *et al.*, 2010). A study, conducted on a sample of Malaysian students (Hj Din, Anuar & Usman, 2016), related to the topic of

the entrepreneurship education programs' efficiency, shows the association among entrepreneurial knowledge and skills in the fields of business planning, risk assessment and program efficiency. Additional association has been established, as related to the students' need for self-realization and their locus of control.

In the context of previous research results, it is important to define a group of indicators for assessment of efficiency of different forms of entrepreneurial education, including formal and informal ones. Results of such studies can assist in creating a relevant methodological framework for assessment of entrepreneurial education efficiency.

In addition, they should help to develop both the educational content and approach, as well as to compare efficiency of entrepreneurial education across time (in the form of longitudinal research) and different populations/ countries. This study is conducted on a student population at institutions of higher education, taking part in different programs of educational education.

Authors have analyzed the student attitudes, as related to the content and methods of entrepreneurial learning and the perception of educational effectiveness, as illustrated by the following conceptual research model.
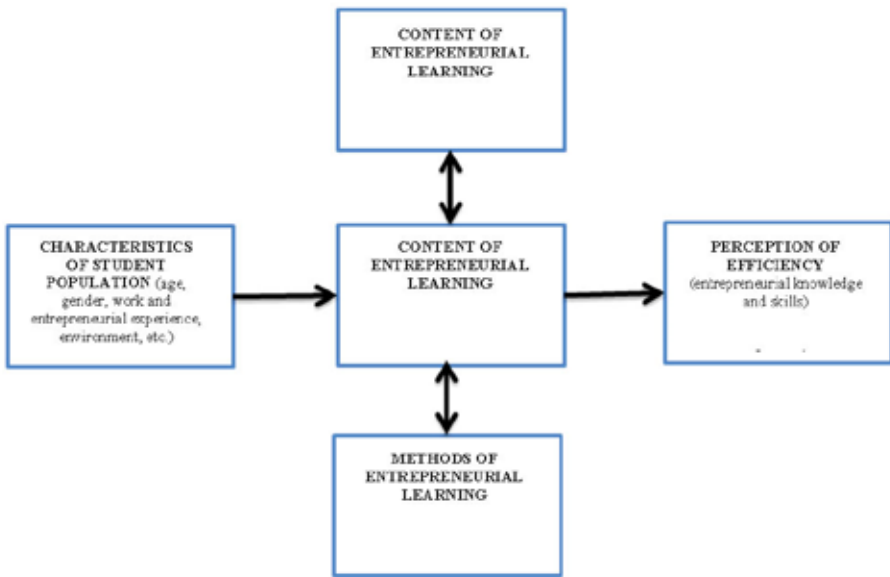
Figure 1. *Conceptual research model*

Source: Authors' research

3. Research methodology and sample

This study focuses on the *analysis of association between programs and methods of entrepreneurial education and the perception of entrepreneurial competences, as well as the potential entrepreneurial activity,* after finish the formal studies. The working hypotheses for this study are as follows:

- H_1: Students have a relatively low participation at the formal entrepreneurship study programs.
- H_2: There is only a limited efficiency of formal entrepreneurship study programs, in terms of creating entrepreneurial competences.
- H_3: There is a significant influence of informal entrepreneurship support mechanisms to the creation of entrepreneurial competences.

Empirical research has been conducted on two institutions of higher education in Croatia (Faculty of Economics Split and Faculty of applied sciences "Marko Marulić" Knin). There were 191 respondents, while the survey has been based on availability, *i.e.* the resulting sample is non-probabilistic. 84.3% of respondents study at Faculty of Economics Split and the remaining respondents are students of Faculty of applied sciences in Knin, which is balanced to the overall number of students at the two institutions. All respondents study the second year of the undergraduate (Split), or the professional program (Knin) in the field of business economics. More than a half of respondents are female (69.8%), while 68.6% have previous work experience (before starting their studies, or are engaged in work during the studies). Nevertheless, only 16.2% have ever been self-employed, but as much as 46.1% of respondents' family members had at least some experience with entrepreneurship.

4. Analysis of research results

At the two analyzed institutions of higher education, there have been different levels of supply and demand for formal programs of entrepreneurial education. There were four items, describing this indicator, measured on the binary scale (true/false). The four items were used to calculate (by summing up the item values) the indicators of supply and demand for formal entrepreneurial education (Table 1).

Table 1. *Mean values for indicators of formal entrepreneurial education supply and demand*

	Supply of formal entrepreneurial education	Usage of formal entrepreneurial education
N	190	187
Mean	**2.58**	**1.75**
Std. deviation	1.034	1.170
Minimum	0	0
Maximum	4	4

Source: Authors' research

The mean value of the supply indicator is 2.58 and 175 for the demand indicator, which implies that the formal entrepreneurial education is offered, but not matched by the students' interest. Reasons for such a situation can be found in the inadequate situation in the entrepreneurial environment and the economy. On the basis of the previously analyzed results, the first hypothesis (H_1) can be confirmed, since the supply of formal entrepreneurship programs is higher than the students' demand. There could be multiple reasons for such a situation, which need to be addressed by future research.

Different informal methods and approaches to entrepreneurial learning/education have been assessed (Table 2). Respondents' attitudes were measured by agreement on predetermined statements on a Likert scale, ranging from 1 (do not agree at all), to 5 (agree completely). Institutional support to students' entrepreneurial activity, which can be also considered as an informal entrepreneurial education, has been assessed as either neutral, or even negative. Neutral values have been assigned to items, measuring the encouragement of students to create their own businesses (3.27), organization of different seminars/workshops/events, organization of the mentoring system (3.08) and the climate, appropriate for the development of student entrepreneurship (3.21).

Table 2. *Institutional support to student entrepreneurship (informal entrepreneurial education)*

	N	Min.	Max.	Mean	Std. dev.
My educational institution encourages students to create their own businesses.	191	1	5	**3.27**	.910
My educational institution connected me to entrepreneurs and business practice.	191	1	5	2.74	.991
My educational institution connected me to local and national institutions, encouraging entrepreneurship.	191	1	5	2.62	.932
My educational institution connected me to commercial banks, investors and other potential investors.	191	1	5	2.46	.887
My educational institution organizes numerous seminars, workshops and special events for students, who wish to start own businesses.	190	1	5	**3.37**	.987
My educational institution has organized a mentoring system for students, who wish to start own businesses.	189	1	5	**3.08**	.928
My educational institution has the climate encouraging development of entrepreneurial ideas and independent businesses.	191	1	5	**3.21**	.934

Source: Authors' research

The mean values have been computed for the items, describing the students' perception of competencies, created by the programs and methods of entrepreneurial education (Table 3).

Table 3. *Students' assessment of acquired entrepreneurial competences*

	N	Min.	Max.	Mean	Std. dev.
My educational institution gives me needed knowledge and skills for recognition of businesses opportunities.	190	1	5	3.28	.831
My educational institution gives me needed knowledge and skills for assessment of sustainability and acceptance of a business opportunity.	191	1	5	3.34	.890
My educational institution gives me needed knowledge and skills for innovative thinking and problem-solving.	191	1	5	3.45	.910
My educational institution gives me needed knowledge and skills for businesses management.	191	1	5	3.28	.853

My educational institution gives me needed knowledge and skills for management of co-workers and teams.	189	1	5	3.35	.959
My educational institution gives me needed knowledge and skills for dealing with risk.	191	1	5	3.24	.930
My educational institution gives me needed knowledge and skills for creating new products and services, and their successful market launch.	190	1	5	3.28	.899
My educational institution gives me needed knowledge and skills for managing financial and other company resources.	190	1	5	3.23	.929
My educational institution gives me needed knowledge and skills for acquiring required capital.	191	1	5	3.06	1.014
My educational institution gives me needed knowledge and skills for market research and promotion.	191	1	5	3.27	.957

Source: Authors' research

The majority of respondents have a neutral attitude toward the perception of entrepreneurial competences, which include: recognition of business opportunities and their sustainability, entrepreneurial thinking, managing the business, its employees and the associated risk, as well. Analysis of correlations among the described variables shows that several statistically significant associations exist, as measured by the Pearson indicator of linear correlation (Table 4).

Table 4. Correlations among the research variables

		Supply of formal entrepreneurial education	Usage of formal entrepreneurial education	Support for student entrepreneurship (informal entr. educ.)	Entrepreneurial competences developed during studies	I intend to start my own business after finishing my studies	I intend to start my own business within 5 years, after finishing my studies	I intend to start my own business in the future, but still have not decided when
Supply of formal entrepreneurial education	Pearson Correlation	1	.263	.256	.153	-.053	.012	.001
	Sig. (2-tailed)		.000	.000	.038	.465	.868	.989
	N	190	187	187	185	190	189	189
Usage of formal entrepreneurial education	Pearson Correlation		1	.096	.121	.231	.144	.178
	Sig. (2-tailed)			.196	.102	.001	.050	.015
	N		187	184	182	187	186	186
Support for student entrepreneurship (informal entrep. education)	Pearson Correlation			1	.543	.124	.115	.109
	Sig. (2-tailed)				.000	.089	.115	.139
	N			188	184	188	188	187
Entrepreneurial competences developed during studies	Pearson Correlation				1	.259	.101	.146
	Sig. (2-tailed)					.000	.171	.047
	N				186	186	185	185
I intend to start my own business after finishing my studies	Pearson Correlation					1	.407	.307
	Sig. (2-tailed)						.000	.000
	N					191	190	190
I intend to start my own business within 5 years, after finishing my studies	Pearson Correlation						1	.575
	Sig. (2-tailed)							.000
	N						190	189
I intend to start my own business in the future, but still have not decided when	Pearson Correlation							1
	N							190

Source: Authors' research

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Significant, but weak correlations exist among the supply of formal entrepreneurial education and its usage, as well as informal forms of entrepreneurial support/education. A similar association exists between the usage of formal education and the students' entrepreneurial intent, but it is not clear why those students, who do wish to start their own business in the future, do not perceive the formal education as useful in creating entrepreneurial competences. This could be explained by the fact that they already feel as competent.

At the other hand, the many different forms of informal support and education for students as future entrepreneurs (Table 2) are perceived as leading toward entrepreneurial competences. It is important to note that the value of the Pearson indicator is the highest for all the analyzed variables. However, the usage of informal support and education is not associated to the intent to create the new businesses in the future.

The discussed results confirm the hypothesis H_2, since there is no statistically significant relationship between the formal entrepreneurial education and the entrepreneurial competences. In addition, the hypothesis H_3 is confirmed, since there is a statistically significant correlation between the informal support to entrepreneurship and the entrepreneurial competences. However, although the informal support to entrepreneurship influences entrepreneurial competences, it does not lead to the students' intent to create new businesses.

The lack of a relationship between informal support to entrepreneurship and the intent to create new businesses could be explained by the analysis of entrepreneurial barriers (Table 5). The majority of respondents believe that the intent of starting a new venture is influenced by the economic and political situation in the country, *i.e.* that it is not the right moment for the creation of a new venture. Students perceive the lack of capital and other investment resources as the second most significant entrepreneurial barrier, followed by different administrative barriers (Table 5). However, it should be noted that the perception of barriers has been measured on the Likert scale, with five levels of agreement, which makes the mean scores, slightly higher than three, for all the described barriers, only relatively modest perceptions of potential entrepreneurial problems.

Table 5. *Students' assessment of entrepreneurial barriers*

	N	Min.	Max.	Mean	Std. dev.
The largest obstacle for starting business for me is the lack of business ideas.	191	1	5	2.95	1.027
The largest obstacle for starting business for me is the lack of courage.	188	1	5	2.96	1.155
The largest obstacle for starting business for me is the lack of skills and knowledge.	190	1	5	2.94	1.099
The largest obstacle for starting business for me is the situation in politics and economy.	189	1	5	**3.59**	.944
The largest obstacle for starting business for me is the fear from being unsuccessful.	191	1	5	3.03	1.036
The largest obstacle for starting business for me is the lack of support from family and friends.	190	1	5	2.64	1.122
The largest obstacle for starting business for me is the lack of resources for investment.	187	1	5	**3.57**	1.015
The largest obstacle for starting business for me is the lack of sources for external investment.	191	1	5	**3.40**	.929
The largest obstacle for starting business for me is the lack of financial assistance (EU funds, *etc*.).	191	1	5	**3.29**	.886
The largest obstacle for starting business for me are the administrative barriers	191	1	5	**3.39**	1.118

Source: Authors' research

5. Discussion and conclusion

This paper analyzes the impact of formal and informal education and support to the entrepreneurial intent of students, as well as their perceptions of the created entrepreneurial competences. Although the sample is a non-probabilistic one and limited to only two institutions of higher education, the results could be indicative for policies, related to support of student entrepreneurship. Results show that the supply of formal entrepreneurial education is higher than the actual demand. At the other hand, respondents also seem to have modest interest for the informal education and support to student entrepreneurship. Out of those, they prefer specialized seminars, workshops and similar special events. Their perception of the entrepreneurial competences, acquired through entrepreneurial education is also neutral,

with grades around the value of three, on the Likert scale, with five levels of measurement. The highest grades are given to the education in innovative thinking and problem-solving, while acquiring finance (capital) has the lowest grade of all the entrepreneurial competences.

The analysis of correlations shows interesting results: it seems that those students, who use the formal entrepreneurial education, wish to start their own independent businesses, but do not feel that they have developed entrepreneurial competences. This could be caused by the fact that they already feel competent, although this should be further analyzed in further research. At the other hand, students using the informal education and support, have a feeling of developing entrepreneurial competences, but do not wish to start their own businesses in the future. This is not because of high entrepreneurial barriers, since their grade is around the value of three (neutral perception), as measured on the Likert scale, with five levels of measurement. There should be additional reasons, which could explain such a situation, to be analyzed in the future research of entrepreneurial education.

The final conclusion of our empirical research is in line with the previous research, which states that the perceived competences and self-efficacy of students are rather adequate, as well as linked to the students' intent to create new businesses (Alfirević, Peronja & Borovac Zekan, 2015).

However, the previous research did not analyze if the actual entrepreneurship support/education programs lead to the entrepreneurial competences and, further, to the entrepreneurial intent. This paper states there is a link between the informal entrepreneurship support/programs and the competences obtained, but that such a link is broken, when it comes to the competences, being transformed into the entrepreneurial intent. Taking into account the previous results, this could mean that only students, with the entrepreneurial personalities, as well as those from entrepreneurial families (Krneta, Najev Čačija & Alfirević, 2016), actually create new businesses.

As related to the current research, we believe that the existing approach to the entrepreneurial education is not effective enough and that is should be further improved. In future research, student population should be surveyed, to find out how the missing links between the formal entrepreneurial education and the entrepreneurial competences can be established, as well as how to motivate competent students to engage in creating new businesses.

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INFLUENCE OF DELEGATION OF AUTHORITY AS MANAGEMENT SKILL ON REACHING ORGANIZATIONAL GOALS

UTICAJ RAZVIJENOSTI DELEGIRANJA OVLASTI KAO MENADŽERSKE VJEŠTINE NA OSTVARIVANJE ORGANIZACIJSKIH CILJEVA

Abstract

Flexibility is crucial for successful organizational adjustment to contemporary business challenges. Development of decentralized structures with shallow hierarchy and higher levels of delegation of authority is a precondition for organizational flexibility. Furthermore, providing employees with broader authority and more responsibilities are key preconditions for achieving higher motivation and dedication of employees. Modern managers should act as mentors who strengthen and encourage their employees to be more self-efficient, which will have an ultimate effect on achieving organizational goals.
The main aim of this paper is to investigate the influence of delegation of authority as the managerial skill on the achievement of organizational goals. The current business practices indicate that a large number of companies in BiH have traditional structures and that a lack in good managers is one of the key factors of bad business performance by BiH companies. Therefore the research focused on examining managers' attitudes towards delegation of authority and its influence on achievement of organizational goals is important. The research was conducted in the

Coal Mine Banovići (RMU Banovići d.d. Banovići), a large mining company, based on a questionnaire survey distributed on a sample of 20% of managers at different management levels in this company.

The research results indicate that there is relatively high level of delegation of authority in this company and that this process has various implications on social atmosphere and quality of relations between managers and employees, which positively affects achievement of strategic and operative organizational goals. Future research in this field should be conducted on a larger sample of companies in order to establish more objective relations between delegation of authority and different aspects of processes in companies.

Keywords: management skills, organizational goals, delegating, BiH companies

JEL: L100, M100

Sažetak

Izgradnja fleksibilnosti jedan je od ključnih imperativa za uspješno prilagođavanje preduzeća savremenim izazovima poslovanja. Jedan od preduslova ove fleksibilnosti jeste i izgradnja decentraliziranih struktura sa plitkom hijerarhijom, koja podrazumijeva visok stepen delegiranja ovlasti. Pored toga, jedna od ključnih pretpostavki za postizanje većeg stepena motiviranosti i posvećenosti poslu visokokvalificiranih zaposlenika (na osnovu čijeg znanja, kompetencija i vještina preduzeća danas sve više grade svoju konkurentnost), jeste davanje im šireg opsega ovlasti i većeg stepena odgovornosti. Savremeni menadžeri bi, u skladu sa ovim novim tendencijama, trebali biti mentori koji će svoje podređene osnaživati i ohrabrivati, kako bi zaposlenici razvili osjećaj samoučinkovitosti, što bi se u konačnici pozitivno odrazilo na ostvarivanje organizacijskih ciljeva.

Cilj ovog rada upravo je istraživanje uticaja razvijenosti delegiranja ovlasti kao menadžerske vještine na ostvarivanje organizacijskih ciljeva. S obzirom da poslovna praksa pokazuje da je veliki broj preduzeća u BiH tradicionalno organiziran, te da je nedostatak kvalitetnih menadžera jedan od ključnih faktora lošeg poslovanja bh. preduzeća, od izuzetne je važnosti ispitivanje stavova menadžera po pitanju delegiranja ovlasti i analiza uticaja ovog procesa na ostvarivanje organizacijskih ciljeva u jednom od najvećih bh. preduzeća RMU Banovići d.d. Banovići, što je i u fokusu ovoga rada. Za potrebe primarnog istraživanja korišten je anketni upitnik, pri čemu je anketnim ispitivanjem obuhvaćeno 20% menadžera koji pripadaju različitim menadžerskim razinama u navedenom preduzeću.

Rezultati istraživanja pokazuju da postoji relativno visok stepen zastupljenosti delegiranja u posmatranom preduzeću, te da ovaj proces ima značajne implikacije na socijalnu atmosferu i kvalitet odnosa između menadžera i zaposlenika, što u konačnici pozitivno utiče i na ostvarivanje strateških i operativnih ciljeva. Budućim

istraživanjima na ovom području trebalo bi obuhvatiti veći broj bh. preduzeća, kako bi se objektivnije ustanovio stepen razvijenosti vještine delegiranja i njen uticaj na različite aspekte poslovanja ovih preduzeća.

Ključne riječi: menadžerske vještine, organizacijski ciljevi, delegiranje, bh. preduzeća

JEL: L100, M100

1. Introduction

Modern companies operate under rather dynamic and complex conditions. When this fact is considered, it is evident that these companies need to build a high level of flexibility so as to successfully adapt to the new challenges. One of the preconditions of the flexibility is to create decentralized structures with shallow hierarchy which includes a high level of delegation of authority. In addition, these modern organizations increasingly build their competitiveness on human resources, which is why their innovativeness, creativity and motivation become extremely important. The key preconditions for motivation and dedication of skilled employees, whose knowledge, competencies and skills and the basis for building company's competitiveness, is to provide them with broader authority and more responsibilities.

Delegation of authority includes the delegation of tasks and competencies to the subordinate employees who would be responsible for executing them. The ability to delegate the authority to the lower organizational levels is considered one of the most important skills in management (Sikavica & Bahtijarević-Šiber, 2001). Delegation is an important assumption for proper functioning of organizations, since the concentration of authority on organization's top level may be a bottleneck in making timely decisions. Although delegation of authority is a necessity, one should take care to whom authority and related tasks are delegated (Koontz & Weihrich, 1994). Delegation is the process of transferring authorization for making decisions but also partial authority from senior executives to lower executives/vertically/ and from executives to non-executives/horizontally/ (Petković *et al*., 2014). Dessler has defined it as "it is an authority transportation from high management to executives" (Dessler, 2006 in Al-Jammal, Al-Khasawneh & Hamadat, 2015, p. 52). By giving the authority to the wrong person, one can significantly empower the person (in the sense of giving too much power to the person) whose actions can be destructive for the organization. However, in no way should it be

the argument for abstaining from delegation of authority. When it comes to the person delegated with authority, several factors need to be taken into consideration and balance should be achieved between authority and responsibility (Sikavica & Bahtijarević-Šiber, 2001).

The very process of delegation can be difficult to implement due to those who should delegate but also those being delegated. As the delegation itself includes the transfer of authority as well as the transfer of a certain level of power, executives are not always willing to delegate certain tasks to their employees while on the other hand employees are reluctant to accept certain responsibilities without delegation of authority and are afraid that they might not accomplish the delegated tasks in accordance to executives' expectations. Delegation is simply giving task to employees with confidence that they would be able to perform them successfully, faithfully and responsibly. In the context of task delegation, it can be emphasized that every company has a one full task at company's level that includes a series of individual tasks. Hence we can say that delegation refers to giving small, practical tasks to employees responsible for performing them while the command responsibility still exists of the managers who are unlikely to delegate authority in practice.

As the Coal Mine "Banovići", shareholding company, has around 3,000 employees, it is evident that the implementing the strategy, realizing organization goals, performing and executing tasks cannot be done without a highly developed skill of the company's managers to delegate authority. With all this in mind, it seemed valid to conduct the research into the development of delegation of authority and its effect on the realization of the company's organizational goals. It is rather important to identify to what extent the company's managers are willing to delegate authority, what are the managers' attitudes in terms of centralization and decentralization in the organization (bearing in mind the fact that the Coal Mine Banovići, due to the nature of its business activity, has a functional organizational structure), and to what extent delegation of authority affects the realization of organizational goals at this company.

2. Literature review

As early as in the first half of the 20th century, weak spots of the tendency to keep organization authority on the top were observed in large industrial companies. Following strict rules and procedures, hierarchy, and top to bottom communication channels as the key organizational elements of the classical

organization theory (Taylor, Fayol, Weber, *etc*.) proved to be limitation factors not only for growth and development but the very existence of large industrial companies (Ford Motor Company for example). Classical organization theory also assumed that employees want to satisfy only their physiological needs at work. The neoclassical organizational theory (Mayo *et al*.) will later show that organizations are not only technical but also social systems. Employees want to satisfy other needs such as those for security, relations, respect, and self-actualization and consequently want broader authority that would enable them to satisfy those needs. A large number of authors (Baron & Besanko, 1992; Brown, 1998; Mookherjee, 2006; Martimort & Piccolo, 2007, 2009 in Ghumro, Mangi & Soomro, 2011, p. 671) take the general stand that centralized organizations are not adequate organizational forms for business activities under modern, hyper changeable and hyper competitive conditions.

The review of the literature that deals with the phenomenon of delegation of authority in modern organizations leads to the conclusion that some authors mainly focus on reasons why managers should delegate their authority (Liana, 1986, 1987; Yukl & Fu, 1998), while others analyze the effects of delegation of authority such as motivation, job satisfaction, organizational goals, and organizational performance (Farrow, Valencia & Bass, 1980; Liana, 1986, 1987; Schriesheim, Neider & Scandura, 1998 in Ghumro, Mangi & Soomro, 2011, p. 670).

A large number of authors who focus on delegation of authority address the factors that limit the success of delegation of authority. Williams (2010, p. 159) points out that these limitations can be grouped depending on whether they refer to the tasks themselves or to the characteristics of the persons delegating authority or those to whom authority is delegated.

The practice has showed that most of these limitations refer to managers' fears of losing their power through delegation and to managers' attitudes that employees are not competent enough to successfully carry out the delegated tasks (see Hunter, 2008; Wilson, 2010; Douglas, 1992 in Bell & Dusty & Bodie, 2012, p. 96).

3. Theoretical background and hypothesis

Power is the ability to achieve influence of one person on the behavior of other individuals in a group or an organization. It is the ability to convince

an individual or a group to do or change something in a certain way. The person who has the power is able to change other people's behavior, to manage and manipulate them (Petković, 2008.) It is evident that power is a social category that includes at least two participants in this relation. As the power holders in their organizations, aware of their formal position and frequently prone to stereotypes, managers often lack the awareness that authorized subordinates can me the key to success in the realization of strategies and organizational goals.

Concentration of power and authority in the hands of managers and their unwillingness to delegate authority may act as a serious destructive force in the organizational life. In line with the new tendencies, modern managers should act as mentors who strengthen and encourage their employees to be more self-efficient, professional and competent, which will have an ultimate effect on achieving organizational goals. Traditional, command-control role of manager now needs to be transformed into the role of coach and coordinator. There are three preconditions required for subordinates' self-efficiency: confidence that they are able to execute the task, confidence that they are able to invest the required effort, and confidence that no outer factors would prevent them from executing their tasks. All these preconditions of self-efficiency are significantly or almost fully affected by managers as the holders of powers in organizations. Delegation of authority can be seen as a managerial skill but it is also closely related to other managerial skills.

The advantages of delegation of authority from managers to subordinates are multiple and evident in the speed of decision making and task executing. This consequently results in timely realization of both tasks and organizational goals. Delegation of authority removes the burden from the strategic top of an organization and top management deals only with strategic issues. Efficient delegation affects the development of medium and operational level of management, which could later serve as the pool for recruiting general managers at an organization.

Bearing all this in mind, the question is imposed: to what extent the managers in Bosnia and Herzegovina behave in accordance to these recent tendencies. Since the business practice shows that a large number of companies in BiH have traditional organization and that a lack in high-quality managers is one of the key factors of bad business performance, it is extremely important to examine the attitudes of managers in terms of delegation of authority and to analyze the effects of this process on the realization of organizational goals

in one of the largest companies in BiH, the Coal Mine Banovići, which was in the focus of the paper. The general goal of the empirical research whose results are presented and interpreted in this paper is given as follows: *based on the scientific and empirical findings, the effect needs to be perceived of the implementation of delegation of authority in the realization of organization goals at the Coal Mine Banovići*. Building on the previously defined general research goal, the general research hypothesis is defined and postulated as follows: *the implementation of delegation of authority has a significant effect on the realization of organizational goals at the Coal Mine Banovići.*

4. Methodology of the empirical research

The survey method was applied during the field research (written inquiry method). A questionnaire was used as an instrument for data collection. The questionnaire was created in accordance to the content of the research and was distributed to 30% of the managers at different managerial levels at the Coal Mine Banovići. Descriptive and inferential statistics as well as correlation and regression analysis were used for data processing. The appropriate software solutions (IBM SPSS, MS Excel, *etc*.) were also used for data processing.

5. Results and discussion

Table 1 shows the results of the empirical research related to managers' attitudes regarding the presence of delegation of authority at the company that was in the focus of this research. The data indicate the highest level of agreement regarding the statement "*Employees' knowledge on business policy and organizational and strategic goals significantly affects the successful execution of delegated tasks, which positively reflects on the realization of organizational goals*" since the respondents "agreed" or "completely agreed" with this statement in 82% of the cases. The agreement in 72% of the respondents' answers was registered for the statement "*Managers have a high level of autonomy/freedom in assigning tasks, which positively affects the realization of organizational goals*". The agreement in 70% of the cases was identified for the statement "*There is a high level of cooperation and efficient execution of mutually delegated tasks among the managers at your company, which positively affects the realization of organizational goals*". By analyzing the presented research results, it can be concluded that in the observed company there is a relatively developed awareness on the importance of delegation of authority in the context of the realization of organizational goals.

Table 1. *Presence of delegation of authority*

Statements	I completely agree	I agree	I somewhat agree	I do not agree	I completely disagree
Managers often entrust the realization of tasks to employees, which positively affects the realization of organizational goals.	24.0	44.0	30.0	0.0	2.0
When entrusting the tasks to employees, managers give them the freedom to execute these tasks, which positively affects the realization of organizational goals.	14.0	54.0	30.0	2.0	0.0
Managers often show their willingness to accept their employees' ideas, which positively affects the realization of organizational goals.	28.0	40.0	28.0	2.0	2.0
Managers show their willingness to take the risk for potential mistakes in the execution of tasks entrusted to employees, which positively affects the realization of organizational goals.	14.0	52.0	22.0	12.0	0.0
Managers often delegate the tasks to employees not directly subordinated to them, which positively affects the realization of organizational goals.	10.2	16.3	51.0	20.4	2.0
Employees must strictly follow internal rules and procedures, defined by the delegation process, which positively affects the realization of organizational goals.	26.0	42.0	20.0	12.0	0.0
Managers have a high level of autonomy/freedom in delegating tasks, which positively affects the realization of organizational goals.	14.0	58.0	22.0	4.0	2.0
The existing structure of work places facilitates the execution of delegated tasks, which positively affects the realization of organizational goals.	14.0	30.0	48.0	8.0	0.0
The characteristic of your company is the possibility for delegating authority to the holders of power at other organizational units, which is in the function of the realization of organizational goals.	14.0	42.0	26.0	18.0	0.0
Employees have full access to all the information necessary for the execution of delegated tasks, regardless of the organizational unit they belong to, which positively affects the realization of organizational goals.	16.0	40.0	30.0	14.0	0.0
The characteristic of your company is a high level of identification of personal and organizational goals and employees gladly execute delegated tasks, which positively affects the realization of organizational goals.	14.0	52.0	26.0	8.0	0.0

Employees' knowledge on business policy and organizational and strategic goals significantly affects the successful execution of organizational goals, which positively affects the realization of organizational goals.	32.0	50.0	14.0	4.0	0.0
The characteristic of your company is a high level of cooperation and efficient execution of mutually delegated tasks among managers, which positively affects the realization of organizational goals.	28.0	42.0	26.0	4.0	0.0
Delegation of authority gives managers time for strategically important activities, which positively affects the realization of organizational goals.	24.0	48.0	16.0	10.0	2.0
The characteristic of your company is that managers have prejudices about subordinates not being able to execute delegated tasks on their own, which negatively affects the realization of organizational goals.	8.0	22.0	22.0	44.0	4.0
The characteristic of your company is that tasks are delegated to employees based on their knowledge and competences (delegation outside the formal hierarchy), which positively affects the realization of organizational goals.	10.0	34.0	46.0	10.0	0.0
The characteristic of your company is that authority is transferred down the organizational hierarchy, from top management, over medium management to operational management, which positively affects the realization of organizational goals.	20.0	62.0	14.0	4.0	0.0
The characteristic of your company is selective delegation to certain organizational units and services within organization, which positively affects the realization of organizational goals	6.0	50.0	40.0	4.0	0.0
The characteristic of your company is delegation on the same organizational level, which positively affects the realization of organizational goals.	4.0	46.0	36.0	14.0	0.0
The characteristic of your company is delegation of authority to employees for decision making, which positively affects the realization of organizational goals.	4.0	36.0	44.0	16.0	0.0

Source: Authors' research

Table 2. *Delegation, organizational goals, motivation, and social atmosphere*

	Average score	Standard deviation	Minimum	Maximum
Delegation	3.63	0.49	2.15	4.85
Organizational goals	4.10	0.47	2.78	5.00
Motivation	3.80	0.62	2.33	5.00
Social atmosphere	3.80	0.63	2.40	5.00

Source: Authors' research

Table 2 gives the summarized results related to the following: the presence of delegation at the observed company (the mean 3.63), the influence of delegation on the realization of organizational goals (the mean 4.10), the influence of delegation on employees' motivation (the mean 3.80) and the influence of delegation on the social atmosphere (the mean 3.80) with the corresponding standard deviation values. It is evident that the highest level of agreement was registered regarding the influence of delegation on the realization of organizational goals, although a relatively significant level of agreement was registered for the statements that delegation of authority positively affects motivation and social atmosphere at work.

6. Concluding remarks

When contemporary business conditions are taken into consideration, it is evident that every organization should have the managers that are sufficiently aware of the importance of delegation of authority. On the other hand, it is necessary to develop among employees the awareness of delegation of authority and of their participation in decision making and goal setting, as that is the only way in which the companies under contemporary business conditions can achieve their competitiveness on the global market. By delegating tasks, manager transfers to an employee full authority over budget, resources, and personnel needed for the completion of the task. In order to effectively execute their tasks, subordinates need to have access to the same tools and information that would be given to managers for the same task. In other words, in order for delegation to give good results, delegated authority needs to be in proportion to the delegated responsibility. The paper analyzed the level of awareness about the importance of delegation of authority in the context of the realization of organizational goals at the Coal Mine Banovići.

The paper also evaluated the effect of delegating authority on organizational goals, employees' motivation, and the social atmosphere at their work place. The research results show the presence of delegation of authority at the Coal Mine Banovići and that it, in accordance to managers' attitudes, significantly contributes to the realization of organizational goals. Hence, it can be stated that the postulated research hypothesis is accepted. In addition, delegation of authority, with relative significance, affects motivation and social atmosphere at work, which also positively influences the realization of organizational goals.

When analyzing the results, certain limitations of the empirical research need to be taken into consideration: 1) The research included 30% of the managers. Although the questionnaires were filled in by the managers of all organizational levels, all organizational departments, different education levels and different gender, a broader sample would be more representative and the results would be more valid and complete; 2) The lack of past research in the field of delegation of authority at the companies in the mining industry prevented the comparison of research results and deeper critical analysis; 3) The research was conducted at the Coal Mine Banović and it did not include other mines in Bosnia and Herzegovina, which limits the generalization of conclusions. Prospective research in this field should focus on compiling the knowledge related to the effect of delegation of authority on the realization of organizational goals in the companies in the mining industry. When conducting future empirical research, the authors should take into consideration the limitations of this research.

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IMPACT OF THE IMPLEMENTATION OF THE "MARKET NICHE" STRATEGY ON THE DEVELOPMENT OF THE ENTREPRENEURIAL INFRASTRUCTURE OF LOCAL COMMUNITIES

UTICAJ IMPLEMENTACIJE STRATEGIJE "TRŽIŠNE NIŠE" NA RAZVOJ PREDUZETNIČKE INFRASTRUKTURE LOKALNIH ZAJEDNICA

Abstract

Local community development depends directly on a range of internal and external factors, which interact creating the infrastructure necessary for the local economic development. The lack of strategic orientation of a national economy leads to a paradox in which the local communities develop separately. This is reflected in the decline of qualitative and quantitative performance of development which, in a distinct manner, obstructing economic activity. Local communities have made a step forward in the creation of conditions necessary to observe as best practice.
The aim of this paper is to show an example of best practice of local development. Taking into account the requirements of the local community, the highest levels of government in Bosnia and Herzegovina should create presumption for the improvement of conditions for the development of business infrastructure, according to review the methodology of the World Bank.

Keywords: local economic development, entrepreneurial infrastructure, competitiveness, national economy

JEL: M20, M21

Sažetak

Razvoj lokalne zajednice u direktnoj je ovisnosti o nizu internih i eksternih faktora čije sadejstvo stvara infrastrukturu neophodnu za lokalni ekonomski razvoj. Izostanak strategijskih opredjeljenja jedne nacionalne ekonomije dovodi do paradoksa u kojem se lokalne zajednice razvijaju separatno. To se odražava na pad kvalitativnih i kvantitativnih performansi razvoja čime se, na izrazit način, guši ekonomska aktivnost. Lokalne zajednice koje su načinile iskorak u stvaranju pretpostavki potrebno je posmatrati kao najbolju praksu.
Cilj ovog rada je pokazati primjer najboljih praksi lokalnog razvoja. Uvažavajući zahtjeve lokalne zajednice, najviši nivoi vlasti u Bosni i Hercegovini trebalo bi da stvaraju pretpostavke za poboljšanje uslova za razvoj preduzetničke infrastrukture prema dostupnoj metodologiji World Bank.

Ključne riječi: lokalni ekonomski razvoj, preduzetnička infrastruktura, konkurentnost, nacionalna ekonomija

JEL: M20, M21

1. Introduction

Small and Medium Enterprises (SMEs) are the main bearer of the development of the economies of developed countries, especially the European Union (EU) countries. They are important drivers of innovation, new ideas, technical progress, employment, and the realization of wider social goals. The European Charter for Small Enterprises, which is mandatory for all EU member states, candidate countries for membership of the European Union and Western Balkan countries, points out ten areas of importance for improving the business environment for small businesses, related to law reform, access to finances, business representation, entrepreneurship education, competitiveness, *etc*.

The subject of research belongs to the narrower scientific field of entrepreneurial economics. Empirical research will be conducted on a representative sample of companies in Bosnia and Herzegovina (BiH). We will research whether we can contribute with the market niche strategy that small and medium sized enterprises in BiH can achieve a certain growth and development through employment, increased revenues and profits through the penetration to the foreign markets with specialized services, products and knowledge and can

their specialized and specific services, products and knowledge replace or reduce imports into BiH so they can stay in the market game.

The company works by aligning its internal capabilities with market chances. The market in which it operates is continually changing, so these changes require the company's reaction. Through its sales assortment of goods and services, the company adjusts to emerging new market situations that are irreversible or reversible. The inability to adapt to the market by returning to the situation before, is a characteristic of enterprise development. Under the development of entrepreneurial infrastructure, it is understood the process of moving the enterprise from the existing to the new state. It is expected that the new situation will be more efficient and that the company will undergo many changes in all areas of business.

2. An overview of current research

The basic task of the overall research project within this paper is to determine that using the modified entrepreneurial strategy of the market niche affects the development of local communities. Looking at the question of why small businesses are important in developed countries, perhaps the best way to explain this is to indicate their frequency contributes to economic well-being, such as employment and income. The table below gives a more detailed distribution of employment by enterprise size.

In an attempt to give adequate answers to the basic research task in this paper, numerous researches (for example, research conducted by Audretsch and Thurik in 2004, Audretsch and Thurik from 2001, Piore and Sabel in 1984, Archibugi and Iammarino from 1997, Audretsch and Keilbach in 2005 and Asheim and Gertler in 2005) whose applicative recourse had a significant impact on the modification of entrepreneurial strategies and the development of entrepreneurial infrastructure.

Numerous researches confirm the close link between the application of different entrepreneurial strategies and the development of entrepreneurial structure.

However, the relationship between the niche market strategy in the development of entrepreneurial infrastructure of local communities has not been studied so far. Thus, the research carried out by Audretsch and Thurik (2004) Audretsch

and Thurik (2001) are confirming the impact of the entrepreneurial strategy on improving the competitiveness of the economy. In the first research the focus was placed on the classic division of the strategy, while the second focus was on the indicators of company competitiveness. The researches carried out by Piore and Sabel (1984) Archibugi and Iammarino (1997) confirms the impact of the entrepreneurial strategy on business environment development. In the first study, the focus was placed on a cognitive model of entrepreneurial reflection, while the second focus was placed on the ideal model of entrepreneurship infrastructure.

The researches carried out by Audretsch and Keilbach (2005) Asheim and Gertler (2005) confirms the impact of entrepreneurial strategies on business succession planning. In the first research, the focus was placed on the model of optimization of the ownership structure, while the second focus was placed on the intensity of fragmentation of the ownership structure. In the presented research, the focus was placed on the taxonomy of entrepreneurial strategies towards Drucker (1985, p. 13), which implies the need to approach the research how the application of the modified entrepreneurial niche market strategy affects the development of local communities.

Thus, in the presented researches, the local infrastructure of the hotel industry has been neglected, which is the backbone of growth and development of hotel companies in the long and short term, based on the presented research.

Previous research in this area has not given significant attention to the development of entrepreneurial infrastructure. It is important to mention several documents of strategic character:
■ Strategy for Development of Small and Medium Enterprises in Bosnia and Herzegovina 2009-2011;
■ The Economic Development Strategy of the Federation of Bosnia and Herzegovina 2010-2020;
■ State of development and proposal of measures for growth and development of MSA in the Federation of Bosnia and Herzegovina 2007-2010;
■ Project Development of Small and Medium-sized Entrepreneurship in the Federation of Bosnia and Herzegovina 2009-2012;
■ Small and Medium Enterprises Development Strategy in Republic of Srpska, 2006-2010;
■ Development Strategy of Brcko District Small and Medium Enterprises, 2008-2010;

- Bosnia and Herzegovina Development Strategy 2008-2013;
- Social Inclusion Strategy of BiH 2008-2013.

In addition to the Basic Strategic Document for SME Development in BiH Strategy for the Development of Small and Medium Enterprises in Bosnia and Herzegovina 2009-2011 and entities of the Federation of Bosnia and Herzegovina (FBiH), Republika Srpska and Brcko District have adopted their own strategic frameworks for the development of small and medium-sized enterprises. It should be noted that Republika Srpska is the most advanced by establishing a Department for Small and Medium Enterprises within the Ministry of Industry, Energy and Mining (Ministry of Industry, Energy and Mining of the Republic of Srpska) and elaborating policies targeted at small and medium enterprises.

SMEs, along with investment, restructuring and privatization, have a significant impact on the economic development of BiH and contribute significantly to the dynamic transition process of the country and create a condition for BiH to become an EU member. The results of the research by EUROSTAT studies and institutions show that the share of small and medium-sized enterprises in the European Union is 99%. Similar to us in BiH.

The importance of SMEs in the development of BiH can certainly and should be greater. Bearing in mind the importance of small and medium-sized enterprises in the structure of the economy of BiH with the right strategy, development policy, legal and by-law frameworks, and the support of all necessary structures in BiH, small and medium-sized enterprises can not only have a significant market share in BiH, but gradually to conquer the markets, primarily in the region, and then beyond, can be respectable partners to large domestic and foreign companies, thereby contributing to new investments and job creation.

We will also discuss how and in what way, with which strategy SMEs in BiH can realize growth and development, competitiveness, substitute imports and embark on enhanced exports, in a narrower field of market and production, market niches. An entrepreneurial strategy for living on a general, segmented or narrowly defined market requires a defined business environment.

It is not necessary, but it is very desirable that this business environment is positive and successful, it is important that it is properly and fully understood and

defined from all aspects necessary for good positioning and business decision making. Accessing the modification is possible by deduction and induction, but it is essential in any variation to have a realistic and complete view of the business environment, our own potential and weakness, as well as the ultimate and complete definition of the business goal that we want to achieve through a modified or implemented business niche strategy within our business.

The political system in the EU countries is very clearly defined and its role in the creation and implementation of a legislative infrastructure that regulates and protects the business environment is defined. Very decisive, but very powerful are the systems of control, protection, stimulus and financial support to the business environment, which is also an integral part and very often the most important part of the existential and political system of a state and of the communities of those states. In an equitable business environment and well-regulated social and political system, the BiH niche market would have an exceptional chance for healthy business, entrepreneurship and competitive offer while retaining significant profitability.

3. Methodology

3.1. Description of the research

In order to be able to form micro, small and medium-sized enterprises as well as to carry out the necessary analyzes, it is necessary first to define the terms of micro, small and medium enterprises. In the European Union (EU), for a long time, it was considered that small enterprises are enterprises with up to 100 employees, as well as in the United States. The definition of micro, small and medium-sized enterprises according to EU standards is very clear and it is based on the recommendation of the European Commission of 6 May 2003, which entered into force on January 1, 2005 (Law on support to SMEs, "Official Gazette of Republic of Srpska" No: 50/2013; 56/2013 – rev.).

The European Commission has decided to change, ie modernize the definition of small and medium-sized enterprises to promote the growth and development of entrepreneurship, investment and innovation. In developed countries, instead of termed Small Enterprise, the term Small and Medium Enterprise is used. For a company to be recognized as a small or medium must meet two conditions (Law on support to SMEs, "Official Gazette of Republic of Srpska" No. 50/2013; 56/2013 – rev.):

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- Condition of the number of employees - the number of employees in the enterprise must move within the given limits;
- One of the two financial indicators:
- Total annual income must be less than or equal to the allowable,
- The total assets/liabilities must be less than or equal to the allowable amount.

The individual conditions for each group of companies are as follows (Law on support to SMEs, "Official Gazette of Republic of Srpska" No: 50/2013; 56/2013 – rev.):
- *Micro enterprises*. These companies must have less than 10 employees. Micro companies should not have a total annual income of more than BAM 2,000,000 or an asset/liability greater than a BAM 1,000,000;
- *Small companies*. These companies must have less than 50 employees. Small companies should not have a total annual income greater than BAM 2,000,000 or an asset/liability greater than a BAM 1,000,000;
- *Medium enterprises*. These companies must have between 50 and 250 employees. A medium-sized enterprise may not have a total annual income less than BAM 2,000,000 or more than BAM 8,000,000 or an asset/liability greater than BAM 4,000,000.

The basic criteria on the basis of which small and medium-sized enterprises are classified and distinguished from large:
- Annual average of employees,
- The balance sheet after deduction of loss,
- Annual sales revenue.

The valid definition of a small business and small business entity in the FBiH is defined by the Law on Promoting Small Business Development. A small economy in FBiH is made up of small businesses, natural and legal persons who are permanently engaged in legally permitted activities in order to earn income and income on the market, including self-employment and family affairs related to crafts and crafts and other activities, registered with the competent authorities without any form of business which are (Petković, Serdarević & Bejić, 2010, p. 12):
- Independent in their business,
- Employ less than 250 workers annually, and
- The total annual income of up to BAM 40 million is realized and/or whose annual balance sheet does not exceed BAM 30 million.

In modern conditions of business, especially in developed countries, there are companies of different sizes in their economic structures. Existing and newly established small, medium and large enterprises produce synergistic effects in the economy of countries. SMEs are the engine of economic development and, in the opinion of the economist, are synonymous with the private sector and in the figurative sense of entrepreneurship. SMEs are characterized by a high degree of marketability and innovation.

3.2. Hypothesis of the research

In order to achieve a certain goal, it is necessary to determine the hypothesis of the work. The work hypothesis is the assumption or idea that is believed to guide the problem of research. Hypothesis is the guiding idea that can be verified or not confirmed during work.

The basic research hypothesis H_0 reads:
H_0: The application of the modified entrepreneurial niche market strategy will lead to the development and improvement of infrastructure that will affect the performance of SMEs in BiH.

In addition to the basic work, the following auxiliary hypotheses have been set:

H_1: Using the modified entrepreneurial strategy of the market niche increases total revenues from exports of SMEs in BiH.
H_2: The application of the modified entrepreneurial strategy of the market niche leads to the specialization of the products themselves by adapting the product characteristics to market niche requirements.
H_3: Using the modified entrepreneurial strategy of the market niche increases the number of employees of SMEs in BiH.

3.3. Sample of the research

Two questionnaires were conducted during this work. The first one was conducted in the first semester of the year before last year. The second questionnaire was conducted in the first half of last year. Most companies expressed complete readiness to cooperate with the requirement that the data and information from the category of business secrets be that they cannot be presented with the name of the data provider, but within the survey's analytics and with the possible mention of the subject's name. Through these questions

we have tried to find the shortcomings of quality positioning as well as the understanding of certain factors essential to achieve a high quality market position. We have attempted to include business entities from various fields, with a predominant focus on the most represented entities in BiH, which are the subjects of the manufacturing industry in the field of wholesale and retail as well as subjects in specific fields that are relatively more focused on market positioning. Most of the surveyed business entities are from BiH (35 companies), but there are also business entities from Serbia (6 companies), Croatia (6 companies), Slovenia (3 companies) and 5 companies from other European Union countries.

In the first questionnaire we conducted, 50 companies were involved, 25 respondents respond through a returned completed survey questionnaire, 15 respondents gave answers via telephone and internet communications and 10 respondents gave answers in personal communication. Out of the territory of BiH, 35 companies, 6 companies from Croatia, 6 Serbian companies, 3 Slovenian companies and 5 companies from other EU countries were questioned. In the second questionnaire we conducted ten companies from BiH who were questioned also in the first questionnaire, but this time we focused exclusively on issues related to market niches, increasing number of employees, offering new products, increasing number of customers, design/redesign products, investment in new equipment and exports. Companies questioned deal with: agriculture, hunting, forestry (8.7%), 30% of enterprises are from so-called manufacturing industries, 8.7% of construction companies, 30% in wholesale and retail trade, 4.3% in transport, 4.3% in education, 17% in specific fields, consulting, engineering and similar activities.

4. Presentation of research results

In Table 1 we have presented companies surveyed by the number of employees and the total annual income, which belong to small and medium enterprises. In the observed three-year period on a sample of ten enterprises, customer satisfaction was measured by the products and services of the surveyed enterprises.

According to the form of organization, the majority of the surveys covered are Ltd. (64%), a significant part of Joint stock company (34% in total) and 2% in the field of public enterprises. Ownership structure is associated with the form of organization and most of it is privately owned in total 98% and state 2%. Private

ownership of one person 35%, private ownership 2 to 10 persons 35%, ownership over 10 persons 18%, ownership structure private business secret 15%.

The volume of annual turnover shows relatively strong businesses where the largest number from the category BAM 15-50 million, a slightly smaller number from category BAM 5-15 million, followed by those from category up to BAM 5 million and the smallest number of 5 business entities from category over BAM 50 millions. This is very important for determining the material ability of a business entity to adjust, but also to determine the necessity and condition of a subject for adjustments, market positioning and finding a lower position. The predominant activity of the surveyed is manufacturing with service, followed by production and service equally, consulting and engineering. In manufacturing enterprises, the main product is mostly stand alone finished product in 2/3 of respondents, finished product within a complex product in 10% of respondents, half product in 10% surveyed, reproduction in 6% of respondents and none of surveyed in the field of raw material production. b) In service companies, there is almost uniform representation of all types of services, as well as evident lack of market research. During the observed period, companies surveyed their customers and measured customer satisfaction with their products and services. The result is shown in the table below.

Table 1. *Cross-section of enterprises after the application of a modified entrepreneurial niche market strategy*

Number	Name of enterprise	Activities	S/M	% where innovations are applied	% customer satisfaction
1.	"Koteks" Ltd. Tešanj	Leather, police equipment and special services	M	Introducing a new line and technology	90 %
2.	"Enker" Ltd. Tešanj	Spark plugs and ceramics	M	Introducing new products	89%
3.	"KM Trade" Ltd. Sarajevo	Weapons and military equipment	S	Introducing new improved products	81 %
4.	"Uslužnost" Ltd. Sarajevo	Clothing	M	New products	71 %
5.	"Zenko" Ltd. Zenica	Clothing	M	Employment and new products	55 %

6.	"Men" Ltd. Travnik	Shirts, clothes	S	New products	66 %
7.	"Shot" Ltd. Zenica	Trade weapons and military equipment	S	New products	57 %
8.	"Dino" Ltd. Tuzla	Clothing / transport	M	Introducing new technologies	78 %
9.	"Pilot Company" Ltd. Doboj Jug	Trade	M	Introducing new services	79 %
10.	"Brovis" Ltd. Visoko	Production Food	M	New products	96 %

Source: Authors' research

Table 2 shows the number of employees in a sample of ten companies over the year, as well as new products and services introduced in the companies surveyed. The number of employees in the surveyed shows that the largest number from medium-sized enterprises, equally followed by big and small enterprises and relatively small number in the category of micro enterprises. We believe that this survey encompassed all forms of organization, whose market positioning is an important factor in maintaining the existing volume of work and employment, as well as for planned growth.

Table 2. *Cross-section of the surveyed enterprises*

Enterprise	Year	Number of workers	New products / services
"Koteks" Ltd Tešanj	1	201	Firefighters' uniforms
	2	212	Uniform for Montenegro Army
	3	245	Ballistic products
"Enker" Ltd.Tešanj	1	205	IT WAS NOT
	2	208	New palette of ceramic products
	3	221	New product design
"KM Trade" Ltd. Sarajevo	1	14	IT WAS NOT
	2	15	IT WAS NOT
	3	17	Forensic services and the like
"Uslužnost" Ltd. Sarajevo	1	79	IT WAS NOT
	2	79	Service of embroidery
	3	89	Official uniforms

"Zenko" Ltd. Zenica	1	92	IT WAS NOT
	2	123	Service of embroidery
	3	145	Clothing with sewing stitches
"Men" Ltd.Travnik	1	19	IT WAS NOT
	2	24	A new line for uniforms
	3	29	Production of uniforms
"Shot" Ltd. Zenica	1	12	IT WAS NOT
	2	17	IT WAS NOT
	3	18	KDZ Review Services
"Dino" Ltd.Tuzla	1	70	IT WAS NOT
	2	77	IT WAS NOT
	3	98	Production of protective and fire uniforms
"Pilot Company" Ltd. Doboj Jug	1	15	IT WAS NOT
	2	20	Furniture and the like
	3	27	Dishes and the like
"Brovis" Ltd. Visoko	1	239	IT WAS NOT
	2	244	New product design
	3	266	An extended line of chicken products

Source: Authors' research

From the above indicators it can be seen that the modified market niche strategy has given some results in the number of employees and new products and services.

Results show that a very small number of respondents are involved in lohn affairs, and thus in some sort of specific division of work at the global level. Those involved are evenly distributed to those who make a finished product and who work part or parts of a product. Significant distrust of the service provider is because the vast majority of services are by technology, drawings and under the control of the job provider, with a dominant percentage of ownership of the service provider's equipment. In this way, a relatively low level of connection has been achieved and the ability of the provider of work in a relatively easy and painless way can give up the work, find other partner, can stop working with very little consequences for him.

Most of the surveyed are placement-linked and targeted or have achieved the level of domestic market, while at the same time the supply is heavily focused on the import and combined form of import and domestic markets.

The number of the most important customers shows that none of the respondents has a single dominant customer, even those who use licenses and cooperation with large systems, while the largest number of customers in the category has a large number of over 100 customers. This evidently suggests a great deal of market impact, dependency on their own competitiveness and aspiration for global positioning, with small opportunities for segmented positioning. A much better situation is in the supply where ralatively uniform distribution is provided from group 2-10 and group 10-100, with fewer respondents supplied from a large number of suppliers, and none of the respondents were dependent on only one main supplier. Looking at the surveyed from the point of view of the specialization of equipment, there is a generalized specialization and universality, with a relatively small number equipped with narrowly specialized equipment. This gives us an image of market dependence on momentum, second or general movement. It is obvious lack of narrow market positioning and trying to get a niche position.

Results suggest noticeable gap between desire, hope and reality. There is no dominant position of the surveyed neither as a domestic supplier nor as an exclusive buyer or supplier. Over than 90% of respondents expressed the need for permanent education, with the greatest need for education and introduction of special skills and skills in the manufacturing sphere, then in the service sphere, management, financial accounting and marketing. There is an evident lack of confidence in domestic institutions and the commitment to acquire special knowledge and skills and additional education from foreign experts and institutions, then from local experts and institutions and at least to their own potential. It is evident that the dispersion of management function through the board is dominant, then follows management function through the function of the director / general manager, and no respondent does not have an externally organized management function.

The development of the business environment is largely centralized through the management function or combined through the management and services of specialized institutions, while the smallest number has entirely gave developmental function to specialized institutions. Business strategy the largest number leaves to cases and needs, the smallest number works corrective, while those with long-term planning for 5 years or more and those with short-term strategic plans at a one-year level are evenly represented. Although there is a clear ignorance of the process of strategic market positioning, all the respondents would not leave it to a specialized institution,

possibly if a third party paid it a very small number would be willing to do so, while the largest number expressed little willingness to leave strategies for specialized professional institutions. In strategic planning, the sources of the necessary information for quality positioning are largely reduced to a business entity, very little at the level of global strategic plans, as well as at the local community level. At a low level, the plans are based on the management of information gathering and management plans, while the smallest number of their plans were based on the plans of the concern, ie the leading or superior business entity. When analyzing business strategies, there is evidente reliance on management or absence of adequate analysis, while a small number of those applying PEST/PESTLE or SWOT analysis. Expected support from the socio-political community would be through creating a global strategy, quality legal regulation as a priority, followed by quality sources of funding, availability of information and quality communication with customers.

In cost planning, there is a clear collision that planning periods do not track and plan costs, and a significant number does not plan costs at all, the largest number plans them on an annual basis and a slight number on quarterly and month basis. This indicates that there is no planning platform that would ensure strategic positioning to overcome planning problems through plan costs. It is evident that there is unity in the need for human resources as a factor in achieving a high quality market position, significant dependence on available raw materials and energy, relatively little dependence on transport and communication, and greater commitment to the achievement of a privileged market position, even monopoly most important is quality positioning, then follow a good definition of needs, and customer options, a relatively small number thinks that this requires a quality product, while there is a very small number that considers as unwanted creation of a privileged market position. Those who have or have identified some form of niches through the issues registered Specialized Market Strategy as the leading, special skills strategy and knowledge as the next and the smallest number has expressed the strategy of the toll ramp. As sources of information personal experience is referred to as the dominant source, the internet as the next, while other sources are relatively evenly distributed in a very small extent.

Descriptive questions in our research suggest to look at the visions of the surveyed entity show that most of their advantages are based on human resources and product specificity, they are committed to offer narrowly specialized goods and services, believing that their great advantage is the

supply flexibility, quality, continuity, relative short delivery times and competitive prices. The largest number believe that substitution of the import of the goods they are directed to is not possible, a small number believe it would be possible with additional investments in the co-operation and raw material base, so they did not even see their quality positioning through a modified import substitution strategy. Almost everyone believes that there is the possibility of employment of other business entities as well as the possibility of increasing employment in their own business entities with quality development strategies and planning and quality investment. To create a quality business environment, they have evenly distributed the dependence on entrepreneurial strategy, management, equipment, personnel, high quality financial resources and especially socio-political ambience.

Looking at the results of the survey we can say that we have confirmed the main hypothesis, i.e., that the application of created modified entrepreneurial niche market strategies will lead to the development and improvement of infrastructure that will affect the performance of small and medium businesses in BiH.

As it may be, surveyed companies have been developing and improving their business success through offering new products, investing in new equipment, increasing exports, increasing customer numbers and increasing the number of employees. So we come to the confirmation of all auxiliary research hypotheses.

H_1: Using the modified entrepreneurial niche market strategy, the total revenue from exports of small and medium-sized enterprises in BiH is increased.

As can be seen from the survey results in the surveyed companies, there has been an increase in total export revenue.

H_2: The application of the modified entrepreneurial niche market strategy leads to the specialization of the products themselves by adapting product characteristics to market niche requirements.

Four of the ten companies have changed their design of new products, suggesting that companies have adapted their products to market demands, *i.e.* market niches.

H_3: Using the modified entrepreneurial strategy of the market niche increases the number of employees of SMEs in BiH .

Even six of the ten companies had an increase in the number of employees, which confirmed this hypothesis. These companies, besides employment, also had new products, increased customer numbers and export growth, as well as product redesign and investment in new equipment.

Results are related to the previous, the absence of the use of modern theoretical economic thought and the achievements of the modern economy as a science, is evident in the concept of Market Niche, most of the respondents never met this term, and the significance of those who stated that they met the concept of a Market Niche, expressed inadequate or partial understanding of this concept. Even a small number who have achieved some form of nicher position have come to it by chance, circumstance or third party representation and by license. In strategic positioning, there is no single approach of surveyed and there is evidently no view of the need for market positioning and the realization of the role of niches.

5. Conclusion

Creating an adequate strategy when it comes to attracting tourists from Central and Eastern Europe and the Far East and other oil rich countries. From the survey we conducted, it can be seen that a large number of companies, in our case, 70% of surveyed companies did not really encounter the concept of market niches. Similarly, the second survey shows that some progress has been made in companies using the market niche strategy.

Our first survey actually tells us that even those companies that operate in market niches, most of them found them there by chance and by accident, and not by some planning activity. In addition to the aforementioned facts, the research has also opened up many issues important for the development of SMEs sector and market niche, while creating scientific backgrounds for future research in this area. In further researches, special attention should be paid to the role and importance of the state in creating modalities for the successful operation of SMEs in market niches.

The directions of further research should go in the direction of revealing other hidden potential of the the economy of BiH, especially in the area of religious tourism, but also of tourism in BiH. Creating an adequate strategy for attracting tourists from Central and Eastern Europe and the Far East and other oil rich countries. The survey we conducted shows that a large number

of companies, in our case, 70% of surveyed companies did not really meet the concept of market niches. Similarly, the second survey shows that some progress has been made in companies using the market niche strategy. Our first survey actually tells us that even those companies that operate in market niches, most of them found it here by chance and by accident, rather than by some planned activity.

In addition to the aforementioned facts, the research has opened up many issues important to the development of SMEs and market niche sectors, while creating scientific backgrounds for future research in this field. Further research should pay special attention to the role and importance of the state in creating modalities for as successful as possible business of SMEs in market niches.

Results of theoretical and empirical research show that applying the modified entrepreneurial niche market strategy leads to the development and improvement of SME performance in Bosnia and Herzegovina. With pleasure it can be said that we have confirmed our basic research hypothesis, that the application of created modified entrepreneurial niche market strategies will lead to the development and improvement of infrastructure that will affect the performance of SMEs in BiH In this paper, we have been able to identify some of the hidden potentials of BiH and the possibility of maximum exploitation of them.

Nevertheless, the complexity of the market, the weak competitiveness of BiH companies, large imports and inadequate exports, the backwardness of the economy of BiH, represented an inspiration and a challenge for this unique research how to fix all of this, to own the product or service so important for a particular process or market so that no one tries to compete with you.

The real challenges facing small and medium-sized enterprises in BiH today are how to respond to the growing pressures of competition from the region, to keep up the level of employees and revenues. Only by creating an adequate entrepreneurial strategy can answer these challenges. One of these entrepreneurial strategies is the market niche strategy. We believe that with this work we have given a certain contribution to see opportunities and position of the economy of BiH, *i.e.* SMEs in relation to the countries of the environment and the EU.

Likewise, we have identified some of the hidden potentials of the economy of BiH and the possibility of maximum utilization of these, in particular in the production of certain components for auto industry and food production.

The pragmatic contribution of this paper is that we have succeeded in proving that by applying a modified market niche strategy to increase revenue, the number of employees in companies will be better managed in the company itself, the staff will be improved and the competitiveness of enterprises in BiH will increase and it is possible to substitute the import.

Our work has led us to find out what measures state should take to help entrepreneurs increase exports and employment in a unique way. The directions of further research should go in the direction of discovering and other hidden potentials of the economy of BiH, especially in the field of religious tourism, as well as in general tourism in BiH.

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TARGETED DECLINE OF
COLLECTIVE BARGAINING

CILJANO ODUMIRANJE
KOLEKTIVNOG PREGOVARANJA

Abstract

The key purpose of the analysis is to examine the status of employment contracts and collective labour agreements from the perspective of the new piece of legislation in the Republika Srpska. The main hypothesis is that the Government deliberately regulates certain issues through the law, as there is no expectation that the Collective Agreement will be reached soon.

The methodology has been based on contemporary analysis of labour legislation which is based not only on the idea of self-regulation, but also on the need to regulate the market in order to make it more efficient, or in line with political intentions. There are two aspects of this approach: regulation as exogenous factors that influence economic flows, and also "perfect" regulation, enabling perfect market competition. More specifically, the focus is on certain mechanisms that are regulated by the new law in an innovative way, which has given rise to argumentative discussion on the new normative mechanisms and their practical implementation.

One of the most important novelties in the Labour Law is the provision under which collective agreements are concluded for a period of three years, creating the possibility to track cyclical movements in the economy and to adapt to the market situation. On the other side the legislator has decided for certain issues that used to be defined under collective agreements to be regulated in detail by law, hence reducing the manoeuvre space for collective bargaining between the workers and the employers.

Latest developments are showing that the Union of Employers' Associations of Republika Srpska is losing interest for tough negotiations with syndicate, as collective agreement is not obligatory requirement in front of them, similarly like in Great Britain, where it depends on the goodwill of the signatories, it seems that the Labor Law directly contributed to these developments.

Keywords: labour law, collective bargaining, syndicate

JEL: J21, J23, K31

Sažetak

Ključna svrha analize je razmatranje statusa ugovora o radu i kolektivnih ugovora iz perspektive novog Zakona o radu Republike Srpske. Glavna hipoteza je da Vlada sa svrhom definiše određena pitanja koja su do sada bila regulisana kolektivnim ugovorima, jer ne postoji očekivanje da će kolektivni ugovori biti popisani uskoro.

Korištena metodologija je bazirana na savremenim analizama radnog prava, koje nisu samo bazirane na principima samoregulacije, već i na potrebi da se reguliše tržište kako bi postalo efikasnije ili u skladu sa političkim namjerama. Dva su ključna aspekta ovog pristupa: regulacija kao egzogeni faktor koji utiče na ekonomske tokove, te "perfektna" regulacija, koja omogućava idealnu tržišnu konkurenciju. Da specificiramo, fokus je na određenim mehanizmima koji su regulisani u novom zakonu na inovativan način, što dovodi do argumentovane diskusije praktične primjene tih normativnih mehanizama.

Jedna od najznačajnijih novina je u tome da se trajanje kolektivnih ugovora ograničava na tri godine, što omogućava prilagođavanje promjenama na tržištu. Sa druge strane, zakonodavac je odlučio da određena pitanja koja su do sada bila regulisana kolektivnim ugovorima budu regulisana Zakonom o radu, čime se smanjuje manevarski prostor za kolektivno pregovaranje između radnika i poslodavca.

Posljednji razvoj događaja pokazuje da je Unija udruženja poslodavaca Republike Srpske izgubila interes za pregovaranje sa sindikatom, a kako kolektivni ugovor nije obavezan zahtjev pred njima, slično kao i u Velikoj Britaniji gdje zavisi od dobre volje strana potpisnica, čini se da je Zakon o radu upravo doprinijeo ovakvom razvoju događaja.

Ključne riječi: Zakon o radu, kolektivno pregovaranje, sindikat

JEL: J21, J23, K31

1. Introduction

The Labour Law of the Republika Srpska regulates certain normative instruments in an innovative way, which in our opinion could lead to significant changes in practice and in application of labour regulations. The National Assembly of the Republika Srpska (RS) adopted the Labour Law[1] by quick legislative procedure, at the 16th special session, on 29 December 2015.

One of the reasons for the legislator to proceed with the adoption of the new Labour Law is further harmonization of the labour regulations with the obligations assumed by Bosnia and Herzegovina (BiH) upon signing the Stabilization and Association Agreement, aimed at its harmonization with the *acquis* of the European Union. The adoption of this Law further harmonizes the obligations of BiH assumed under ratified international conventions of the International Labour Organization (ILO), such as Convention No. 87 - Freedom of Association and Protection of the Right to Organize, Convention No. 98 - Right to Organize and Collective Bargaining, Convention No. 132 - Holidays with Pay, Convention No. 138 - Minimum Age, Convention No. 103 - Maternity Protection, Convention No. 100 - Equal Remuneration (for Men and Women Workers for Work of Equal Value), *etc*.

Besides the aforementioned, these amendments to the law address a practical business need to further harmonize it with other applicable laws (primarily the Law on Companies, the Law on Protection of Personal Data, *etc*.) as well as the need to meet practical requirements for introducing new, more flexible forms of labour.

The key purpose of this analysis is to examine the status of collective labour agreements from the perspective of the new law, *i.e.* the focus is on certain mechanisms that are regulated by the new law in an innovative or different way, which has given rise to argumentative discussion on the new normative mechanisms and their practical implementation.

The distinction between this paper and some other analyzing labour laws is in its methodological perspective - "Law and economics" of employment law. Although many scholars see no substantive difference between 'Economic analysis' of employment law and "Law and economics" of employment law Geoffrey Miller' is making clear distinction. According to him, and in line with our beliefs, Economic analysis brings the principles and reasoning of economics to examine the effects of a law or legal doctrine. Law and economics combine both legal and economic modes of thought, and perhaps even prioritizes law. Law brings 'the understanding of complex institutions, politics, and social policies' to the analysis (Miller, 2011).

2. Theoretical exposition of labour legislation

Over the past decade, the role of the legal system – as an important determinant of movement of economic indicators – has been put at the heart of economic

issues (La Porta *et al*., 2008). Empirical studies guided by theoretical perspectives, in particular those written by neoclassical economists, deploy labour laws as exogenous intervention, as they are in contrast to the market laws and attempting to restrain them. Under the neoclassical model, wages and employment are defined through direct interaction between supply and demand. The market also stimulates natural movement and getting equal pay for equal work, so the wages should be defined by the ratio of comparable productivity between workers (Becker, 1971).

This idea was especially examined through Stigler's analyses of minimum wage (Stigler, 1946), which have set the basis for economic discussions on labour legislation since the late 1940s and have particularly inspired Posner and other researchers of the Chicago School of Law and Economics (Posner, 1984). Additional rights can be secured through bargaining, involving the employers and organized labour groups.

We can conclude that according to neoliberal economists, regulation of wages leads to separation of workers' earnings from the market conditions, *i.e.* to setting their price above realistic market price, which reduces demand for workers, *i.e.* curtails economic development, because part of the profit is redistributed onto workers. Therefore, development of economic thought based on neoclassicism embraced the position that a law on labour is an external source of inequality, deriving from decisions created in the political sphere and advocating redistribution of the rights and gain onto the collective within the production process or service providing process. The bargaining power and the skill of trade unions may or may not secure additional rights for the workers, by making a deal with the employer.

Modern Labor Law includes all legal regulation affecting the workplace, like prohibiting employers from discriminating against employees on the basis of race or sex, or laws mandating safety guards on workplace machines, or laws regulating leave time, including some issues which should be part of collective bargaining. Since 1990s, there is present differentiation between labor law and employment law. Before then, labor law was covering all laws regulating the workplace, while increasingly since 1990, 'labor law' regulates unions and 'employment law' (Schwab & Stewart, 2017). Alan Bogg published essay on philosophical perspectives on labor law (Bogg, 2017).

The role of law often is to reduce or correct market inefficiencies (Schwab & Stewart, 2017). Contemporary analysis of labor legislation is based not

only on the idea of self-regulation, but also on the need to regulate the market in order to make it more efficient, and fairer. There are two aspects of this approach (Deakin & Sarkar, 2008):
1. regulation as exogenous factors through legislation that influence economic flows and
2. "perfect" regulation, enabling perfect market competition.

The legal framework is seen as a tool for coordination of players' expectations in the conditions of uncertainty, which is the fundamental objective behind the struggle of trade unions. In response to economic crises, laws are not merely imposed onto employers, but attempts are made through mutual dialogues to crystallize international conventions that have arisen from the need to share experiences regarding fair agreements for workers and statutory texts. Therefore, it can be concluded that redistribution has become the basic purpose of labour laws, while at the same time they serve as the basis for negotiations between the "parties" (Hyde, 2006). Under the International Labour Organization Convention No. 98, workers enjoy adequate protection against acts of anti-union discrimination in respect of their employment, such as conditioning their employment or terminating their contract by reason of union membership. Workers' and employers' organizations enjoy adequate protection against any acts of interference by each other or each other's agents or members in their establishment, functioning or administration.

Emerging from the constructs defined by law and the bargaining on the rights is the employment contract as a complex "tool": a standard mode of transaction between the worker and the employer, *i.e.* mediating between the employer and the worker, to ensure that the employer gets adequate value for the work paid and for the worker it means mitigating the risks that ensue from dependence on market conditions and from decisions made by the employer.

3. Bargaining and collective agreements are not necessary any more

Collective agreements are concluded as general, special and collective agreements with individual employers. There is no assumption of direct application of any of collective agreements to all employees and all employers in the territory of the Republika Srpska.

General and special collective agreements shall apply indirectly and shall be binding for all employers who, at the time of concluding a collective

agreement, were members of employers' associations that are parties to the collective agreement.

The Law in principle stipulates collective bargaining, for example if minimum 10 employees or minimum 10% of the total number of employees concurrently address the employer for protection of their rights under employment, the employer is obliged to seek and take into consideration the opinion of the trade union or the employees' council if no trade union is organized at the employer. An employer who has not accepted the initiative by a representative trade union to engage in negotiations to conclude collective agreement may not stipulate the rights and obligations arising from employment by a rulebook on labour, but still there is no obligation that they have to reach an agreement.

Although collective bargaining is very important in labor relations in all economic systems, there are already some indications in practice that certain social partners are not interested in signing new general collective agreements if their demands are not met. Given that the law now regulates many of the issues that used to be dealt with under collective agreements, it could be argued that there is a (conscious) risk of abating the collective bargaining, at least at the level of general collective agreements, for instance:
■ Chapter VI: Breaks and Leave;
■ Article 93: Suspension of rights arising from employment;
■ Article 132: Other allowances upon employment (per diem for a business trip, transport allowance - reimbursement for the costs of travelling to/from work, field allowance - compensation for increased subsistence expenses during field work, meal allowance - expenses for one meal during one workday and for overtime exceeding three hours a day, if the employer does not have an organized system for eating at work for the employees, severance pay when an employee retires, *etc*.).

One can conclude that the Labor Law of the Republika Srpska carries less flexibility for the employers, which means more security for the employees, having regulated a number of issues that should be addressed through collective agreements reduces a need for negotiations between the social partners. The last Agreement between the Social Partners and the RS Government was signed back in 2010, with the RS Government undertaking to prepare a new text of the Labour Law within 18 months from the adoption of the General Collective Agreement of the Republika Srpska ("Official Gazette of the Republika Srpska" No. 40/10). Given the failure on the part of the RS

Government to meet this obligation, right after the expiry of this deadline, the Confederation of Trade Unions has taken the stance that the Labour Law of the RS should not be changed.

The Labour Law of the Republika Srpska, provides for employment contracts to be concluded, as a rule, for indefinite period of time and for fixed-term employment contracts to be merely exception to the rule. If an employment contract does not specify the reason for concluding a fixed-term contract or duration of the employment contract, the employment contract shall be deemed to be permanent contract, which is a provision favouring worker's right.

This Law (unlike previously applicable law) does not spell out the cases in which fixed-term employment contract may be concluded; rather, the issue is regulated in a manner that can be open to broader interpretation, depending on the objective business needs of the employer. Concluding a fixed-term employment contract as an exception is conditioned by the existence of "objective reasons that are justified by a deadline, doing a very specific work or occurrence of a predetermined event"; which provision can be deemed as working in the interest of the employer.

On the other hand, another novelty is that a fixed-term employment contract, with or without interruption, can last longer than 24 months (with a period of up to 30 days not being considered as interruption in employment). The legislator has partly created the possibility for increased labour mobility and easier employment of workers; however, in view of the still applicable rule that employment contracts are concluded for indefinite period of time, it is questionable whether such provision will have any significant positive effects on the labour market and reduction of unemployment.

On the other hand, the matter pertaining to termination of employment was one of the topics that were subject to dispute between the social partners in the process of passing the Law. When it comes to consensual termination of employment, the statutory novelty is that it takes legal effect with the day of verification of the employee's signature by the competent body of local administration.

The very form of these agreements additionally complicates the procedure for consensual termination of employment and we are not aware of any similar normative mechanisms in the region. It seems that with this provision, the

legislator aimed at protecting the worker from signing such agreements lightly. Namely, according to the available case-law, the workers contest such agreements through the court relatively often, contending that they were signed under pressure from the employer. In these cases, the workers most often base their claims on submissions that they had signed such agreements, for example, under threat, by mistake, *etc*. (due to defects in consent). Despite having formalized the procedure for signing such agreements in principle, such normative mechanism could lead to reduced number of similar lawsuits in practice.

As a novelty, the Labour Law explicitly prescribes legal consequences of an unlawful termination of employment contract (*e.g.* the maximum amount of 12 employee's salaries, depending on the time spent working for the employer, the age of the employee and the number of dependant family members, *etc*.) which could be stipulated in more detail by the collective agreement.

Furthermore, if the court determines in the course of the proceedings that there was ground for termination of employment, but the employer acted in contravention of the provisions of the law prescribing the procedure for termination of employment, the court shall refuse the request of the employee to return to work, but shall award the equivalent of six employee's salaries to the employee in name of damages. The case-law shows that judgments in such disputes mostly go in favour of the employees.

For example, trade union representatives have repeatedly opposed having law provisions that would regulate termination of employment contracts, arguing that these provisions are very flexible (for example; if the employee does not achieve necessary results, for technological, economic or organizational reasons, refuses to sign an annex to the employment contract, a serious breach of work duties, or does not abide by the work discipline of the employer, potential abuse of the right for absence or coming to work under influence of alcohol) and that the employee can never be sure whether any one day is his/her last day at work.

The collective agreements are concluded for a period of three years, creating the possibility to track cyclical movements in the economy and to adapt to the market situation. The minister in charge of labour affairs may decide to extend the applicability of a collective agreement or particular provisions thereof to employers who were not members of the association of employers.

The responsible minister can make a decision to extend the applicability for the purpose of realising the goals of economic and social policy in the Republika Srpska, in order to secure equal working conditions, or to mitigate salary differences in a particular sector, provided that the collective agreement whose applicability is extended is binding for the employers who employ at least 30% of all employees in such sector, field or branch. Before making a decision to extend the applicability, the responsible minister is obliged to seek opinion from the Economic and Social Council. If the Economic and Social Council does not give their opinion, the minister shall make the decision to extend the application of collective agreements independently.

Collective agreements have been a major problem thus far, because of lawsuits brought upon them by the employees. Although the exact data are not available, the information circling in the public was that upon lawsuits from educators alone, the damage to the Republika Srpska was multimillion. In some cases, these lawsuits are a contributing factor to the inability of struggling companies to recuperate. This can be seen on the example of the railroad company Željeznice Republike Srpske, where based on a decrease in the payment of meal allowances, around 2,000 employees have filed more than 170 lawsuits, with the total claims between 2012 and 2015 exceeding BAM 14,000,000. They were mostly adjudicated in favour of the employees (Glas Srpske, 2016) and by the end of 2015, BAM 8,600,000 have been debited in the books upon received judgments against Željeznice Republike Srpske. The only reason why meal allowances were reduced from BAM 185 net (BAM 305 gross) to BAM 112 net (BAM 185 gross) in 2012 is difficult financial situation that Željeznice Republike Srpske has been experiencing for many years.

Quite a bit uncertainty to both employees and employers is brought about by the provision stating that if a collective agreement is not adopted, the Government is authorized to issue a decision on increase in salaries and other allowances until collective agreement is adopted, without any obligation to consult employers when making such decision.

As of July 2016, the Republika Srpska does not have a general collective agreement, as it has ceased to be effective after two extensions. In order to prevent a legal vacuum from being created, the Government of the Republika Srpska has rendered the Decision Defining Increase in Salary, Allowances upon Employment and Assistance to Workers.

This decision is temporary by nature and it shall be effective until the social partners reach consensus on the general collective agreement. According to this decision, the lowest employee salary in the Republika Srpska remains the same, *i.e.* BAM 370. Nonetheless, trade union representatives believe that this Decision of the Government is incomplete and drastically diminishing labour rights, in particular as regards night work, transport, meal allowance *etc*. and that the Government and the employers have made the decision without sincere intent to make a deal with the trade union. The Union of Employers' Associations of Republika Srpska asserts that in the new cycle of negotiations "it was impossible to negotiate with the Confederation of Trade Unions of the Republika Srpska" (Euroblic, 2016), but it is not particularly critical of the Decision of the Government.

These developments are following trends initiated in developed countries, where national agreements are more common in smaller countries, and it usually settle general matters, leaving more detailed issues for local consideration.

Collective agreements are not legally binding in all countries. In Britain their application depends on the goodwill of the signatories, while in Germany, France, and Australia the government has potentially strong role and may require that the terms of negotiated settlements be extended to all firms in an industry.

4. Conclusion

The new Labour Law is harmonized with the conventions of the International Labour Organization to a certain degree, but there are many inconsistencies, resulting in selective application of these conventions. We can say that content-wise, the Labour Law regulates the rights and obligations of the employees and the employers in the RS in much more detail than the previous Law.

A series of new instruments has been introduced, which, on the one hand, enables the employers to organize their work in a more flexible way, and, on the other, grants additional rights to the employees. The most important novelties in the Labour Law are:
■ Provisions of a rulebook on labour cease to be effective with the coming into force of a collective agreement concluded between the employer and the trade union, stipulating the same issues.
■ An employer who does not accept an initiative by a representative trade union to commence negotiations to conclude a collective agreement

may not regulate rights and obligations arising from employment by a rulebook on labour.

■ There is no assumption of direct application of any of the above collective agreements to all employees and employers in the RS territory.

■ Duration of collective agreements has been provided for a maximum period of three years, which is reasonable, given that collective agreements should track movements in the labour market and economic indicators.

A series of provisions that used to be regulated by collective agreements have been introduced into the Law. However, such decision on the part of the legislator does not benefit the actual needs of either employees or employers, because collective agreements still constitute a more flexible method of resolving specific labour issues and problems in mutual relations. Lack of flexibility prevents making adequate reactions in the conditions of changing markets. On the other hand, a reduced need for collective bargaining diminishes the relevance of the trade union's role (and the role of other social partners) in the process of collective bargaining.

It is indisputable that it was necessary to regulate the sphere of labour legislation in a more contemporary and more market-suited manner. Still, the question remains as to whether the new Law will bring about what it has been adopted for - higher employment rate, or such reforms require further efforts towards improving the business climate in the Republika Srpska, what should be investigated further. Another question for future is does decline of collective bargaining lead to inefficient labour markets, as workers will be prevented from terms and conditions that are costly, and in principle decreasing company profits and investments.

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Endnote

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INNOVATION AND INNOVATIVITY AS THE BASIS OF THE COMPETITIVE ADVANTAGE OF THE SMALL AND MEDIUM-SIZED ENTERPRISES

INOVACIJE I INOVATIVNOST KAO TEMELJ KONKURENTSKE PREDNOSTI MALIH I SREDNJIH PREDUZEĆA

Abstract

The aim of the research is to use scientific methods to determine whether innovations and innovativity are sufficiently represented in SME's, in other words, whether innovations significantly affects the competitiveness of the SME's.

The main research hypothesis is: There is a statistically significant impact of innovative activities on the competitiveness of the SME's. Starting from the main research hypothesis, the innovation activities are determined as independent variables, while the competitive advantage of the SME's is determined as dependent variable.

In order to check the main research hypothesis, the indicators of the independent variables are technological and non-technological activities and the indicators of the dependent variable are business strategy and competitiveness. The empirical research is carried out on the basis of primary data collected on the field by using methods of questioning, and in this case was used high-structured questionnaire as a form for data collection. The research questionnaire is designed by using Likert's five point scale of the agreement. Primary data are collected on the basis of the controlled random sample and the respondents are chosen by their availability. The research is carried out in the region of Zenica-Doboj Canton, Tuzla Canton, and the Republic of Srpska. In order to get the answers on the research questions different scientific approaches and data processing methods are used, all in accordance with the research issues (analysis, synthesis, induction, deduction, factor analysis, etc.).

Keywords: small and medium-sized enterprises, innovation, competitiveness, factor analysis

JEL: O30

Sažetak

Cilj istraživanja je da se pomoću naučnih metoda utvrdi da li su inovacije i inovativnost dovoljno zastupljene u MSP-a, odnosno da li inovacije značajno utiču na konkurentnost MSP-a. Centralna istraživačka hipoteza glasi: Postoji statistički značajan uticaj inovativnih aktivnosti na konkurentnost MSP-a. Polazeći od centralne istraživačke hipoteze, opredijelili smo se da inovativne aktivnosti budu nezavisna varijabla, a konkurentska prednost MSP-a zavisna varijabla.
Da bi se provjerila centralna istraživačka hipoteza utvrđeni su indikatori nezavisne varijable: tehnološke i netehnološke aktivnosti. Na drugoj strani, indikatori za mjerenje zavisne varijable su: strategija i konkurentnost preduzeća. Empirijsko istraživanje realizovano je na temelju prikupljanja primarnih podataka terenskim istraživanjem, korištenjem metode ispitivanja, pri čemu je korišten visoko strukturirani anketni upitnik kao obrazac za prikupljanje podataka. U anketnom upitniku je korištena Likertova skala sa pet stepeni slaganja. Primarni podaci prikupljeni su na osnovu kontrolisanog slučajnog uzorka, a ispitanici su birani na temelju dostupnosti. U istraživanje su bila uključena MSP-a u Zeničko-dobojskom kantonu, Tuzlanskom kantonu i Republici Srpskoj. Kako bi se dali odgovori na postavljena istraživačka pitanja korišteni su različiti postupci i metode obrade podataka, a sve u skladu sa postavljenim istraživačkim problemima (analiza, sinteza, indukcija, dedukcija, faktorska analiza i dr.).

Ključne riječi: mala i srednja preduzeća, inovacije, konkurentnost, faktorska analiza

JEL: O30

1. Introduction

Lately, we have encounter more and more with terms such as turbulent environment, uncertain environment, dynamic environment, unstable environment, which warn us that if we want to have a certain business future, we must be ready to respond to the challenges that arise from such environments. In such conditions, managers don't have an easy task, to provide enterprises with an answer on how to manage instability and how through changes ensure success and create superior values that will defer them from the competition. Most authors agree that sources of fundamental competitive advantages

are: efficiency, quality, innovation and full understanding and sensitivity to customer requirements.

In the paper, authors will focus on innovation as the basis of the enterprise competitive advantage. Also, it will be explored to what extent innovations are shared within the enterprise and to what these innovations are mostly related to: products/services, processes, marketing or organizational innovations. This suggested to us that we ask the following problem question: *What is the level of innovative activities in the SME?* The aim of the paper is to determine all relevant theoretical, methodological and empirical characteristics of innovative SME activities in order to achieve competitive advantage in the chosen market niche. The aim of the research is to use scientific methods in order to determine whether innovations and innovativity are sufficiently represented in SME's and whether innovations have a significant impact on SME's competitiveness. The purpose of the research is to provide support of growth and development of SME's, both in the research areas and in the entire territory of BiH.

2. A review of previous research

In the literature, innovation is treated in several ways, with the majority of existing studies in the study of innovation being limited to the research of structural features (Hoffman *et al*., 1998). In the past few years, a new field of research about SME's has emerged, that claim that they are not just small versions of big companies, but that special rules apply to them (Hausman, 2005).

Most of the existing research is focused on researching the determinants of the success of innovation activities. For example, some of these studies attempt to identify critical factors that determine the success of SME's innovation strategies (Dogson & Rothwell, 1991; Bowen & Ricketts, 1992). Other studies deal with the specification of successful technological and innovation practices (Rinhol & Boag, 1987; Bracker *et al*., 1988; Carland *et al*., 1989; Radosevic, 1990; Oakey & Cooper, 1991). Previous research has shown that innovation activities correlate with a number of factors, which can be summarized to a smaller set of more important variables (Keizer *et al*., 2002).

Keizer *et al*. (2002) have discovered that innovativity is a result of carefully selected innovation policy, and that the most innovative SME's share three basic characteristics: connectivity with knowledge centres, access to funding, and a high research and development budget.

In order for the SME's survive, it is necessary to build strong competitive advantage based on a lower costs of production (that result in lower selling price of products than competitive product prices) and differentiated high quality products that will have higher value for consumers than competing products (Lazić, 2013, p. 72). In the past, SMEs have built their competitiveness mainly by focusing on specific market niches, fragmented branches, or cost management (Thompson & Strickland, 2001, p. 193). In the modern business conditions (characterized by market changeability, globalization, market deregulation and high competition, factors that determine the competitiveness of enterprises gain different significance), especially in the post-crisis period, an increasingly important source of SME competitiveness becomes the ability of innovation (European Innovation Management Landscape, 2012).

The application of new and original ideas, which can lead to the creation of new technology, products and services, or changes in business practice that lead to creation of added value for consumers, becomes one of the crucial potentials for gaining and maintaining the competitive advantage of SMEs in the post-crisis period (Kaufmann *et al*., 2012, pp. 333-360). Some SMEs studies are studying variables that are considered to be the source of innovation diversity in organizations (Rothwell, 1989; Noteboom, 1994). For example, large and small enterprises are frequently represented in innovation as diametrically opposed, where large companies take advantage of resources, while small companies have the advantage of flexibility (Rothwell, 1985).

The above-mentioned studies mainly deal with innovation activities and efforts, and their ultimate success in creating innovation (Hoffman *et al*., 1998). In these studies it is not shown an attempt to connect innovation to its ultimate goal, which is to improve business. Therefore, we will strive to contribute to the existing literature through studying of the efficiency of innovation activities.

3. Innovations in the SME's

Innovations are the foundation on which each company's future lies since it enables prosperity in business and therefore increased use of resources, and innovations are necessary for the enterprise to survive at the market in the long run. One of the largest classifications of the innovations is based on the character (nature) of the innovations, and on the basis which innovations are divided on (Dobre, 2004, p. 9): social, socio-technological and technological.

Social innovations include: market (marketing innovations), innovation in field of managing and political (institutional) innovation. Market innovations are introduced in order to satisfy customers needs and it includes new ways of marketing products and services. Innovations in managing enterprises are changes in structure and functioning of the products quality and services as well as human resources (human capital). Political innovations are aimed towards improving conditions of business, and country introduces it by the laws and regulations in accordance with social-political goals. Political innovations are also called institutional, since with its introduction are established new institutions as a support to performing social functions.

Socio-technological innovations represent a set of innovations gathered around one single main product (*e.g.* a computer as a technological innovation and a series of social innovations caused by the computer discovery). The sources of these innovations can be social or technological nature.

Technological innovations basically have new technological advances and are divided into: innovations of products or services and innovations of process.

For the purpose of the paper we will use division of innovation adopted by the Organization for Economic Cooperation and Development (OECD) and cites next division of innovations (Stošić, 2007, p. 12): product/service innovations, process innovation, innovations of organization and marketing innovations.

Product innovation represents introduction of products/services that are completely new or significantly improved, regarding its characteristics or purpose (Stošić, 2007(a), p. 12).

Service innovations are also very important given that in recent years technology has become increasingly important in services, which contributes to the exponential growth of this sector and it allows modern organizations to improve its efficiency, effectiveness and use strategic innovative approach. Innovations of the process represent application of new or significantly improved production methods, which can consist of changing equipment, changing software, organization or production technology, or in all these areas. Innovation of the process aims at the increase of production efficiency *i.e.* reduction of costs per unit of products.

Innovation of the organization or organizational innovation represents the implementation of the new method of organization in the company, organization of the work environment or external relations.

4. Competitive advantage of small and medium-sized enterprises

Competition is a concept that can be seen from a number of different perspectives that mutually reflect each other. So we can talk about the competitiveness of products, the competitiveness of the company, the competitiveness of the economy and the competitiveness of the national economy. Since SME's in modern market economy are the foundation of the national economy of the country, their economic growth and development, competitiveness and adaptation to changes in the environment are crucial for the entire economy. Long-term ability of the enterprise to be competitive is reflected in the fact that if enterprise is efficient, if it offers products/services of high quality at the market, and if it is sensitive to the requirements of customers and if it is capable of introducing or innovating new things into the business. Successful product or process innovations provide to the enterprise with a variety of competitors. This special feature allows the enterprise to set higher prices or lower costs compared to competitors.

Continuous activity in product innovation, that is, technological procedures that shorten the life of products or technology, narrows ability of the competitors to imitate. Accordingly, it can be said that successful research and development activity is the main pillar in achieving competitive advantage of the enterprise (Šehić, 2002, p. 170). The process of technological innovations through research and development activities of the enterprise takes place into several stages: identification of opportunities, formulation of ideas, problem solving, prototype solution, commercial development, technology of use and/ or expansion.

The task of management is to find appropriate answers to different managerial issues in each of the mentioned phases, while investing into technical and technological efforts, taking into account the internal organizational context, as well as the strong influence of the external technological and market environment. Managing innovative enterprise activities is a complex task that involves the effective integration of people, organizational processes and plans. These activities should ultimately contribute to the technological innovation and better position of the enterprise in relation to its competitors.

The most important forms for a successful innovative activity are (Quinn, 1985, p. 73): appropriate atmosphere and vision, market orientation of innovative activity, small flat organization of enterprises, multiple research methods, diversified results of research development activity and interactive learning.

When it comes to innovations as a result of I&R function, the inevitable topic is its connection with marketing. The coordination between researcher and marketing staff is necessary at the time of forming the idea of innovative solution, all the way to their commercialization, as an innovation (Šehić, 2002, p. 178).

In order to achieve continuous improvement of the competitive position of SME's in BiH, it is necessary to analyze the existing situation of those enterprises. We will analyze the current situation using a qualitative analytical instrument - SWOT analysis.

SWOT analysis represents an acronym for strengths, weaknesses, opportunities and threats of the SME's. The goal of each enterprise that applies this analytical method is to minimize the weaknesses, improve strengths and their position in the market, exploit each identified opportunity, and reduce threats that can arise both from the internal and external environment of the enterprise.

The SWOT analysis of SME's in BiH is presented below.

Table 1. *SWOT analysis of the development of Bosnia and Herzegovina economy - small and medium-sized enterprises*

S STRENGTHS	W WEAKNESSES
- Natural resources (minerals, ores and metals) - Possession of attractive real estates and fixed assets, and tangible assets out of use - Flexibility and adaptability of the SME's - Relative stability of the internal and external value of the currency - The geographical position of BiH - Many years of industrial tradition	- Long deadlines for registration SME's - High founding expenses - Lack of programs that will support the establishment, growth and development of SME's - Difficulties in obtaining loans for the establishment, growth and development of SME's - Delay in the payment of SME subventions - Lack of free advisory services - High cost of renting business premises Extremely high fiscal and para-fiscal charges for SME Insufficiently built traffic infrastructure - Dated e-equipment - Non-adjusted education system with the market The obstacle related to the fiscalization of craftsmen and micro entrepreneurs - High level of corruption and gray economy on the BiH market
O OPPORTUNITIES	T THREATS
- High degree of unused natural wealth Stimulation of the development of tourism at the macroeconomic level - Increased trend of use of information technologies Restructuring and more efficient organization, reallocating workers to increase productivity and better business results - The 21st century is a century of innovations (Innovation Management)	- Regardless of the natural potential, the country is based on imports, and not on exports - Unfair competition in domestic and foreign markets - Total investment, loan funds, high interest rates - Lack of government measures of macroeconomic policy and protection of domestic production - Recession and economic crisis

Source: Authors' research

5. Methodology of the research

5.1. Research variables and indicators

The aim of the paper is to research and determine all the relevant theoretical, methodological and empirical characteristics of innovative SME's activities

in order to achieve competitive advantage in the chosen market niche. The overall aim of the research is usage of scientific methods in order to determine whether innovations and innovativity are sufficiently represented in SME's, or whether innovations have a significant impact on SME's competitiveness.

In accordance with the overall research objective, we have defined the central research hypothesis H_0: *There is a statistically significant impact of innovation activities on* SME's *competitiveness* and two working hypotheses: H_1: *There is a connection between technological innovation activities and competitiveness of* SME's *and H_2: There is a connection between non-technological innovations activities and* SME's *competitiveness*.

Starting from the central research hypothesis, we decided that innovative activities are an independent variable, and the competitive advantage of SME's is a dependent variable. In order to check the central research hypothesis, indicators of independent variables are determined: technological and non-technological activities. On the other hand, indicators for measuring dependent variables are: strategy and enterprise competitiveness.

5.2. Research methods and data sources

As part of the elaboration of certain theoretical and methodological starting points of the observed problem, and certain applicative considerations, in the paper are used: induction and deduction method, analysis and synthesis methods, hypothetical-deductive method, analytic-deductive method, comparative method, logical conclusion method, understanding and interpretations and methods based on statistical analyzes with a systematic approach to research. Empirical research was conducted based on the collecting primary data using field research, using test methods, and by using a highly structured questionnaire as a data collection form. In the questionnaire the Likert scale was used with a five levels of measurement. Primary data were collected on the basis of a controlled random sample, and respondents were selected on the basis of availability. The research included SME's in Zenica-Doboj Canton, Tuzla Canton and Republika Srpska.

5.3. Determination of sample type and size

The data collection was made on the basis of a proportional stratified sample, since it falls into the random sampling category and allows it to evaluate

the degree of reliability of the conclusions of the researched parameters. Empirical research was conducted on a sample of 30 respondents (SME's), and it covered three strata (first stratum: SME's in the Zenica-Doboj Canton, second stratum: SME's in the Tuzla Canton area and the third stratum: SME's in the Republic Srpska). When it comes to selection of SME's, a random sample was used, taking into account the coverage of the different product-service groups within the SME's, in order to identify the current state of SME's in the field of research.

5.4. Results, interpretation and discussion of empirical research

The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) and Bartlett's Test of Sphericity are used in order to test the reliability of the factor analysis results. Critical values below which it is not advisable to use a multivariate analysis is in the case that KMO<0,500, or when the coefficient of Bartlett's Test of Sphericity has a value of p<0.05. Main components were analyzed and Varimax Factor Rotation were used in the implementation of the factor analysis. When extracting the factors, the unit root method was used, that is, the Kaiser criterion, according to which only the main components are used that correspond to the initial values greater than 1.

Table 2. *KMO and Bartlett's Test of Sphericity for claims on innovative SME activities*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.559
Bartlett's Test of Sphericity	Approx. Chi-Square	178.222
	df	91
	Sig.	.000

Source: Authors' research

The results presented in the Table 2 show that the coefficient of Bartlett's Test of Sphericity is statistically significant because the value of p<0.05, as well as KMO value of 0.559, create prerequisites for applying the analysis of the main components.

Table 3. *Analysis of the main components for claims on innovative SME activities*

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.416	31.544	31.544	4.416	31.544	31.544	3.320	23.715	23.715
2	2.337	16.691	48.235	2.337	16.691	48.235	2.164	15.457	39.171
3	1.386	9.902	58.137	1.386	9.902	58.137	2.044	14.599	53.770
4	1.278	9.125	67.263	1.278	9.125	67.263	1.889	13.493	67.263

Source: Authors' research

By applying the above mentioned criteria, four components are extracted which in the cumulative explained a 67.263% of the variance. After extracting the variables by analyzing main components, it was carried out rotation of the components using Varimax method with Kaiser normalization, and these methods using six iterations separated factors with the level of factor saturation as it was presented in the Table 4.

Table 4. Matrix of the factor structure of innovative activities after Orthogonal Varimax Factor Rotation

IA	Rotated variables 1-14 (innovative activities)	Factor structure (Component matrix)			
		1	2	3	4
7.	The enterprise has technology, knowledge and competent employees to speed up business processes.	**.877**	.112	.130	.067
8.	The enterprise is computerized and business processes are clearly described and documented.	**.840**	.214	.149	.060
6.	The process of developing a new product/service ends on time and with the planned budget.	**.776**	.052	-.128	.313
9.	Employees are competent and professionally carry out business processes and there is also a team work between employees.	**.720**	.044	.273	.150
10.	The enterprise is customer-oriented and explores the market in that direction and plans products/services on time	**.673**	.018	.092	.124
11.	Business processes are adapted to the needs and demands of customers.	.224	**.859**	-.043	-.138
12.	Competition is always a step ahead of the enterprise, although the marketing function sends information on time about wishes and needs of customers towards the management.	-.057	**.741**	-.175	-.077

3.	The enterprise is organized as a research-development function.	.212	**.684**	.015	.371
1.	The structure of the organization is such that every employee can contribute to business improvement.	.160	.225	**.804**	-.126
4.	The communication from top to bottom and vice versa is fast and efficient.	.162	-.233	**.776**	.202
13.	Customers are satisfied with products/services.	.057	-.219	**.645**	.222
2.	Achieved business results shall satisfy all interested stakeholders (owners, managers, directors, employees, customers, suppliers and other stakeholders).	.239	-.112	-.077	**.811**
5.	By developing new ones or by improving existing products/services, an advantage over the long-term competition is achieved.	.128	-.038	.382	**.690**
14.	In the enterprise, special attention is paid to employee training through workshops, seminars, trainings, *etc*.	.201	.422	.237	**.586**

Source: Authors' research

Extracted factors represent an independent research variable, and we will present which variables represent them, assign names and abbreviations, and determine which types of innovative activities they belong to in the Table 5.

Table 5. *Independent research variable*

Factor	Variables	Title	Abbr.	Innovative activity
1	IA6, IA7, IA8, IA9, IA10	Process innovations	IPR	Technological
2	IA3, IA11, IA12	Marketing Innovations	MIN	Non-technological
3	IA1, IA4, IA13	Innovation Organizations	OIN	Non-technological
4	IA2, IA5, IA14	Products/services Innovations	PSI	Technological

Source: Authors' research

In the table 6 are shown the values of KMO and Bartlett's Test of Sphericity for claims about strategy and competitiveness.

Table 6. *KMO and Bartlett's Test of Sphericity for claims about strategy and competitiveness of SME's*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.811
Bartlett's Test of Sphericity	Approx. Chi-Square	117.868
	df	28
	Sig.	.000

Source: Authors' research

The above presented results satisfy the criteria for applying the analysis of the main components.

Table 7. *Analysis of main components for claims about strategy and competitiveness of SME's*

Component	Initial values			Extracted sums of the squared load		
	Characteristic values	Percentage of variance	Cumulative percentage of variance	Characteristic values	Percentage of variance	Cumulative percentage variance
1	4.452	55.648	55.648	4.452	55.648	55.648

Source: Authors' research

Using the above mentioned criteria, one component is extracted which in the cumulative explains 55.648% of variations of the observed variables. As only one factor was extracted, the orthogonal Varimax Rotation was not performed. The extracted factor is dependent research variable and it is consisted of the following variables: SC15, SC16, SC17, SC18, SC19, SC20, SC21 and SC22, and this factor will be called competitiveness (COM).

Table 8. *Dependent research variable*

Factor	Variables	Name	Abbr.
1	SC15, SC16, SC17, SC18, SC19, SC20, SC21, SC22	Competitiveness	COM

Source: Authors' research

Using the Cross Tabulation procedure, we examined the relations between the independent and the dependent variable. Cross Tabulation procedures are just one of a number of statistical methods that deal with the question of linking variables. Variables that we crossed, we set in the following relations listed in Table 9.

Table 9. *Crossing table/contingency variables*

Independent variable	Dependent variable	Value Hi square test	Innovative activity	Conclusion
Process Innovation (IPR)	Competitiveness (COM)	.369	Technological	There is no statistical significance
Marketing Innovation (MIN)		.026	Non-technological	There is a statistical significance
Organizational Innovation (OIN)		.696	Non-technological	There is no statistical significance
Product/Service Innovation (PSI)		.015	Technological	There is a statistical significance

Source: Authors' research

When calculating the crossing of variables using program for statistical processing of data SPSS 23, it was requested a calculation of the Pearson Chi-Square. Chi Square is a test that calculates whether the crossing of the selected variables is statistically significant.

According to the convention, when the value of this parameter is less than 0.05 ($p < 0.05$), this indicates that there is a statistical significance between the variables that we crossed. If the value of the Chi Square is greater than 0.05 ($p > 0.05$) then there is no statistical significance between the observed variables. According to the obtained results, we can conclude that in the surveyed SME's there is a statistically significance related to technological activities in product/service innovation and competitiveness, as well as for non-technological activities related to innovations in marketing and competitiveness. Also, the test showed that in the surveyed SME's there is no statistical significance in the process of innovations and organizational innovations in their relation to competitiveness.

After completed correlation analysis, we will present the results of Pearson's Correlation coefficient and level of significance in Table 10. The significance level of 0.01 means that the probability of the observed connection between the variables occurs as a consequence of the 1% case, while the significance level of 0.05 means that this probability is 5%.

	COM	IPR	MIN	OIN	PSI
COM	1.000	.340	.434*	.062	.495**
IPR	.340	1.000	.241	.083	.580**
MIN	.434*	.241	1.000	-.218	.189
OIN	.062	.083	-.218	1.000	.122
PSI	.495**	.580**	.158	.260	1.000

Legend:
*. Correlation is significant at the level of 0.05 (2-tailed)
**. Correlation is significant at the level of 0.01 (2-tailed)

Source: Authors' research

Correlation analysis has confirmed the connection between innovative activities and competitiveness, *and we can accept working hypothesis H_1: There is a connection between technological innovative activities and competitiveness of SME's and H_2: There is a connection between non-technological innovation activities and the competitiveness of SME's.* In the following text we will use Stepwise (step by step) a multiple regression analysis for proving main research hypothesis. Independent variable in research is IPR, MIN, OIN and PSI, while the dependent variable is COM. Stepwise regression analysis will discriminate variables that do not have statistical significance and it will offer to us a model (models) that will in the best way show intensity of the connection between variables of the research. When the value R in the model is greater than 0.6 then we are sure that it is about high intensity connectivity, while when the value R ranges from 0.4 to 0.6 then it is about lower intensity of connection.

Table 11. *Models of stepwise regression analysis*

Model	R	R Square	Corrected R square	Standard error estimation
1	.495	.245	.218	.723
2	.605	.365	.318	.675

Source: Authors' research

According to the obtained results of the model 1, this model is lower intensity connection (R= 0.495). The coefficient of determination of the R square tells us how much the proportion of the variance of the criteria can be explained on the basis of a set of variables.

In the model 1 the value R square is 0.245, which means that 24.5% of the dependent variable is explained with the independent variable.

In the model 2, it is about high intensity of connectivity (R=0.605) and a coefficient of determination R is a square of 0.365, which with an independent variable explains 36.5% of the dependent variable. ANOVA's results show us the level of significance via the F-test. In this case, in both models a level of significant is less than 0.5%, thus *accepting* the main research hypothesis that "*there is a statistically significant impact of innovative activities on the competitiveness of SME's*". The results of ANOVA show us that the predictors in model 1 are constant and factor PSI (product/service innovation), while predictors in model 2 are: constant, PSI (product / service innovation) and MIN (marketing innovation).

Table 12. *ANOVA[a] results using stepwise regression analysis*

Model		Sum of squares	The degree of freedom	The main squares	F-test	Significance
1	Regression	4.748	1	4.748	9.095	.005[b]
	Residual	14.618	28	.522		
	Total	19.367	29			
2	Regression	7.077	2	3.539	7.774	.002[c]
	Residual	12.289	27	.455		
	Total	19.367	29			
Legend:	a) Dependent variable: COM b) Predictors: (Constant), PSI c) Predictors: (Constant), PSI, MIN					

Source: Authors' research

Since the main research hypothesis has been accepted, it is necessary to determine how many each factor in models contributes when it comes to achieving the competitiveness of SME's.

Table 13. *Contribution of the connection of variables in the models of stepwise regression analysis*

Model B		Non-standard coefficients		Standard coefficients	t-test	Significance	VIF
		Standard error	Beta				
1	(Constant)	1.591	.886		1.796	.083	
	PSI	.596	.198	.495	3.016	.005	1.000
2	(Constant)	1.228	.843		1.457	.157	
	PSI	.515	.188	.428	2.743	.011	1.037
	MIN	.243	.107	.353	2.262	.032	1.037

Source: Authors' research

On the basis of the obtained results, it can be concluded that in model 1 the factor PSI (product/ service innovation) is only statistical significance related to the factor COM (competitiveness).

The assessment factor of the value B is positive. Two statistically significant factors in the model 2 are: PSI (product/service innovation) and MIN (marketing innovations), and in this model the assessment factor of the value B is positive.

Besides results interpretation of the importance some of the factors it is necessary to question is there a problem of multicolorarity. The value of this coefficient for both models varies from 1,000 to 1,037, which is considered to be adequate values (VIF <5).

Using previous results, multiple regression functions are formed:

COM = 1,591 + 0,596IPS for model 1,

and

COM = 1,228 + 0,515IPS + 0,243MIN for model 2.

6. Conclusion

Correlation analysis has confirmed the connection between innovative activities and competitiveness, and by using correlation analysis we can accept working hypothesis H_1: There is a connection between technological

innovative activities and competitiveness of SME's and H_2: There is a connection between non-technological innovation activities and the competitiveness of SME's. ANOVA's results have shown us the level of significance via the F-test.

In both models, a level of significant is less than 0.5%, thus accepting the main research hypothesis that: "There is a statistically significant impact of innovative activities on the competitiveness of SME's". The results of ANOVA show us that the predictors in model 1 are constant and factor PSI (product/ service innovation), while predictors in model 2 are: constant, PSI (product/ service innovation) and MIN (marketing innovation). Scientific contribution of the paper is seen in its improvement and development of the awareness about importance of innovation and innovativity as foundation of competitive advantage of the SME's.

The results of the conducted research can be used for an insight in the real state of innovativity of the SME's and its commitment to use innovations in order to achieve competitive advantages. In order to use conclusions of this research efficiently it is necessary to take into account a certain limitations of the research. First of all, generalization based on the one sample, regardless on its size, is always problematic. In the sample should be involved all registered SME's in the BiH. Besides that, as recommendation for other research it is necessary to do a research about absolute and comparative advantage of the BiH, and identify and invest in those SME's that have a high potential for growth (gazelle).

Strengthening of SME's would imply additional employment of people, reduction of budget deficit, and increase of export (reduction of the trade deficit) and in the end it would prevent brain drain from BiH. It is important to emphasize that by using factor analysis all key components of the innovative activities have been identified, however there isn't any possibility that by using this method we access to more detail observation.

The conclusion for BiH is strengthening of the SME's, which is the basic driving force of the state. BiH is a transitional country with a relatively low level of competitiveness. According to the Competitiveness Report for 2016, BiH is ranked 107th with a score of 3.8. Reasons are numerous: unprofessional executives of managerial positions, the focus of the business is not directed towards standardized management systems, lack of continuous contact with

customers, corrupt behavior of employees, non-transparency of business, inefficiency of institutional and technical capacities in order to make more use of innovation and innovativity as a product with an aim to achieve the greater competitiveness of SME's as well as the lack of interest of the institutions, in order to achieve the overall progress of the SME's sector on the way to the European Union.

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PRELIMINARY MODEL FOR IMPROVEMENT OF SKILLS AND KNOWLEDGE ACCORDING TO LABOUR MARKET NEEDS

PRELIMINARNI MODEL UNAPREĐENJA VJEŠTINA I ZNANJA PREMA POTREBAMA TRŽIŠTA RADA

Abstract

The Una-Sana Canton, as well as Bosnia and Herzegovina, is faced with the high unemployment rate. On the other hand, in the Una-Sana canton area, there are companies, which have been growing in recent years, and are in position to make new business ventures and thus generate new jobs. Very often, these companies encounter difficulties in selecting and employing people, and their rapid involvement in business processes. One of the biggest problems faced by this process is unprepared, unqualified or, in other words, uncompetitive labor force. Hence, labor force which has formal education, but still do not meet the labor market needs. The main purpose of this paper is to present the model for improvement of skills and knowledge of labor force as an answer to incompatibility between education and labor market needs.
In the first part, the paper gives an insight into the theoretical framework of knowledge management and management of human resources, the review on the legal regulation on lifelong education and the state on the labor market. The second part of the paper presents research that involves seven companies with their concrete needs for specific profiles of the qualified labor force. Besides the mentioned companies, the second part of the paper identifies other stakeholders as well as their interrelationships to establish a preliminary vocational training model according to

the concrete labor market needs. Attention will be given to the recommendations and implications for further research in making the general model for improvement of skills and knowledge according to the labor market needs.

Sažetak

Unsko-sanski kanton, kao i cijela Bosna i Hercegovina, suočeni su sa visokom stopom nezaposlenosti. S druge strane, na području Unsko-sanskog kantona, postoje poduzeća, koje posljednjih godina bilježe rast, te se nalaze u prilici da naprave nove poslovne iskorake i na taj način generiraju nova radna mjesta. Vrlo često ova poduzeća susreću se sa poteškoćama kod odabira i zapošljavanja lica, te njihovog brzog uključivanja u poslovne procese preduzeća. Jedan od najvećih problema s kojim su u tom procesu suočeni jeste nespremna, nekvalificirana ili drugim riječima nekonkurentna radna snaga. Dakle, radna snaga koja ima formalno obrazovanje, ali isto ne zadovoljava potrebe tržišta rada. Glavni cilj ovog rada je predstavljanje modela unaprijeđenja vještina i znanja radne snage kao odgovor na nekompatiblnost između obrazovanja i potreba tržišta rada.
U prvom dijelu, rad daje uvid u teorijski okvir upravljanja znanjem i ljudskim resursima, osvrt na zakonsku regulativu obrazovanju odraslih i stanje na tržištu rada. Drugi dio rada prikazuje istraživanje kojim je obuhvaćeno sedam poduzeća sa njihovim konkretnim potrebama prema određenim profilima kvalifikovane radne snage. Osim pomenutih poduzeća, drugi dio rada, identifira i ostale dionike, te njihove međusobne veze za uspostavu preliminarnog modela stručnog usavršavanja i prekvalifikacije radne snage prema potrebama konkretnog tržišta rada. Posebna pozornost u radu dat će se preporukama i implikacijama za dalje istraživanje u izradi općeg modela unapređenja vještina i znanja prema potrebama tržišta rada.

1. Introduction to knowledge management and management of human resources

The Una-Sana Canton, as well as Bosnia and Herzegovina, is faced with the high unemployment rate. On the other hand, in the Una-Sana canton area,

there are companies, which have been growing in recent years, and are in position to make new business ventures and thus generate new jobs. Very often, these companies encounter difficulties in selecting and employing people, and their rapid involvement in business processes. One of the biggest problems faced by this process is unprepared, unqualified or, in other words, uncompetitive labor force.

Changes and developments caused by the time itself, take on itself also the changes in significance and role of human resources and management functions, because human resources have become the main resource of each organization. It is very important to emphasize that the continually learning is that what enables the company's business success, and who really wants to succeed must constantly learn new things. This exactly points that knowledge and related intellectual capital are one of the most important sources of competitive advantage of modern enterprises and the driving force of business success (Theriou, Maditions & Theriou, 2011).

However, driving this way it is necessary to have a change in the internal form and process and interaction between management and our educational institutions, their mobility and flexibility in leaving traditional moulds that counteract changes and realization of humanistic management, which will be find in the organizational structure the appropriate balance between the goals of all human resources, which are part of the organization itself and the needs of the labor market.

Dilworth (2001) points out that studying the development of human resources has been given since the 1960s and is explained by various definitions. Although these definitions are mutually different, they ultimately come to the fact that they all contain the concept of development of people, associations and organizations. Griffin (2010) cites a modern definition that suggests that disciplines such as human resource development can be considered strategic change management areas, the area of learning process integration, knowledge management, career development, team building, leadership development, application of technology in the human resource development, and others. Thus, the development of human resources means every process or activity that initially or for a longer period of time has the potential to develop workplace knowledge, productivity, and satisfaction for the benefit of an individual, group or team, organization, or ultimately whole humanity.

Although we know that some authors have warned knowledge as a production factor some decades ago, knowledge as a management element has become the area of serious scientific research and vocational endeavours in the company for the last ten years. From then on, more and more companies are aware that knowledge is a key business dimension, which can be a valuable competitive advantage for the company. Today, in successful companies, knowledge is valued and systematically focused on supporting business processes. For such an attitude of management towards knowledge there is a special concept developed known as "**knowledge management**" (Webb, 1998). In additon, also P. Drucker was written already in 1995, and he said that knowledge was "the only significant economic resource", therefore the processes of creating and acquiring, transferring, using and utilizing knowledge needed to be effectively directed and guided. Knowledge management is a great organizational and technical challenge, because it requires the development of a proper human relationships network and its effective inclusion in new technological opportunities.

When we talk about the need of improving skills and knowledge according to the needs of the labor market and their alignment, it is very important, on the basis of the analysis and synthesis of the existing literature and the research done, to determine the impact factors of successfulness of each organization. In order to determine the factors of successfulness of management as well as management of human resources and knowledge management, we need to be aware of the fact that human resource management and knowledge management is a very complex relationship of human factors and technology relationship, and that the skills and knowledge are subjective categories, because each organization only defines the positive skills and knowledge that add value to it.

Skyrme and Amidon (1997) state seven key factors, which in their opinion affect the success of human resources management and knowledge management programs. These are, above all, a strong link between vision and organization, knowledge management, culture of creation and exchange of knowledge, continuous learning, good development of technological infrastructure and systematic knowledge process.

Artail (2006) describes related the influencing factors primarily on the success of knowledge management and combines them into the following categories: loyalty, support for management and creation of an appropriate

organizational climate, knowledge management strategy, loyalty and user support, appropriate technological infrastructure, dissemination of information and error learning, user education, the availability of resources of knowledge and knowledge, connectivity of knowledge and business process, and the possibility of information tools that connect well with users and bidders.

Based on the aforementioned findings we can conclude that different authors in their theoretical and empirical research come up with similar conclusions about what are the influential factors on the success of human resources management and knowledge management. As theoretical and empirical research in areas of human resources management and knowledge management emphasized the importance of factors affecting their successfulness and thus correlation indirectly through the organization on the labor market, like that in 2000 the European Council concluded in its recommendation that is necessary to define basic skills which are required for lifelong learning as a benchmark for European responses to globalization and transition to knowledge-based economics, and pointed out that people are the main force in Europe.

They also point out the framework for lifelong learning as competences and qualifications, adopted by European social partners in 2002, underlines the need for companies to adapt their structure more quickly in order to remain competitive. They emphasize the importance of teamwork, reduction of hirarchy, transfer of responsibility and greater need for multiple tasks, leading to the development of learning organizations.

Paradeise (2003) in essei wrote that sociologists of work have at least one idea in common: work is not a standard factor of production, as capital or raw materials are. Management experts, social psychologists, specialists in ergonomics, as well as historians and some economists would also agree. The whole historical drama of capitalism is rooted in this idea.

According to available sources, improving flexicurity in the labour market and adaptability to various occupations clearly linked to skills transferability is an issue which has received scant attention and on which few information sources are available. This shows that awareness of this problem is limited. The following description of practices, procedures, methods, etc. which serve to improve mobility in the labour market via skills and their transferability is based on relevant literature and enriched with the results of an EU survey and assorted good practice examples. Educational institutions some methods

to promote labour mobility through transferable skills: Self-awareness, Career counselling, Assessment centre (AC/DC), Coaching, Mentoring, ICT-applications, Extracurricular activities, Job-search skills, *etc.* (Chenic, Angelescu & Gheorghita, 2012).

The provisions of the Law on Education of Adults in the Una-Sana Canton set out the basic principles of adult education, namely lifelong learning, rational use of educational opportunities, freedom and autonomy in the choice of ways, forms and methods, and quality assurance of educational provision. The same law defines the goals of adult education. One of the goals of adult education is to enable further education and training, *i.e.* opportunities for further training, vocational training and continuous professional development throughout the entire working life. This law, as well as the recommendations of the European Parliament and the Council, combines the labor market and human resources, their skills and knowledge in a vocational and practical way.

Authors who deal with human resource management and knowledge management describe, explain and point out the importance of a person who possesses different skills, abilities and knowledge as well as the importance of his continuous learning and acquiring new knowledge in a theoretical and empirical way. The aforementioned leads to the conclusion, seen together from the point of view of science and practice, we can identify human resources management and knowledge management with lifelong learning. Numerous authors and works have dealt with this subject, such as Radojković *et al.*, 2012; Hrenova & Teplicka, 2016; Ionela, 2012; Furia *et al.*, 2010; Chenic *et al.,* 2012; Paradise, 2003, and have been consulted during the research for this paper.

Therefore, the main purpose of this paper is to present the model for improvement of skills and knowledge of labor force as an answer to incompatibility between education and labor market needs. There is an urgent need for vocational training and education of unemployed persons in line with the private sector and market requirements, which will be presented by this paper.

2. Background for the implementation of vocational training model

There are approximately 45,000 unemployed people registered in Employment register of the Una-Sana Canton. The unemployment rate is about 60%. Total

number of people in the Una-Sana Canton is 287,621 (Federalni zavod za statistiku, 2015), and approximately 32,000 of those are employed. This means that about 11% of people in the Una-Sana Canton are employed.

The most important employers are companies in the metal, wood processing and tourism sectors. Some of these companies have been growing in recent years, and are in position to make new business ventures and thus generate new jobs. Spirit of enterprise in creative global market in the EU countries is considered to be an essential human skill of the 21st century and that business plays an increasingly important role in economic, social and career development. It seems as an alternative to unemployment (Hrehova & Teplicka, 2016).

Very often, these companies encounter difficulties in selecting and employing people, and their rapid involvement in business processes. One of the biggest problems faced by this process is unprepared, unqualified or, in other words, uncompetitive labor force. Unfortunately, most of the registered labor force is uncompetitive and is not in line with market requirements.[1] Long-term unemployed persons and socially endangered persons do not have the chance to be employed without an appropriate vocational training.

Within this huge number of unemployed there are many long term unemployed with qualifications that are not in line with market requirements, which have almost no chance to be employed. Those persons are surely socially endangered, and need to be educated and trained for new opportunities at the labor market. The process of adjusting these persons to market *i.e.* companies' needs is slow, complex, and expensive. Employers' investments in this segment of business process, causes the linear increase of price per unit of production affecting its competitiveness on the market.

The answer to this issue lies mostly in the reform of education sector in line with market needs. However, that is a long-term measure which preparation and implementation needs much more time than the private sector in these circumstances can afford. Therefore, there is an urgent need for vocational training and education of unemployed persons in line with the private sector and market requirements.

In vocational education and adult education needs for knowledge and skills are: wanted, demanded normative state established by certain system, group

or a person made as a demand, norm or standards of knowledge and skills, differences between needed, wanted, demanded or normative knowledge and skills on one hand and on the other hand knowledge and skills owned by a person at the moment (Radojković *et al.*, 2012).

To respond to the needs of labour market and build the competences of the labour force, the Assembly of the Una-Sana canton through the Ministry of education, science, culture and sports of the Una-Sana Canton adopted in 2013 the Law on Education of Adults to prevent the problem of investors and private sector having trouble finding the appropriate labour force.

Based on the Law on Education of Adults and in cooperation with the private sector and their needs a dozen teaching plans for vocational training have been made. To foster the implementation of the above mentioned Law on Education of Adults as well as to act in accordance with its mission, the Regional Development Agency of the Una-Sana Canton (RDA USC) implemented the project of employment through the vocational training.

How was this project done, who are the main stakeholders and generally based on that experience, the preliminary model for improvement of skills and knowledge according to the labour market needs would be presented in continuation of this paper.

3. Preparation and implementation of the vocational training

The Regional Development Agency of the Una-Sana Canton conducted the research, which included about 40 companies with the potential for further growth, and among them identified the companies that had abilities to expand existing or initiate new production/business processes, but the lack of competitive labor force disenable them in that processes.

These companies have development plans based on multiannual partnership with their customers and have all other preconditions to fulfill planned investments. The obstacle related to the uncompetitive labor force could be solved with the vocational training model according to the specific needs of companies.

Therefore, RDA USC analysed the small and medium sized enterprises sector in Una-Sana Canton and organized meetings in the metal processing

sector, and wood processing sector. Based on the information gathered at the meetings, RDA USC suggested 3 profiles for vocational trainings that are the most applicable for employment in these companies, and that companies face the lack of these profiles on evidence of the Employment office of the Una-Sana Canton.

This will increase the competitiveness of unemployed labour force, and bring closer the labour force to the SMEs. The vocational training model in metal sector will include theoretical learning and practical work, which will be in accordance with the Law on Education of Adults of the Una-Sana Canton. In order to provide successful implementation, all relevant institution/ stakeholders must be included in this process, such as the Government of the Una-Sana Canton, the Ministry of education, science, culture and sports of the Una-Sana Canton, the Employment Office of the Una-Sana Canton, the Employment Institute of the Federation of BiH, municipalities of the Una-Sana Canton, specialized schools, the NGO sector, and the SME sector.

Participation of each institution will be provided according to the possibilities. Besides the financial support, the institutions will provide their services, for example a specialized school and the Ministry of education, science, culture and sports of the Una-Sana Canton will provide formalization of the vocational training, the Employment office of the Una-Sana Canton and the Employment Institute of the Federation of BiH will elect persons who have preferences to the industry in which persons will be employed, the company will provide the space and the resources for the training, as well as the high school.

Regional Development Agency of the Una-Sana Canton will be responsible for the implementation and monitoring of vocational training model.

3.1. Job access model profiles and type of vocational training considered under job access model

The Regional Development Agency of the Una-Sana Canton suggested 3 profiles/Job Access Models for vocational trainings that are the most applicable for employment based on previously analysed small and medium sized enterprises companies. Short description of the job access models profiles and rational for demand are as follows:
1. JAM (Job Access Model) 1, Welders

- Key area of development/investments in the Una-Sana Canton is in metal sector. As announced from companies in metal sector, the biggest demand will be in area of skilled welders. Therefore, 85 welders will be educated under JAM 1.
- The vocational training will include theory and practice. This program is initiated and developed by the high school.
2. JAM 2, CNC operators
- As the JAM 1 introduced, metal industry requires skilled labour force for working on CNC machines. Under this model will be 10 persons educated.
- The vocational training will include theory and practice according to the general requirements in this field. Specific requirements only if the company is engaged in this education model with teachers and necessary machines. High school should make a proposal for this program in general.
3. JAM 3, Installer of PVC joinery
- Specific companies showed interest in this area, and would like to educate and employ skilled labour force. In this model, there will be 15 persons educated.
- The program for this model will be developed and adopted by the Ministry of education, science, culture and sports of the Una-Sana Canton. Education will be implemented in accordance to this program and company's requirements.

The programs for vocational trainings are prepared and adopted by by the Ministry of education, science, culture and sports of the Una-Sana Canton, according to high schools proposals, specific industry, and needs of specific companies. Also, by the Ministry of education, science, culture and sports of the Una-Sana Canton will be monitoring the whole process, according to adopted Law on education of adults.

Every candidate will get a certificate recognized by the Ministry of education, science, culture and sports of the Una-Sana Canton. Organisers of the education will be local vocational high schools in cooperation with the company. Authorized organizations will organize theoretical teaching, and practical education/trainings according to general and specific needs.

The vocational training and education will last 5 months according to the defined and adopted Vocational programs and the Law on education of adults. Raw materials expenses and trainer's fees will take the biggest part in costs of this process. The vocational training model will have an employment rate of approximately 60% of educated participants.

The reason of the high employment rate is that the vocational training model will be based on real needs of the selected small and medium sized companies included in model and that the selected candidates will have preferences to the jobs for which the training and education is organized.

The elements of each specific vocational training/education will be defined after recognition and definition of real needs of the potential employer company.

3.2. Results of implementation of vocational training

The Regional Development Agency of the Una-Sana Canton analysed the small and medium sized enterprises sector in Una-Sana Canton and organized meetings. Based on the information gathered at the meetings, RDA USC suggested 3 profiles/Job Access Models for vocational trainings that are the most applicable for employment in these companies. Companies that expressed the desire and need to participate in the vocational training project signed the contract with the Regional Development Agency of the Una-Sana Canton. The Employment Office of the Una-Sana Canton and the Employment Institute of the Federation of Bosnia and Herzegovina helped RDA USC to reach unemployed persons which have preferences to a specifically work place. The vocational training included theory and practice according to the general requirements in the specific field *i.e.* Job Access Model.

Table 1. *Summary overview of persons on vocational training/employed by the companies*

Summary overview of persons on vocational training/employed by the companies	Total no. of persons trained	Welders	CNC operators	Installer of PVC joinery	Total no. of persons employed
"A.D.S.I. MONTAŽA" Ltd. Velika Kladuša	15	15	-	-	15
"Miral PVC" Ltd. Velika Kladuša	15	-	-	15	13
"Č. J." Ltd. Bihać	30	28	2	-	20
"Novi most" Ltd. Bosanska Krupa	11	8	3	-	6
"HH Inox" Ltd. Cazin	19	10	9	-	0
"Civić2 Ltd. Cazin	8	8	-	-	6
"Inox CT" Ltd. Cazin	12	12	-	-	8
TOTAL	**110**	**81**	**14**	**15**	**68**

Source: Authors' research

As shown in the Table 1 above in seven companies 110 persons trained and educated according to market needs out of which 68 persons are employed. The vocational training model proposal predicted employment rate of approximately 60% of educated participants. The Regional Development Agency of the Una-Sana Canton was responsible for the implementation and monitoring of vocational training model.

4. Discussion of results, conclusion and recommendations

As obtained results have shown, and also the consulted papers during the research, the vocational training model was specially adapted to each company, i.e. to the specific needs of the companies. There was not unique program developed and thus the anticipated number of trained people was employed.

After the implementation of training the question was how to employ the remaining part of trained persons who did not get employment. If all trainees are not employed, is there a need to include some other stakeholder? By the vocational training model, the unemployed persons from the Employment register, will be trained and educated according to the specific needs of companies, which are providing new jobs.

Likewise, the vocational training model will increase employment through: increasing capacities of unemployed labour force and improvement of skills and knowledge according to labour market requirements. It will also increase the competitiveness of unemployed labour force, and bring closer the labour force to the employers. In the implementation process of vocational training model all important institutions/stakeholders must be included. Besides the financial support, the institutions will provide their services.

In general, activities of vocational training model are: education of unemployed persons from the Employment register, employment of socially endangered persons, improving business conditions, creation of pre-conditions in the employers companies for new employment.

Individually, these activities are: defining companies that are able to create new jobs; defining specific needs of companies that can provide new jobs; election of unemployed persons from the Employment register who have preferences to the companies or sectors which is employing; vocational

trainings of unemployed labour force according to the needs of companies that are providing new jobs (job access models); employment of persons who successfully completed the vocational training; creating support to employer companies in the process of employing new persons; facilitating the process of employment. Above mentioned activities will lead to creation of models, which can serve as good practice model. The model can be spread across the country.

This model with participation of local stakeholders in job creation, and workforce employment will become an interesting model in local and regional economic development. The establishment of a system that will facilitate the employment process is very important, and this model of vocational training and employment, with involvement of local stakeholders and partners is a step forward to establishment of a system. The model will also participate to the establishment of long term relationship and cooperation with competent ministry and other local partners.

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Endnote

1   According to a research from the Regional Development Agency of the Una-Sana Canton, which included about 75 key companies in the Una-Sana Canton, mismatch between labour force and market demands appears mostly in the metal and wood processing sectors, but also in other sectors such as tourism.

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THE PYRAMID OF CORPORATE SOCIAL RESPONSIBILITY IN THE COMPANIES OF BOSNIA AND HERZEGOVINA

PIRAMIDA KORPORATIVNE DRUŠTVENE ODGOVORNOSTI U BOSANSKOHERCEGOVAČKIM PODUZEĆIMA

Abstract

The pyramid of corporate social responsibility is a theoretical concept that implies that corporate social responsibility is presented by four dimensions: economic, legal, ethical, and philanthropic responsibility. This concept has significantly influenced the acceptance of the social responsibility in the business world because it questioned the dogma that an individual entrepreneur or enterprise must at the same time be successful, ethical and socially and ecologically responsible. This concept is repeatedly tested in various countries of the world, but there is no evidence of this kind of the research in Bosnia and Herzegovina.

For this reason, paper aims to show the pyramid of corporate social responsibility in the companies of Bosnia and Herzegovina. This will be done by examining and analyzing the attitudes of the company's representatives, regarding the four dimensions of corporate social responsibility.

The results show that companies in Bosnia and Herzegovina follow the ranking of the pyramid of corporate social responsibility. In addition to the conclusion, the paper sets out recommendations for improving the state of corporate social responsibility in Bosnia and Herzegovina.

Keywords: corporate social responsibility, pyramid of corporate social responsibility

JEL: M1, M14

Sažetak

Piramida korporativne društvene odgovornosti predstavlja teorijski koncept koji podrazumijeva da je društvena odgovornost poduzeća predstavljena kroz četiri dimenzije: ekonomska, pravna, etička i diskreciona odgovornost. Piramida korporativne društvene odgovornosti je značajno utjecala na prihvaćanje i širenje pokreta društvene odgovornosti u poslovnom svijetu jer je dovela u pitanje tada prihvaćenu dogmu o tome da pojedinačni poduzetnik ili poduzeće moraju istovremeno biti poslovno uspješni, etični, te društveno i ekološki odgovorni. Ovaj koncept je često empirijski testiran u raznim zemljama svijeta, međutim u Bosni i Hercegovini ne postoji istraživanje o navedenom u kontekstu bosanskohercegovačkih poduzeća. Zbog toga će se u radu prikazati piramida korporativne društvene odgovornosti bosanskohercegovačkih poduzeća i to ispitivanjem i analizom stavova predstavnika poduzeća o četiri dimenzije odgovornosti.
Rezultati pokazuju da bosanskohercegovačka poduzeća slijede rangiranje važnosti odgovornosti shodno konceptu piramide društvene odgovornosti. Pored zaključka, u radu se navode preporuke za unaprijeđenje korporativne društvene odgovornosti u Bosni i Hercegovini.

Ključne riječi: korporativna društvena odgovornost, piramida korporativne društvene odgovornosti

JEL: M1, M14

1. Introduction

In the last couple of decades, there is a growing interest in corporate social responsibility (CSR). Being socially responsible in today's business means carrying out various activities within certain areas of interest for society, but also different stakeholders, in and outside the specific company. By doing so, the company can be socially responsible according to different categories of responsibility, from initial economic responsibilities to holistic philanthropic responsibilities.

Based on the theoretical framework presented in this paper it is possible to state the following hypothesis: The companies in Bosnia and Herzegovina follow the hierarchy of CSR represented by Carroll's pyramid of CSR. This means that companies primarily demonstrate economic responsibility (business, making profit, fulfillment of customers' needs) and the other categories of social responsibility (legal, ethical, philanthropic).

The paper is organized as follows. After the introduction, the first chapter gives a brief overview of the theoretical framework and previous research results, which deal with the issue of CSR and pyramid of CSR in general. The second chapter refers to a methodology of the study, and the third chapter shows the results and discussion. In concluding remarks paper summarized the main findings with adequate recommendations.

2. Literature review

2.1. Theoretical framework

CSR is a relatively young field of study, which for the first time appeared during the 60s of the last century. First ever recorded definition of CSR defines it as a commitment of the company to follow policies, to make decisions and to follow actions that are desirable within the scope and values of our society (Bowen, 2013, p. 6). Later on, Bowen will extend this definition, citing that CSR refers to a set of moral and personal obligations that the employer has to follow, considering policies, decisions, and actions in the context of the goals and values of society (Martinez *et al*., 2016, p. 9). Starting from Sethi's model of social responsibility (Sethi, 1975; Carroll, 1991) created a model of four categories of social responsibility: economic, legal, ethical and philanthropic responsibility. Together, these categories make the pyramid of CSR. Carroll's pyramid had a significant influence on the acceptance of CSR movement in the business community because it challenged the accepted dogma which assumed that individual entrepreneurs and companies must at the same time be business-minded, ethical, socially and ecologically responsible (Letica-Cerjan, 2010).

CSR pyramid assumes that there is a hierarchy of different categories of CSR and that companies can enhance their own position within a particular category. After companies fulfill lower levels of CSR and answer the base needs of shareholders and law demands, then they can move to higher levels of social responsibility, which is beneficial to the entire society (Scilly, 2014). In that hierarchy, primary responsibility is economic responsibility because it is fundamentally related to the company's mission of making profits. The economically responsible company works with the unique purpose of maximizing profits and meeting the needs of its owners (shareholders). In order to survive in the market, the company must be economically responsible to its shareholders and follow the principles of economic activity (efficiency, effectiveness, productivity, and the like). If it does not fulfill its primary,

economic function, then the company inevitably strives to disappear from the market.

Following the Friedman's (1970) argument on social responsibility, and relying on the original economic theory of Adam Smith, it can be concluded that by fulfilling an economic social responsibility, the company provides a social contribution through the fulfillment of consumer needs. In another case, the costs incurred due to the lack of economic responsibility are shifted over a long time to the consumer. Some of the components of this category of CSR include (Letica, 2010, p. 57): maximizing earnings per share, being profitable as much as possible, keeping a strong competitive position, maintaining a high level of operational efficiency, defining the success of an enterprise in the term of its profitability. Legal CSR is on the second level of the pyramid. It implies liability to the law, *i.e.* to the legislator (government).

A legally responsible company fulfills all the legal obligations that it has as a legal person. The main CSR stakeholder at this level is the government that is regulating the activities of the specific company. The company should follow all existing and expected legal obligations regarding its business. There are numerous examples of legal responsibility: from compliance with labor laws through environmental permits and up to the criminal law. Ethical social responsibility emphasizes that it is not enough for a company to be economically and legally responsible that is to answer its own shareholders and the government, but that it must also respect the broader ethical dimension of business.

It is important for a company to clearly define and respect ethical standards and to harmonize its own business according to social values and norms. Unlike economic and legal social responsibility, which are precise in execution, ethical responsibility always implies a challenge in defining concrete rules. The reason for this is ethics itself, which represents a series of different ethical theories, according to the values that it respects and wants to accomplish. Ethical companies usually demonstrate their ethical responsibility by associating with other organizations that help them meet their standards (DK Publishing, 2014, p. 227). Components of ethical responsibility are (Letica, 2010, p. 57): doing business in a manner consistent with social values and norms, recognizing and respecting the new ethical and moral standards that society has accepted, not questioning ethical standards for corporate goals, defined corporate citizenship, recognizing that corporate integrity and ethical

behavior is beyond the mere behavior of laws and regulations. Philanthropic social responsibility is at the top of Carroll's pyramid of CSR and represents a social commitment of the company. By responding to wider social problems, the company is positioned as a true corporate citizen who is ready to help the community within which it operates. Philanthropy has the purpose of signaling to consumers how a company sees itself as part of a wider social structure (Dontigney, 2012). The components of this category are (Letica, 2010, p. 57): doing business in a manner consistent with the philanthropic expectations of society, helping art and applied art, participating in voluntary and charitable activities in the local community, helping private and public educational institutions, helping projects that enhance the quality of the community life.

2.2. Previous empirical studies

After Carroll published his pyramid of CSR, researchers have conducted lots of empirical research to determine the practical credibility of a given model. By doing this, they discovered that there are cultural differences when it comes to ranking of some CSR categories. This will be the basis for criticism of the model, but also the initiative to create better, improved CSR models, like the International Pyramid Model of CSR (Najeb, 2017). In the article "Revisiting Carroll's CSR Pyramid, An African perspective", Visser (2006) uses Carroll's CSR model to explore the nature of CSR in Africa. He found that the hierarchy of the pyramid is economic, philanthropic, legal, and ethical. Visser (2006) also states that Carroll's model has been used to survey in different countries and the importance of the hierarchy of the pyramid has been found different. Also, during the empirical research, the problem of measuring philanthropic responsibility happened. This would be a basis for another critique of the pyramid. Hatfiled stated that Carroll's philanthropic domain is difficult to ascertain and evaluate (Zabin 2013). Strong and Meyer (1992) conclude that while there is strong support for the existence of economic, legal, and ethical components of CSR, it may be appropriate for the philanthropic category to be removed from Carroll's framework.

Regardless of the criticisms presented, numerous researchers have been carried out, so in Tunisia, companies put a philanthropic responsibility in the first place, followed by legal, economic and ultimately ethical responsibility (Ben Noamene & Elouadi, 2015). The study from Malaysia on 457 respondents has shown following ranking: economic, ethical, legal and philanthropic

responsibility. The study emphasizes that gender, race, educational level, work experience and religious factors contribute to differences in CSR perception (Dusuki *et al*., 2008). Another study from Malaysia showed different results, so the philanthropic responsibility is placed in the second place, which is according to Visser (2006), and most probably because of the strong indigenous tradition of philanthropy. Legal responsibility was the third and ethical at the last place (Zabin, 2013). Jamali and Mirshak conclude that a growing body of indication suggests that in developing countries, CSR practice is focusing on philanthropic responsibilities (Jamali & Mirshak, 2007). In Croatia, a theoretical framework for the application of the pyramid of CSR in the field of dentistry has been developed (Letica-Cerjan, 2010, p. 109). When it comes to Bosnia and Herzegovina, there is little research done on CSR. This is a area that is still developing, both in academia and business world. This implies that there is an exceptional need for affirmation of CSR concept (Delić, 2013), which should be a focus of academia, companies, government/regulators as well as general public. Over the last few years, some studies have shown that companies in Bosnia and Herzegovina understand CSR as philanthropy, donations, well-defined employment strategy and business within the legal norms (Ćatić-Kajtazović, 2011). One consumer report stated that most consumers do not perceive companies in Bosnia and Herzegovina as socially responsible companies (Mešanović, 2005). On the other hand, employees in Bosnia and Herzegovina have a positive attitude on social responsibility (Prutina & Šehić, 2016). By examining company representatives and students, it was concluded that the general perception of CSR in Bosnia and Herzegovina is related to behavior that does not jeopardize the companies' stakeholders (Babić-Hodović *et al*., 2008).

3. Research methodology

For the purposes of research, a scientific method of questioning was used, using telephone interviewing (31.25% usable response rate). The sample was made up of 100 representatives (employees) of companies from Bosnia and Herzegovina. The basis for sample structuring was the data from the register of Indirect Taxation Authority of Bosnia and Herzegovina. Using this data, a proportional stratified sample was created. This sample falls into the random sample category. Because employee views were examined, as a stratification criterion, the company's categorization was determined by the number of employees. Thus, three strata have been formed: small, medium and large companies. Interviewed representatives answered questions regarding

different categories of CSR pyramid. The results were analyzed in SPSS software through the use of descriptive statistics. Likert scale was used to measure respondents' perceptions of company's social responsibility.

4. Results and discussion

Research results show that 84% of respondents fully agree that their company has the high level of economic responsibility. Also, 83% of respondents fully agreed regarding the legal responsibility of their company and a total of 82% of respondents fully agrees that their company is ethically responsible. When it comes to philanthropic responsibility, 77% of the respondents fully agree that their company is responsible (by the norms of this CSR category). These results are shown in Table 1.

Table 1. *Respondents' perceptions of CSR*

Question	Strongly agree	Agree	Neither	Disagree	Strongly disagree
Our company is characterized by high degree of economic responsibility.	86%	14%	0%	0%	0%
Our company is characterized by high degree of legal responsibility.	83%	17%	0%	0%	0%
Our company is characterized by high degree of ethical responsibility.	82%	16%	2%	0%	0%
Our company is characterized by high degree of philanthropic responsibility.	77%	20%	3%	0%	0%

Source: Author's research

T-test independent samples were used to investigate possible statistical differences between mean values of answers of male and female respondents, and married and unmarried respondents. As shown in Table 2, no statistically significant difference was found.

Table 2. *T-test independent samples*

Question	Gender	Marital status
	Sig . (2-tailed)	
Economic responsibility	0.365	1.000
Legal responsibility	0.600	0.793
Ethical responsibility	0.353	0.659
Philanthropic responsibility	0.386	0.237

Source: Author's research

Respondents' attitudes regarding the CSR categories are in line with the hierarchy of social responsibility according to the Carroll's theoretical model. Company representatives believe that their company is primarily economically responsible and then legally, ethically and finally philanthropically responsible. With this, a pyramid of CSR in Bosnia and Herzegovina was illustrated in Figure 1.

Figure 1. *Pyramid of CSR in Bosnia and Herzegovina*

Source: Author's research

Research results are in line with Friedman's thesis that the basic mission of the enterprise is primarily of economic nature (Friedman, 1997; Kurtić, 2009). Interestingly, respondents use the "Neither" answer only when it comes to ethical and philanthropically responsibilities of the company.

This points out the complex nature of these CSR categories, but also partly connects to previously showed criticism of the model, regarding philanthropical responsibilities. Within these categories, the dilemma may arise as to whether

the company behaves in accordance with the valid morality and ethics and adequately fulfils its social role (response to social needs and expectations).

5. Conclusion and recommendations

When executing socially responsible activities, companies must choose specific ways and areas to carry out these activities, but also the principles that guide their choice. Accordingly, Carroll's model of CSR offers a hierarchy of different categories of responsibility, expressed in the pyramid of CSR. Depending on the countries and cultures from which companies come, research shows different results when it comes to empirical concordance with Carroll's theoretical model.

Research results in this paper show that Bosnian companies are following the pyramid of CSR and move first from economic to legal, then ethical and eventually philanthropic responsibilities. The basic recommendation of this paper is that companies in Bosnia and Herzegovina should work in the long term to advance certain categories of social responsibility such as ethical and philanthropic responsibilities.

The research suggests that businesses are largely economically and legally socially responsible, which opens up additional space for improvement in higher categories of social responsibility. In doing so, it is necessary to follow the valid moral and ethical norms, and proactively respond to the demands and needs of Bosnia and Herzegovina society.

When it comes to future research in this area, it is recommended to research the hierarchy of CSR on a larger research sample. Namely, the greatest weakness of this paper is reflected in a relatively small sample of 100 companies, which in the future can, in accordance with material resources, be improved.

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THE LABOUR MARKET MATCHING IN MACEDONIA: AN ANALYSIS BASED ON THE SHIFTING BEVERIDGE CURVE

USKLAĐIVANJE TRŽIŠTA RADA U MAKEDONIJI: ANALIZA BAZIRANA NA POMJERANJU KRIVE BEVERIDŽA

Abstract

The matching process between the labour supply and demand represents an important characteristic of the labour market efficiency. From a macroeconomic perspective, the relationship between the unemployment rate and job vacancy rate is represented by the Beveridge curve as an indicator of how well workers are matching with job vacancies in the economy. Although the theory assumes a negative slope of the Beveridge curve, in practice one can find different kinds of shapes. Beveridge curve dynamics can be distinguished between movements on the curve and shifts of the curve. In general, movements on the curve reflect cyclical changes, while movements of the curve are associated with changes in frictional unemployment, i.e. improvement or deteriorations in labour market matching. During the previous period of transition Macedonia has been affected by persistent unemployment that caused substantial human capital depreciation on the supply side. In addition, we have witnessed significant sectoral shifts on the demand side manifested by increased share of employment in the service sector. Although the recent labour market development shows signals of slight improvement in the matching process, many employers

still face difficulties to hire workers with required skills. The problem of mismatch between labour supply and demand in Macedonia has been widely recognised, but up to the present it has not been explored by using the Beveridge curve. The aim of this paper is to explore the dynamics in the matching process in Macedonia by econometrically assessing the shifts of the Beveridge curve. For this purpose we use a quarterly time series data for the job vacancy rate and unemployment rate. The results might be used for designing appropriate policy recommendations that can be undertaken in order to improve the outcomes of the Macedonian labour market.

Keywords: Beveridge curve, labour market matching, unemployment, job vacancy

JEL: J2, J6, C2

Sažetak

Proces usklađivanja ponude i potražnje rada predstavlja važnu karakteristiku efikasnosti tržišta rada. Iz makroekonomske perspektive, zavisnost između stope nezaposlenosti i stope slobodnih radnih mjesta izražena je pomoću krive Beveridža, koja predstavlja indikator za usklađivanje radnika sa slobodnim radnim mjestima u jednoj ekonomiji. Iako teorija pretpostavlja negativan nagib Beveridžove krive, u praksi se mogu naći različite varijante oblika. Kod dinamike krive Beveridža, mogu se razlikovati dvije vrste pomjeranja − pomjeranje po dužini krive i pomjeranje same krive. Generalno, pomjeranja po dužini krive reflektiraju ciklične promjene, dok je pomjeranje same krive povezano sa promjenama u frikcionoj nezaposlenosti, tj. sa poboljšanjem ili pogoršanjem usklađivanja tržišta rada. Tokom prethodnog perioda tranzicije Makedonija se suočavala sa perzistentnom nezaposlenošću, što je uzrokovalo značajnu deprecijaciju ljudskog kapitala na strani ponude. Između ostalog, nastala su značajna sektorska pomjeranja na strani potražnje, koja su se manifestovala u porastu udjela zaposlenosti u uslužnom sektoru. Iako nedavni razvoj tržišta rada daje signale izvesnog poboljšanja u procesu usklađivanja, mnogi poslodavci se i dalje suočavaju sa poteškoćama u zapošljavanju radnika sa potrebnim vještinama. Problem neusaglašenosti između ponude i potražnje rada u Makedoniji je široko prepoznat, ali do sada on nije istraživan pomoću krive Beveridža. Cilj ovog rada je istražiti dinamiku procesa usklađivanja u Makedoniji pomoću ekonometrijske procene pomjeranja krive Beveridža. U tu svrhu korišteni su kvartalni podaci vremenskih serija za stopu slobodnih radnih mesta i stopu nezaposlenosti. U tom kontekstu, uzeto je u obzir nekoliko strukturnih varijabli i politike kao potencijalni faktori koji mogu objasniti efikasnost u procesu usklađivanja rada. Rezultati istraživanja se mogu upotrijebiti u dizajniranju odgovarajućih preporuka za politike koje se mogu preduzeti u cilju poboljšanja ishoda makedonskog tržišta rada.

1. Introduction

Macedonia is among rare countries in the world, where during the past two decades unemployment rate has constantly remained above 30 percent. The sustainability of the extremely high unemployment rate is an inexorable phenomenon that imposes needs for further investigation. According to the composition of the unemployed population by various socio-economic characteristics the empirical analysis reveals striking labour market segmentation, meaning that some segments of the labour force such as youths, less educated workers and some ethnic minority groups face a much higher probability of becoming and/or remaining unemployed than the rest of the labour force (Nikoloski, 2015). In addition, long-term unemployment has significantly contributed to an erosion of skills and motivation of unemployed workers, making them less employable over time. In these circumstances alongside the traditional forms of adjustment in Macedonia have emerged additional mechanisms such as employment in the informal sector, inactivity and emigration (Nikoloski, Pechijareski & Pechijareski, 2012).

The problem of skill mismatch on the Macedonian labour market has been identified since the outset of the transitional process. This is particularly emphasised in the World Bank country assessments in 2003 and 2005, where among other things as reasons for high and sustained unemployment in the country are pointed out the problems related to the human capital acquiring and development (World Bank, 2003; World Bank, 2005). First, the effective skills of workers acquired in the previous socialist system became obsolete and inconsistent with the shifting labour demand. Second, the long duration of unemployment implied increased human capital depreciation. Third, due to the heritage from the previous socialist system the employers in the private sector lacked entrepreneurial skills. Finally, the education system remained rigid and unresponsive to labour market needs. As a consequence, many employers find it difficult to hire workers with required skills despite high unemployment.

The skill mismatch appears to be of significant importance for several labour market actors. The skill mismatch is likely to generate lower job satisfaction for

employees associated with increased stress from work and possibly lower wages. In this context, some labour market segments such as young people entering the labour market, older workers, females, ethnic minorities and the disabled are disproportionately affected by skill mismatches. Furthermore, employers may suffer from lower productivity as skill shortages and skills gaps can potentially lead to a loss of competitiveness. Finally, on the macro level the economy may suffer from a loss of output and lower economic growth (CEDEFOP, 2015).

In the literature there are several approaches for assessing the skill mismatch that can be classified in three broad categories: objective, subjective and empirical. The objective measure is obtained by systematic job evaluation used to determine the precise level of qualifications required to perform particular job. The subjective measure is based on individual perception about the level of education required to perform a particular job. According to the empirical method mismatch occurs when the level of education is more than one standard deviation above or below the mean for education within an occupation (CEDEFOP, 2015). Moreover, the mismatch can be vertical or horizontal. A vertical mismatch is a situation in which the level of education or skills is less or more than the required level of education or skills. The mismatch is considered as horizontal in the case in which the level of educations or skills matches job requirements, but the type of educations or skills is inappropriate for the current job.

Recently, the analysis of the Beveridge curve as an analytical instrument for assessing the labour market matching process has received considerable attention (Aasen, Leszczuk & Pojar, 2016; Bova, Bova, Jalles & Kolerus, 2016; Destefanis & Mastromatteo, 2015). In this context, the aim of this paper is to explore the dynamics in the matching process in Macedonia by econometrically assessing the shifts of the Beveridge curve. In this context, the paper is structured as follows. In section 2 we present the main theoretical background related to Beveridge curve, while section 3 focuses on the empirical analyses based on quarterly time series data for the vacancy and unemployment rates in Macedonia. Finally, in section 4 we summarise the results that are used for designing appropriate policy recommendations.

2. Theoretical background

The Beveridge curve depicts the relationship between the unemployment rate and the vacancy rate for several distinct points in time. Hence, it shows

dynamics of the matching process between workers and vacant jobs. The robust finding across countries shows that this relationship generally is negative (Destefanis & Mastromatteo, 2015; Saglam & Gunalp, 2012). Flows of newly hired workers depend on both unemployment and vacancies in a given economy (Blanchard & Diamond, 1989). The Beveridge curve can be interpreted as the vacancy rate at which the current unemployment rate would be in its steady state. A flow steady state is named since the Beveridge curve involves measurement of flows from one labour force status to another and occurs when these flows do not cause a change in the unemployment rate (Elsby *et al.*, 2012).

Beveridge curve dynamics can be distinguished between movements along the curve and movements of the curve (Bova, Jalles & Kolerus, 2016). The movements along a fixed Beveridge curve are associated with cyclical factors. In this context, the position of the given economy on the curve gives an idea for the state of the labour market, *i.e.* we can study movements in this curve in order to identify changes in the efficiency of the labour market. For instance, as the economy moves into a recession, unemployment goes up and firms post fewer vacancies, causing the equilibrium in the labour market to move downward along the curve. Conversely, as the economy expands, firms look for new hires to increase their production and meet demand, which depletes the stock of the unemployed. In this case, the equilibrium in the labour market would move upward along the curve (Tasci & Lindner, 2010; Bleakley & Fuhrer, 1997).

On the other hand, the shifts in the Beveridge curve are interpreted as reflecting structural changes which affect the matching between vacant jobs and unemployed workers (Valletta & Kuang, 2010). The further from the origin the curve is, the worse the matching process, reflecting that more vacancies are in the economy at the same time as unemployed. In contrast, its closer position with respect to the origin is a sign of improved matching process. Thus, shifts in the Beveridge curve farther from the origin can be a signal of growing skills mismatch because this would mean vacancies and unemployment are growing at the same time. This can be caused by a structural mismatch between labour supply and demand but also by the effectiveness of matching supporting services and geographic aspects (Bouvet, 2012; Tasci & Lindner, 2010). However, the shifts in the Beveridge curve are difficult to interpret since they can be caused by a number of diverse factors such as changes in the intensity of layoffs and quits, changes in labour force participation, *etc.*

The stylised Beveridge curve including the movements along the curve and its shifts are presented on Figure 1.
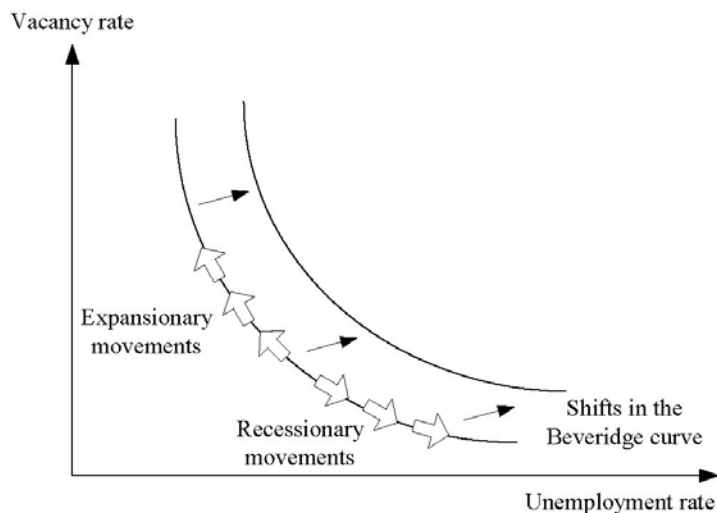
Figure 1. *Stylised depiction of the Beveridge curve*

Source: Tasci & Lindner, 2010

The shifts in the Beveridge curve can be attributed to combination of three different factors that affect labour market flows, *i.e.* labour market reallocation, labour force growth and changes in the search and matching process (Bleakley & Fuhrer, 1997). According to the labour reallocation assumption, job loss, quits and job creation depend on the overall pace of reallocation in the economy. Reallocation implies the changes of workers flow into unemployment, the amount of vacancies posted and the time spent moving among firms due to firms' contract or expand. The pace of reallocation is related to the state of economy. It increases during times of economic upheaval, more firms to contract or expand significantly resulting in greater flows of workers and jobs. When the economy is stable, reallocation occurs also as firms expand and contract for their own reasons.

According to the second assumption, the labour force growth would most probably increase the unemployment rate which subsequently causes outward shifts of the Beveridge curve. Similarly, a decrease in the labour force shifts the Beveridge curve inward. The main reasons for changes in the labour force are considered the following: the demographic composition of the labour working-age population, changes in the participation of women and migration.

Finally, according to the third assumption, a good matching process would improve the efficiency of workers finding new jobs. In this case, the vacancies will be filled faster and unemployment will be reduced. Thus the Beveridge curve would most probably shift toward the origin. In turn, the matching process can be improved by the following ways: the introduction of agencies, unionisation, increasing mobility of labour and the improvements in communication.

Although the Beveridge curve can be a useful tool for indicating the mismatch, it should be interpreted cautiously and in the context of other labour market indicators. Unemployment rates and number of vacancies can be influenced by other factors than just labour market matching process, such as high fluctuation or legislation. Another potential limitation of the Beveridge curve arises from difficulty to distinguish between cyclical and structural fluctuations due to the similarities between these movements for plausible types of cyclical shocks. Nevertheless, despite its shortcomings the Beveridge curve represents a crucial starting point for labour market analysis in the case where a diversified data are absent.

3. Empirical analysis

In order to empirically assess the relationship assumed with the Beveridge curve we need a reliable data on unemployment and vacancy rates. The unemployment rate in Macedonia has been calculated based on data from the Labour Force Survey. The first Labour Force Survey (LFS) in Macedonia was conducted by the State Statistical Office in 1996, and since then we have detailed data concerning labour market trends. Since 2004 LFS is conducted as a continuous survey throughout the year with quarterly processing of data. This survey is conducted according the methodology recommended by the International Labour Office (ILO) ratified at the 13th International Conference of Labour Statistician in October, 1982 (ILO, 1990) and the recommendations of the European Statistical Bureau (Eurostat).

On the other hand, the data for calculating the vacancy rate is based on the Job Vacancy Survey, which has been conducted for the first time in 2012 by the State Statistical Office. The reporting units which are subjects in this survey are selected by sampling according to the NACE rev.2 classification of the economic activities. The sample contains all big and medium sized enterprises, while the remaining units from the range of small enterprises are selected randomly.

The dynamics of the unemployment and vacancy rates in Macedonia during the period 2012-2017 is presented on Figure 2. The left vertical axis is scaled in the range to present the unemployment rate, whereas the right vertical axis is scaled to present the vacancy rate.
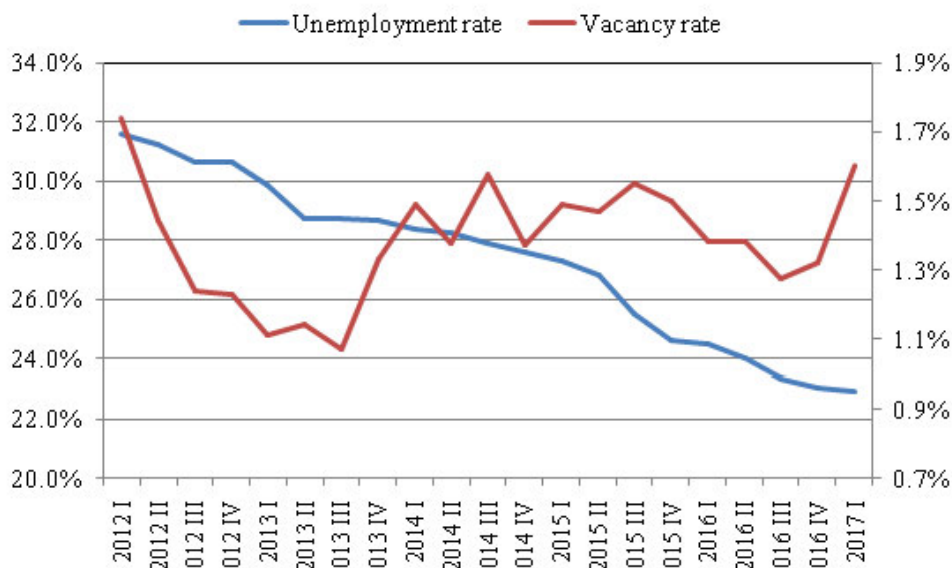
Figure 2. *Dynamics of the unemployment and vacancy rates in Macedonia*

Source: Authors' research

From Figure 2 we can observe that the unemployment rate during the considered period is continuously declining, while the vacancy rate is much more volatile. A sharp decrease in the vacancy rate can be observed in 2012 mainly due to the implications of the global economic crisis. However, the situation has improved thereafter with another decline in the late 2015 and early 2016 which can be attributed to the resent political crisis. The biggest numbers of vacant jobs have been generated in the manufacturing sector, wholesale and retail trade and construction which together account for more than half of the total number of vacant jobs during the period 2012-2017. On the other hand, the highest vacancy rates have been marked in the Accommodation and food service activities, Administrative and support service activities and Construction. From occupational point of view, the biggest numbers of vacant jobs have been created for service and sales workers followed by plant and machine operators and assemblers; and elementary occupations.

We next analyse the scatter diagram of unemployment rate vs. vacancy rate in Macedonia during the period 2012-2017 which is presented on Figure 3.
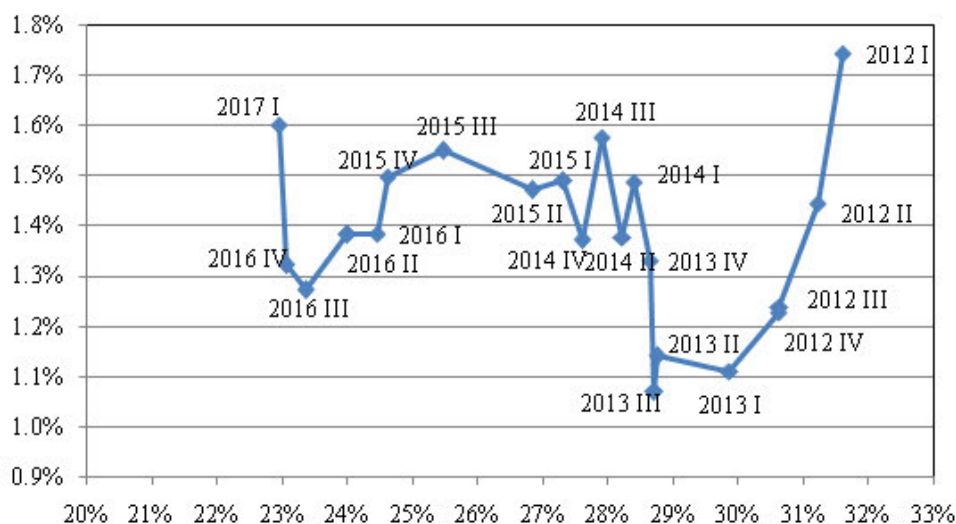
Figure 3. *Beveridge curve for Macedonia (2012-2017)*

Source: Authors' research

From Figure 3 it can be noticed an inward movement in the matching process during 2012 which can be considered as a shift in the Beveridge curve. During the period 2013-2015 the relationship between the unemployment and vacancy rates is generally negative with an upward movement along the curve characterised as an expansionary movement. Similar inward movement with respect to the origin is again observed by the end of 2015 which has been reversed one year later.

In order to estimate the Beveridge curve for Macedonia we follow the approach presented by Ghayad (2013). In this context we regress on , where *u* and *v* are the unemployment and vacancy rates respectively.

$$ln\left(\frac{1-u}{u}\right) = a + b\,ln\left(\frac{v}{u}\right) + \varepsilon \qquad \dots (1)$$

$$e^{ln\left(\frac{1-u}{u}\right)} = e^a \cdot e^{b\,ln\left(\frac{v}{u}\right)} \qquad \dots (2)$$

$$\left(\frac{1-u}{u}\right) = e^a \cdot \left(\frac{v}{u}\right)^b \qquad \dots (3)$$

$$u^{-1}(1-u) = e^a \cdot v^b \cdot u^{-b} \qquad \dots (4)$$

$$v = \left(\frac{u^{b-1}-u^b}{e^a}\right)^{\frac{1}{b}} \qquad \dots (5)$$

The results from the estimated Beveridge curve for Macedonia are presented in Table 1.

Table 1. *Estimated Beveridge curve for Macedonia*

Period for estimation	Intercept coefficient	Slope coefficient	F-Statistics	R^2
2012-I : 2017-I	2.6818 (0.000)	0.56950 (0.000)	19.7685 (0.000)	0.50991
2013-I : 2017-I	2.6014 (0.000)	0.53300 (0.000)	23.0262 (0.000)	0.60554
2012-I : 2016-I	2.1461 (0.000)	0.40126 (0.006)	10.1877 (0.006)	0.40447

Note: p-values are presented in the parentheses.

Source: Authors' research

From Table 1 it can be noticed that all estimated coefficients are statistically significant, whereas the explanatory power of the model varies for different periods of estimation. The estimated Beveridge curve for the entire period under consideration is depicted on Figure 4.
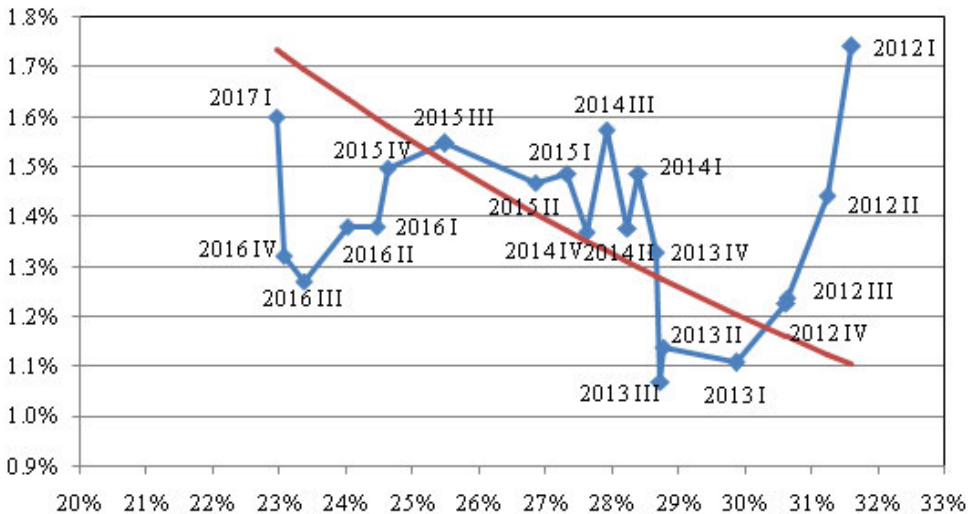
Figure 4. *Estimated Beveridge curve for Macedonia (2012-I : 2017-I)*

Source: Authors' research

According to the estimated model we notice an obvious negative relationship between the unemployment and vacancy rates which is further used as a referent case. In order to assess the sharp decline in 2012 we consider for

estimation only the period 2013-2017 (green line in Figure 5). It can be noticed that Beveridge curve for this period shifts inward pointing out to the improved matching process during 2013-2017.
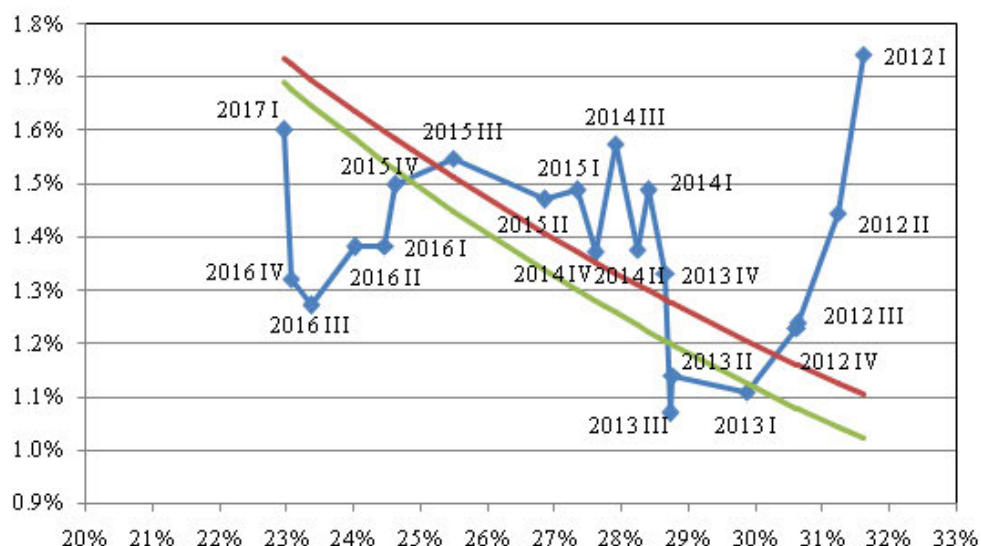
Figure 5. *Beveridge curve for Macedonia (2013-I : 2017-I)*

Source: Authors' research

In order to assess the changes in the matching process that occurred since 2016 we estimate the Beveridge curve only for the period 2012-2015 (purple line in Figure 6). We can notice that Beveridge curve has twisted rather than shifted due to the recent development in the matching process. Consequently, as unemployment diminishes the Beveridge curve becomes more elastic meaning that a unite increase in vacancy rate is associated with greater decline in unemployment rate.
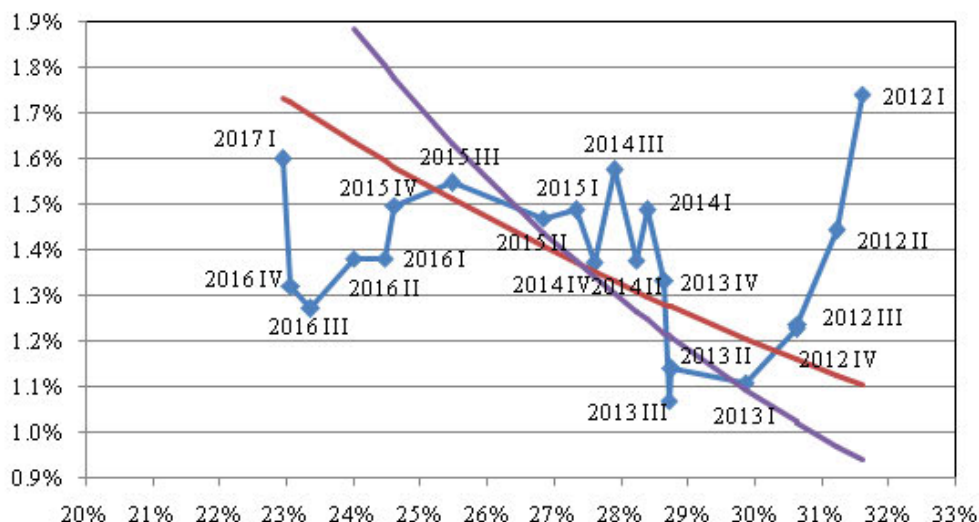
Figure 6. *Beveridge curve for Macedonia (2012-I : 2016-I)*

Source: Authors' research

4. Conclusions and policy recommendations

The unemployment rate in Macedonia since the outset of transition hovered above 30 percent for more than two decades. The recent steadily declining trend in unemployment has imposed a challenging research task to explore the nature of matching process between unemployed workers and vacant jobs. With respect to this, there are various approaches that can be applied for assessing the potential skill mismatch including the analysis of Beveridge curve. Even though this approach might be a subject of criticism, in this paper we make an attempt to analyse the efficiency of the labour market matching process in Macedonia based on the sifting Beveridge curve. In this context, the main limitations arise from the short time series particularly regarding the vacancy rate, as well as lack of quarterly published data for the potential institutional independent variables.

Analysing the evolution of Beveridge curve during the business cycle seems to yield useful information about the types of shocks that have influenced the relationship between the unemployment and vacancy rates in Macedonia during the period 2012-2017. In this context, according to the analysis we have identified several changes that imply the following conclusions. First, the decline of unemployment rate in 2012 has been associated with simultaneous reduction in the vacancy rate. This has been manifested by inward shifting Beveridge curve and improved efficiency in the matching process. Second,

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the period 2013-2015 has been characterised by stable relationship between the unemployment and vacancy rates, while an upward movement has been observed along the curve. Finally, the recent changes that occurred since 2016 are much more delicate for analysis since they are associated with a twisting Beveridge curve. This can be considered as a positive trend since at lower unemployment rate the curve becomes more elastic pointing out to improvement in the efficiency of the matching process.

The analysis of the labour market matching in Macedonia based on the shifting Beveridge curve can be further used for deriving appropriate policy recommendations. First, the active labour market polices have to be designed carefully in order to target the most vulnerable labour market segments, particularly with respect to increased employability of the youth and reduced share of workers with low level of qualifications. Second, the policies on the supply side should be focused on appropriate reforms of the education system including both the vocational education and training and higher education. Given that the awareness among the social partners involved in the process of designing new curricula and modernisation of the existing ones is still on the relatively low level, incentives should be created among employers to participate in designing the study programmes for the formal vocational education and training as well as for the informal vocational education of adults. Third, it has been identified a need for better coordination among the key institutions and social partners. In this context, it is worth to mention the current initiative to establish a task force of representatives from various institutions involved in the planning of human capital development. Finally, the policies on the demand side have to generate incentives for additional job creation predominantly in competitive industries where the skill requirements will roughly match the qualification structure of the workforce.

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COMPETITIVENESS OF BOSNIA AND HERZEGOVINA ECONOMY − ANALYSIS AND RECOMMENDATIONS FOR IMPROVEMENT

KONKURENTNOST BOSANSKOHERCEGOVAČKE EKONOMIJE − ANALIZA I PREPORUKE ZA UNAPRJEĐENJE

Abstract

National competitiveness represents the ability of economy to produce globally acceptable products and services, while achieving a high rate of economic growth expressed through the growth of gross domestic product. In a relative sense, this refers to the potential of a national economy to proportionally generate more wealth than its competitors. Based on the importance of this concept, national competitiveness, including the competitiveness of Bosnia and Herzegovina (BiH) economy, is annually measured using different methodologies and indicators. Current competitiveness reports put BiH at the bottom of European ranking, behind other countries in Western Balkans region. Consequently, a low degree of competitiveness affects foreign trade deficit, inability to achieve targeted growth rates, and a lots of other socio-economic problems, such as unemployment. The main objective of this paper is to identify and analyze the key determinants of the competitiveness of BiH economy. The paper presents basic impact factors of low level of competitiveness, such as inefficient state apparatus, corruption, unstable government/political action and fiscal regulations. Paper concludes that BiH has to work on a number of structural reforms in order to achieve a higher level of competitiveness. In addition to the conclusion, paper offers number of recommendations for improving competitiveness, as well as recommendations for future research.

Keywords: competitiveness, factors of competitiveness, competitiveness of Bosnia and Herzegovina

Sažetak

Konkurentnost privrede odnosi se na njenu sposobnost proizvodnje globalno prihvatljivih proizvoda i usluga, uz ostvarivanje visoke stope ekonomskog rasta izražene kroz rast bruto društvenog proizvoda. U relativnom smislu, ovo se odnosi na potencijal privrede neke zemlje da proporcionalno generira više bogatstva od konkurenata na svjetskim tržištima. Shodno važnosti pojma konkurentnosti, na godišnjem nivou se korištenjem različitih metodologija i pokazatelja mjeri konkurentnost neke zemlje, uključujući i konkurentnost privrede Bosne i Hercegovine. Tako aktuelni izvještaji o stepenu konkurentnosti privrede, stavljaju Bosnu i Hercegovinu na dno ljestvice evropskih zemalja odnosno regiona Zapadnog Balkana. Posljedično, nizak stepen konkurentnosti uvjetuje vanjskotrgovinski deficit, nemogućnost ostvarivanja ciljanih stopa rasta, kao i niz drugih socio-ekonomskih problema, poput nezaposlenosti. Osnovni cilj ovog rada je da identificira i analizira ključne determinante konkurentnosti privrede Bosne i Hercegovine. U radu su prikazani osnovni faktori uticaja na nizak nivo konkurentnosti bosanskohercegovačke privrede, poput neefikasnog državnog aparata, korupcije, nestabilne vlasti/politike, te fiskalne regulacije. Zaključeno je da se u privredi Bosne i Hercegovine mora djelovati sa nizom strukturnih reformi u cilju postizanja višeg nivoa konkurentnosti. Pored zaključka, u radu se sugeriše niz preporuka za unaprjeđenje konkurentnosti, kao i preporuke za buduća istraživanja.

Ključne riječi: konkurentnost, faktori konkurentnosti, konkurentnost Bosne i Hercegovine

1. Introduction

The topic of competitiveness, especially when it comes to national economics, has been an interesting research topic in the academic circles over the last two decades. The competitiveness of the economy is particularly significant in times of periodic crisis, whether it is local, regional or large, world-wide crisis, such as that in 2008. This is particularly important for BiH, which, according to relevant reports, has only recently recovered from the effects of the world crisis. Because of that, the issue of national competitiveness in

the context of BiH is being discussed. The aim of the paper is to evaluate the competitive position of BiH, developed by Porter and others on the basis of the new competitive assessment methodology and based on that define recommendations for improving competitiveness. The paper is structured in three chapters. The first chapter deals with the concept of competitiveness, with a focus on national competitiveness. In the second chapter, the competitiveness of the economy of BiH is being considered. Namely, this chapter presents the competitive position of BiH, according to The Global Competitiveness Report by World Economic Forum, as well as comparing the competitiveness of BiH with the reference countries. In the last chapter of the paper recommendations for improving the competitiveness of BiH have been suggested, together with an appropriate conclusion.

2. Concept of national competitiveness

Conceptual determination of competition and competitiveness is a very complex problem. Researchers understand and define national competitiveness in a variety of ways, leading to the overlap of concepts of national, international and global competitiveness in many respects. In addition to significant formal differences in defining national, international and global competitiveness, a large number of definitions contain many common elements. In this regard, the competitiveness is emphasized by the ability of the country to achieve high rates of economic growth expressed by GDP growth per capita and the ability to produce goods and services that meet the world market test. In the following lines, several aspects of the concept and meaning of national competitiveness will be discussed.

The simplest definition of the term competitiveness, broadly speaking, states that competitiveness relates to the ability of an economic entity (companies, industries, regions or countries) to compete with their rivals (competitors). It is related to the rivalry between economic entities regarding the market or access to human and material resources or technology (Stojčić, 2012, p. 145). This refers to domestic and/or foreign markets (Škuflić, Kovačević & Sentigar, 2011, p. 2). This definition broadly defines competitiveness, which may be the ability of companies as well as other economic entities, such as industry, region, but also cities and countries. The focus of this definition is the ability of a certain economic entity to compete on the market, according to the existing market conditions. Without a sufficient level of competitiveness, *ceteris paribus*, the competing entity cannot survive on the market.

The concept of competitiveness is observed in a relative relation (with other competitors) and can be expressed as a set of the relative performance of the company in comparison to competitors. Thus, the competitive advantage relates to the relative position of an economic entity in relation to the activity of competition (Šimić, 2016, p. 159). Other definitions, such as those of Peteraf and Barney, emphasize the creation of new value as a basis for competitiveness (Talaja, 2013, p. 51), *i.e.* the function of quality and price (Stojčić, 2012, p. 145). Porter states that the competitive advantage depends solely on the value (Porter, 1985, p. xxii). In the context of international trade, competitiveness implies the possibility of delivering goods that can withstand the test of international markets. The OECD (2017) defines competitiveness as a measure of the country's ability to produce goods and services under fair and equitable market conditions while passing the international market test and while maintaining and increasing the long-term real income of the population. The World Economic Forum (WEF) in its World Competitiveness Yearbook reports that competitiveness means the ability of a country or a company to proportionally generate more wealth than competitors in world markets. Differences in the structures of national economies, values, cultures, and institutions significantly contribute to competitive success (Porter, 1988, p. 19).

According to the definition adopted by the 1985 US Presidential Competitiveness Commission, competitiveness is defined as the degree to which a country can, under free and fair market conditions, produce goods and services that meet the needs of international markets simultaneously by increasing income of its citizens (Živković, 2008, p. 569). The competitiveness of a national economy is not just a simple addition of the results of its total or average competitiveness of its companies. Competitiveness of the national economy refers to a wide range of economic and institutional phenomena that enable the successful functioning of the economy. Such competitiveness, sometimes referred to as structural competitiveness, indicates that the competitiveness of national producers is the result of many fundamental phenomena related to the structure of the national economy. It includes various aspects, such as: the size of the domestic market, the structure of domestic production connections between different sectors and branches, the distribution and market power of the supplier, the characteristics and distribution of customers, the efficiency of non-market connections between companies and production units. International competitiveness can be seen in a wider and narrower sense. In the widest sense, international competitiveness of the national economy is based on the measurement and comparison of macroeconomic indicators and

living standards, where productivity is at the center of attention, while in the narrow sense this concept is defined as the country's ability to export its products to the world market. Thus, international competitiveness of the country can be defined as the country's ability to maintain and increase the share of the national economy on the world market by achieving international standards of efficiency, successful exploitation of productive resources and product quality (Velloso, 1991). International competitiveness of the country also depends on its ability to export its products, the efficient use of productive and natural resources and productivity growth, which together enables growth in living standards (Haque, 1991).

Taking into account all the above, international competitiveness could be defined as the function of several groups of factors, conditions and incentives that enable and encourage successful international exchange and investment. These factors are: the ability of the country to export, its success in exploiting natural, material and human resources in production and appearance on the market, standard of living, productivity, country membership in various international organizations, international agreements, and similar.

Global competitiveness is defined as the ability of the country to stimulate the successful performance and survival of its companies on the world market. This is being done by economic, institutional and social action, resulting from the interaction between governments, as well as the ability to change global competitiveness (Kozomara, 1994, p. 50). Strengthening productivity and overall competitiveness must be the basic idea of conducting economic policy. Only well-targeted policies to improve national competitiveness can provide the desired path to development and overall social well-being. These policies must be comprehensive and aimed at overcoming factors affecting competitiveness. These factors are (Federal Institute for Programming Development, 2012): high operating costs, high burden, large public debt, weak overall competition that does not encourage companies to innovate and compete, unregulated environmental protection and waste management, poor quality of traffic infrastructure, difficulties in company liquidation, mismatching legislation, weaknesses in public administration, *etc*. Savić *et al.* (2009, p. 27) state that competitiveness is determined by the quality of the business environment in which company operates, the quality of the wider (indirect) social and economic environment, the innovation and investment capabilities of the companies themselves, and is reflected in macroeconomic results, international trade and competitiveness at regional and sector. Porter

has developed a model of competitive advantages based on four factors that are interconnected - known as the "diamond". National competitiveness, specific to each country, is created by the interaction of four groups of factors and two external variables. Two external variables are the government and the opportunities (chances), while the factors are: condition factors, related and supportive industries, demand, strategies and structure and competition level (Baban & Marijanović, 1998, p. 89). The interaction of all these determinants creates the competitive advantage and stimulates constant pressure for innovation and improvement. The relationships between factors are interactive and a good factor positively reflects on others. Likewise, weakness in any factor limits the potential of other factors.

3. Competitiveness of BiH economy

BiH have been included in the international competitiveness base since 2004, *i.e.* in the preparation of the Global Competitiveness Report, issued annually by the World Economic Forum in cooperation with Harvard University. A partner institution from BiH to prepare this report is the Federal Institute for Development Programming. If we take into account the position of BiH for a longer period of time, we can notice that the average competitiveness rating in 2009 was the lowest (3.5). In the next four years, there was a relative improvement (at 4.0 in 2013) which ultimately resulted in the best placement of BiH (87th position) since being included in the international competitiveness base. It is important to note that in 2014 BiH were not included in the World Economic Forum report. The reason for this is a high degree of inconsistency in data, which significantly deviated from the presented trends. In 2015, BiH were again included in the report, but with a much lower rank than before. The overall competitiveness score in 2016, improved compared to 2015 (from 3.7 in 2015 to 3.8 in 2016), resulting in a shift in the competitiveness score from 111 to 107 position. The following table presents the position of BiH by individual elements (pillars) in the global competitiveness compilation period from 2007 to 2016.

Table 1. *The position of BiH on the scale of global competitiveness in the period 2007-2016*

	2007	2008	2009	2010	2011	2012	2013	2015	2016
Basic conditions	**104**	**98**	**100**	**98**	**92**	**81**	**81**	**95**	**94**
Institutions	113	123	128	126	109	85	71	127	126
Infrastructure	117	123	128	98	99	94	83	103	105
Macroeconomic environment	90	57	69	81	78	97	104	98	76
Health and Primary Education	87	82	75	89	58	48	46	48	50
Efficiency boosters	**95**	**102**	**100**	**100**	**102**	**97**	**89**	**112**	**106**
Higher education and training	98	109	86	88	86	72	63	97	92
Goods market efficiency	113	123	125	127	115	109	104	129	129
Labor market efficiency	77	85	94	94	85	99	88	131	125
Financial market development	71	86	104	113	124	119	113	113	101
Technological readiness	110	109	95	85	73	68	73	79	76
Market size	80	92	90	93	97	93	98	97	98
Innovation and sophistication factors	**123**	**129**	**127**	**120**	**108**	**99**	**89**	**120**	**122**
Business sophistication	119	125	117	115	108	109	110	125	115
Innovation	121	128	131	120	104	80	63	115	125

Source: Authors' research

The level of improvement and deterioration of individual pillars of competitiveness in 2016 compared to 2015 can be seen from the representation of the rank of value for the 12 pillars of competitiveness.

Figure 1. *Global competitiveness of BiH − comparison between 2015 and 2016*
Source: Authors' research

In 2016, as compared to 2015, there was a marked improvement in macroeconomic environment (22 position advance) and financial market development (12 positions advance). However, there was a significant deterioration of innovation (-10).

Based on published reports on global competitiveness for the period 2007-2016. years, we can distinguish those factors in which BiH is valued at a higher level, *i.e.* determining what are advantages of BiH on a GCI index. For this purpose, the average rankings in the observed period for each of the 12 pillars of competitiveness are calculated. Data shows that BiH is best rated in the field of health and primary education (average rank 65). With regard to technological readiness, BiH is currently ranked at 76th position with an evident upward trend in the last mid-term (from 110 in 2007 it has gone to 76th position in 2016). Macroeconomic environment had a negative trend (from 57th in 2008 to 76 in 2016).
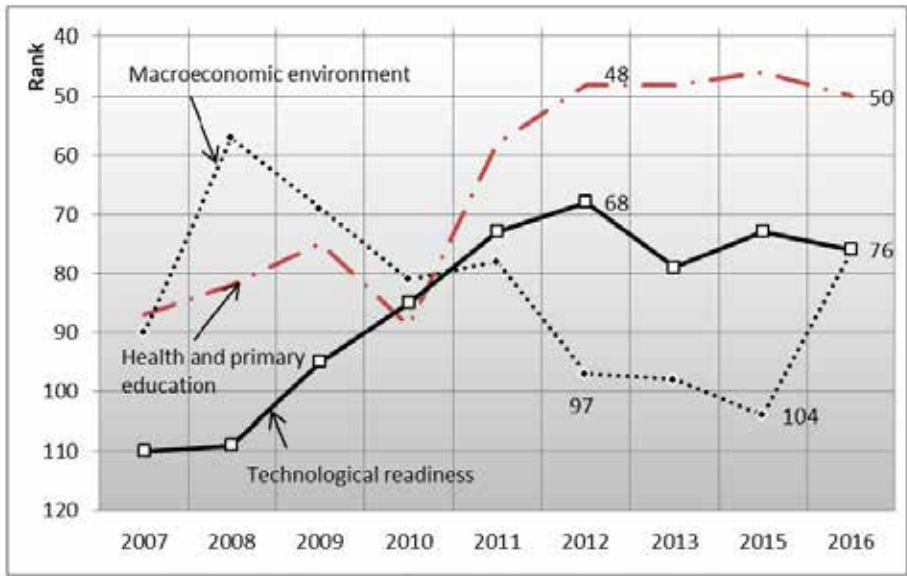
Figure 2. *Best rated fields for BiH on GCI index*

Source: Authors' research

When it comes to worst ranking factors for BiH, the good market efficency is weakest, with 129th position out of a total of 138. Institutions as well as innovations also represent a weaker side of competitiveness of BiH and are in the weak position of 126 and 125 respectively 2016. A similar situation exists

when it comes to business sophistication, which is ranked at the 115th place of competitiveness.
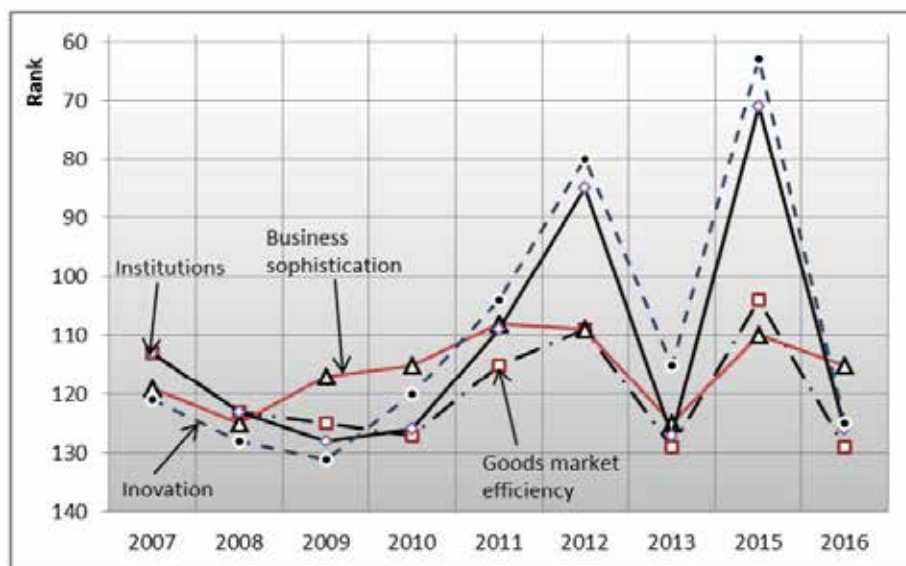
Figure 3. *Worst rated fields for BiH on GCI index*

Source: Authors' research

Compared to the countries in the region, BiH has the lowest ranking when it comes to competitiveness. According to the latest data, BiH is lagging behind Slovenia (56th), Macedonia (68th), Croatia (74th), Albania (80th), Montenegro (82th) and Serbia (90th). Also, there is a negative long-term trend in all of these countries in the observed period. A review of the ranking of Balkan countries according to the GCI Index for the period 2001 to 2016 is presented in the following graph.
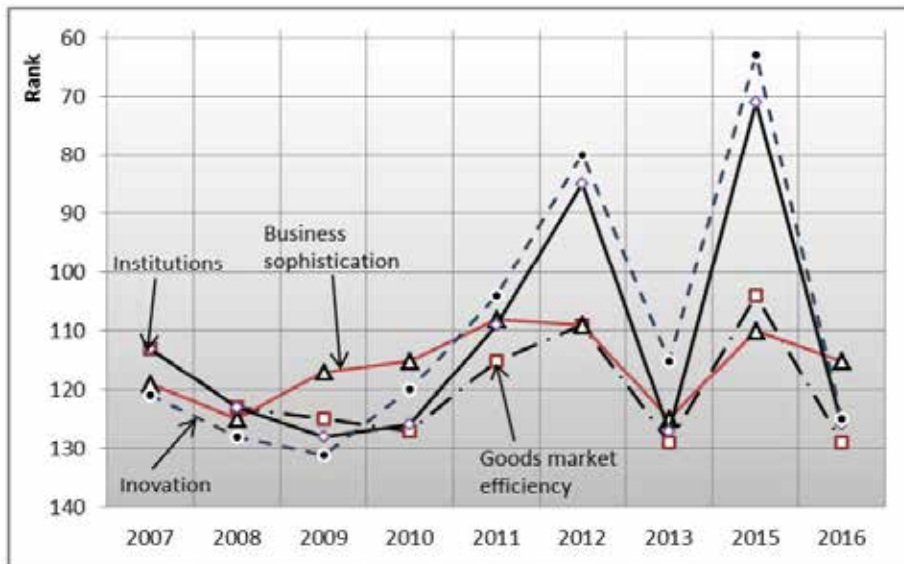
Figure 4. *Competitive position of BiH and neighboring countries in the period 2001-2016*

Source: Authors' research

According to the latest report of the World Economic Forum, the following countries are at the top of the competitiveness chart: Switzerland is ranked first with the GCI index of 5.81; followed by Singapore (5.72), US (5.70), Netherlands (5.57), Germany (5.57), Sweden (5.53), UK (5.49), Japan (5.48), Hong Kong (5.48), and Finland (5.44). The most important characteristics of the most competitive countries in the world are: transparent functioning of institutions; significant investment in science and innovation; excellent relationship between academia and the business sector. The competitiveness of each country is determined by the productivity of the company that operates in it. For this reason, it is very important to collect and analyze employee opinions on what factors have the greatest impact on reducing business productivity. The study of the most problematic business factors implemented by the World Economic Forum showed that, according to employees in BiH, the biggest problems affecting productivity are: access to finance, political instability and tax rates.

4. Recommendations for improving competitiveness

Previous analysis has shown that a package of measures is needed that will lead to increased competitiveness as the primary prerequisite for ensuring

a stable economic growth. The construction and implementation of a stable and transparent legal framework are the primary conditions for the regular functioning of the market economy. In order to significantly enhance the competitiveness of the national economy, it is necessary to activate a series of measures that will affect the competitiveness position. This implies market transparency, coordination of economic policy measures at a national and local level, an introduction of modern technology, better organization of work and production processes, better management. Only when provided: conditions for the efficient functioning of the market, uncompromising legal business protection, innovative management as well as modern technological base - it will be possible to carry out the transformation of the economy and ensure its constant competitiveness based on it a sustained economic growth. This can be achieved in different ways, which is presented in the following table.

Table 2. *Different recommendations for improving the competitiveness of BiH*

Matić (2006)	Economic Institute of Sarajevo (2009)	Hodžić (2006)
Domestic competitive export ability is set to the top of the state's priority.	Introducing cluster policy as an innovative policy for improving competitiveness.	Creating the preconditions for a self-sustainable and balanced economic development, in particular the unification of a single economic space.
The lack of volume of domestic investment capital needs to be compensated by attracting FDI.	Establish a competitiveness council.	Taking appropriate fiscal reforms (prioritizing fiscal capacity building and institutional reform).
Intensify reforms that affect national ability to attract FDI and intensify reforms that directly affect the condition of all three competitiveness indices (GCI, BCI and NGCI).	Conduct a "stress test" of competitiveness.	Involvement in relevant regional and international institutions to access the world capital market, in particular foreign direct investment (FDI).
Prefer and encourage those FDIs that, besides investing capital, bring about an increase in exports, a significant contribution to the increase in new value - GDP, which bring know-how and technological development and are ideologically and ecologically neutral.	Establish short-term priorities for competitiveness.	Growth of export ability and on that basis and the stability of the domestic currency.
Create a certain level of coordination between different levels of government.	Bring a short-term competitiveness-based program.	Rationalization in public administration expenditures.
Entities and cantons must change the policy towards the I&R sector.		Dynamic development on the basis of a favorable environment for entrepreneurship.
It is necessary to change the attitude that competitive ability is built at a cheap labor cost.		

Source: Authors' research

There is still a lot to be done in BiH in the upcoming medium term so that the country can achieve a sustainable level of economic development and approaches the macroeconomic indicators of developed western economies. It is necessary that BiH is more geared towards domestic production, that existing companies improve their productivity and competitiveness so that they can export more to the EU market. BiH can hardly integrate into the EU without further expansion of production and employment. It is necessary to continue the market transformation of the BiH economy while maintaining macroeconomic stability. The result of this policy would be to accelerate economic growth with price stability and a viable position on the current account balance account. This would also lead to a reduction in unemployment. These activities will be promoted by the membership in the WTO, and by further establishing contractual relations with the EU. The privatization process should be accelerated to improve the efficiency of the economy and focus on the development of small and medium-sized enterprises, which are an important basis for domestic development. This means that BiH needs to develop its production economy (supply) based on the development of a large number of new companies, which are the basis for its future development. Without this, it will not be able to comply with another Copenhagen criterion about establishing a strong, efficient market economy and securing its place within the EU's single market.

5. Conclusion

Based on the conducted analysis of the competitiveness of BiH, the following conclusions can be drawn:
- The overall assessment of BiH's competitiveness in 2016 has improved compared to 2015.
- The average rating of competitiveness, according to the method of the WEF, in 2009 was the lowest in the observed period and amounted to 3.5. In the next four years, it improved (at 4.0 in 2013), which ultimately resulted in the best placement of BiH since it was included in the international competitiveness base (87th position).
- Progress on the competitiveness rank is linked to the improvement of the pillars of macroeconomic environment (+22 positions) and financial market development (+12), while a significant deterioration has been noted in the field of innovation (-10 positions).
- Compared to the countries in the region, BiH has the lowest rank when it comes to competitiveness. According to data from 2016, ahead of BiH

are Slovenia (56th), Macedonia (68th), Croatia (74th), Albania (80th), Montenegro (82nd) and Serbia (90).

In order to achieve its goals in strengthening the competitive position in the world and creating more favorable investment conditions, BiH must make more efficient changes in terms of stabilizing macroeconomic opportunities and creating a better business environment. Also, significant macroeconomic and microeconomic development needs to be achieved. Clusters through co-operation, promote the development of productivity and innovation, and as such is a justified way of competing at a regional and international level. In the case of BiH, clusters continue to represent an under-utilized opportunity and it is necessary to promote and address the clear benefits they gain when it comes to national economic development and improving competitiveness. The most significant recommendation for enhancing BiH's competitiveness is to improve the factor's prerequisites, which is primarily related to infrastructure and investments. Responsibility for solving this problem in the future is, above all, by the government. In addition to the relative reduction of domestic consumption, BiH will have to make adjustments in the following two directions: first, to significantly increase exports and second, to increase the inflow of foreign direct investment (FDI). These are two very challenging goals, but this is the path that provides national prosperity by returning to the path of intense growth. The common precondition for both key issues is to raise the level of competitiveness, and this requires creating a very attractive business environment.

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CONTEMPORARY FINANCING MODELS OF INFRASTRUCTURAL PROJECTS WITH PARTICULAR REFERENCE TO PUBLIC PRIVATE PARTNERSHIP IN MACEDONIA

SAVREMENI MODELI FINANSIRANJA INFRASTRUKTURNIH PROJEKATA, S POSEBNIM OSVRTOM NA JAVNO-PRIVATNO PARTNERSTVO U MAKEDONIJI

Abstract

One of the necessary assumptions for promoting the economic growth of a country is the existence of developed infrastructure. However, taking into account the limited funds allocated for infrastructure projects on one hand, and permanent rising needs of the population on the other hand, imposes the need to find alternative ways to finance infrastructure development and providing better public services. One of the alternative ways to finance infrastructure projects for more efficient and superior fulfillment of public services as well as promoting the local economic development is the introduction of forms of public-private partnership between local government and private sector entities. Public-private partnership suppose including legal

and natural entities in performing activities of public interest of local importance on the basis of an agreement concluded in accordance with the law, under which terms public and private sector entities keep their resources for more efficient and superior supply of certain public services. In addition the private sector engages its own resources, knowledge and skills, in order to provide certain goods and services otherwise provided by the public sector. Taking into account the positive aspects of this method of financing the infrastructural projects, the research objective in this paper is considering the current situation, and the opportunities and prospects for its use in Republic of Macedonia. For gaining the aim a survey was conducted and the data were analyzed with many statistical tools. Considering the results of the survey in the conclusion are proposed many recommendations and measures to stimulate this type of funding.

Keywords: public private partnership, financing, infrastructural projects

JEL: H41, E22

Sažetak

Važna pretpostavka za promicanje ekonomskog rasta u zemlji je postojanje razvijene infrastrukture. Međutim, uzimajući u obzir ograničene resurse alocirane na infrastrukturne projekte, s jedne strane, i konstantan rast potreba populacije, s druge strane, nameće se potreba za pronalaženjem alternativnih izvora finansiranja infrastrukturnog razvoja i osiguranje boljih javnih usluga. Jedan od alternativnih načina finansiranja infrastrukturnih projekata u svrhu efikasnijeg i superiornijeg pružanja javnih usluga, kao i promicanja lokalnog ekonomskog razvija, je uvođenje formi javno-privatnog partnerstva između lokalne vlasti i privatnog sektora. Javno-privatno partnerstvo podrazumijeva uključivanje privatnih firmi u provođenje aktivnosti od javnog interesa i lokalne važnosti na bazi sporazuma koji su u skladu sa zakonom koji definira uslove pod kojima entiteti javnog i privatnog sektora koriste svoje resurse za efikasnije i superiornije pružanje određene javne usluge. Pored toga, privatni sektor mobiliše svoje resurse, znanje i vještine kako bi obezbijedio određene proizvode i usluge koje bi inače obezbijedio javni sektor. Uzimajući u obzir pozitivne aspekte ove metode finansiranja infrastrukturnih projekata, istraživački cilj u ovom radu je razmotriti postojeću situaciju i mogućnosti njene primjene u Republici Makedoniji. Za postizanje ovog cilja provedeno je istraživanje, a rezultati su analizirani statističkim metodama. Uzimajući u obzir rezultate istraživanja, u zaključcima su predložene preporuke i mjere za stimulisanje ovog oblika finansiranja.

Ključne riječi: javno-privatno partnerstvo, finansiranje, infrastrukturni projekti

JEL: H41, E22

1. Introduction

Public private partnership is a key instrument for realizing projects of infrastructural character in many countries, through collaboration between the public and private sectors. The basic aim is to provide development of municipalities and improvement of people's living standard and a business climate.

This model of partnership had appeared for the first time in the Roman Empire, and had its expansion in the 19th century, to get its true importance in the last twelve years. The way of financing allows private investments (financial, business and other knowledge and skills of the private sector, innovative entrepreneurial access in projects implementing and managing), which will enable realization of projects that otherwise could not be implemented through a classic way of financing, or would take significantly more time, which is not acceptable, especially if some public service that should be realized quickly is in question (Trajanovski, 2006, p. 7). Realization of projects through a public private partnership is a long-lasting and expensive process, and its application is justified in conditions when the public sector would realize lower total expenses or when it would have an access to some knowledge and skills to which otherwise it would not be able to come to, and they would be important for services providing (Agency of Private Public Partnership Republic of Croatia, 2009, p. 4). In this direction, it is indispensable to implement many preliminary researches (market research, research for selecting the most suitable location, for the project profitability, *etc.*), and to determine the criteria for assessing the justification of applying this model during the project realization.

2. Public private partnerships characteristics and models

Public private partnerships is a concept that involves working with public and private cooperation and partnerships to deliver infrastructure and services to the population. It is an alternative structure that intermediates between state ownership on the one hand and, full privatization on the other (Irimia-Diéguez & Oliver-Alfonso, 2012).

Public private partnership represents various forms of cooperation between the public sector (central and/or local government) and the private sector in order to provide financing, construction, reconstruction, management and maintenance of infrastructure and/or provision of public service (European Commission,

2004). Furthermore, the public private partnership as a model for collaboration between the public and private sectors has the following elements: the private partner prepares the project documents, finances infrastructure construction (totally or partially), manages and maintains it and/or performs activities of public interest (public service), for which he gets an appropriate compensation from the public partner or from the public service end users; the public partner has the right to define the goals to be achieved concerning the quality of the public services, their prices, and the control of the public services performance; relatively long time period of the contract for a public private partnership; and allocation of the risk, which is most frequently transferred on the private partner (Association of the Unites of Local Self-Government of the Republic of Macedonia, 2008, p. 6). However, the public private partnership does not mean that the private partner should always take over complete or the larger part of the risk associated with the project.

Then, in the specialized literature and in practice, there are several basic models of a public private partnership: public private partnership through concession assigning, contract for activities of public interest, contracts for services, managerial contract, leasing, Private Finance Initiative – PFI (Trajanovski, 2006, p. 11).

The public private partnership can be realized in many areas of utilities, such as: drinking water supply, draining and purification of the waste waters, maintenance of sanitation, transportation and handling of municipal solid and technological waste, gas and thermal energy supply, cemetery, crematorium maintenance and giving funeral services, building and maintaining the public parking space, bazaars construction and maintenance, maintenance and use of the parks, vegetations, park-woods and the areas for recreation, or realization of bigger investment projects for constructing infrastructural facilities, installations, roads, *etc.*, and in the area of non-commercial public services, such as social protection and protection of the children – kindergartens and nursing homes (Trajanovski, 2006, p. 7).

3. Motives for realizing public private partnerships

In the realization of this kind of partnership, each entity enters led by its own motives, for the entities of the public sector – to provide high-quality public services of local importance, while for the entities of the private sector – profit realization.

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As the most important benefits of the public private partnership application, the following ones can be highlighted: accelerated development of the infrastructure and investment in projects which otherwise would not be realized due to the limited resources of the public sector; providing public services of higher quality, especially those which payment is in a close relation with meeting definite standards; higher efficiency and costs decreasing during the entire period of the project operationalisation, in which the private sector is especially interested and engaged; more equitable risks allocation between the partners in order to decrease the costs; faster project implementation, that is especially in the private partner's interest for faster return of the resources invested in projecting and building the concrete project through the offered public services; providing additional revenues through offering the public services to the end users; the management development – by improving the planning, arranging and control of the offered public services (Association of the Unites of Local Self-Government of the Republic of Macedonia, 2008, p. 6).

Besides the positive aspects of applying the public private partnership, it also brings some risks, especially because here the capital infrastructure projects are in question. But, we must have in mind the proper risks allocation. First, because of the influence which the allocation would have on the project price, and second, for the motivation of the private partner, timely quality project realization and effective working with as low costs as possible.

As more significant risks, we shall mention the following ones: a risk of the project sustainability, that comes out due to lowering the possibility for the projects control by the people because of introduction of private operators; a risk at the private partner/party selection; a risk of not accepted project by the public , which can be reduced by some degree via assessment of the licenses needed for the projects realization by the investors , and the extend of the project acceptability by the public; a risk of/in construction , coming out from inappropriate project defining, not-defined geological conditions, safety conditions, that have a negative influence on the financing costs (Trajanovski, 2006, p. 11).

4. Public private partnerships in Republic of Macedonia

In our practice, the public private partnerships are still in their beginnings, and the complete realization of these long-term strategic partnerships between the public and the private sector can present a challenge for those who implement

them and facing with many problems, especially concerning the proceeding for the contract assigning and the project managing.

By bringing into force The Law of concessions and public private partnerships ("Official Gazette of Republic of Macedonia" No. 6/ 2012), the necessary legal framework for awakening of the public private partnership in our practice, has been provided. In order to see the actual situation of the public entities in Republic of Macedonia and their capacities for applying Public Private Partnership (PPP), on the one hand, and the potential investors' interest and readiness for this kind of partnership, and to determine the recommendations and measures for encouraging financing of projects of public interest by applying PPP, a research has been conducted.

In order to realize the research, the target groups that will be subject of that research have been defined, *i.e.* units of the local self-government on the one hand, and potential investors on the other hand. The group of Units of the local self-government comprises municipalities of all regions in Republic of Macedonia, with different number of inhabitants, area, fiscal independence, realized revenues, current operative budget. The second group of Potential investors comprises larger business entities on the territory of Republic of Macedonia.

For this research, questionnaries have been prepared and submitted to both target groups. The questionnaire intended for the target group of investors is composed of several groups of questions, *i.e.* questions referring to the level of the potential investors' awareness of this kind of investment and their interest in it; their information for the possible benefits and eventual risks of this kind of investing; and for the investors' preferences for some defined model of PPP.

The questionnaire for the units of the local self-government is also composed of several groups of questions. These are questions referring to the level of awareness of the units of the local self-government of the possibilities for financing projects of public interest by the way of PPP; then their information on the advantages and risks they would have of this kind of financing; concrete initial steps to be taken over by the units of the local self-government for PPP applying (identification of the priority projects, preliminary research, defining of criteria for assessing the PPP justification during the project realization) and a concrete PPP realization.

5. Analysis of the obtained data and interpretation of the results of the conducted survey of the units of the local self-government

After the conducted survey of the private partners, the following results have been obtained, from which we can see that 54.72% of the polled private partners are acquainted with the possibilities for investing in projects of public interest through PPP, while 69.81% are interested in this kind of investment, 35,85% of the polled private partners are acquainted with the potential benefits of PPP, 33.96% with the potential risks that can occur, over 24.53% of the polled private partners are acquainted with different models of PPP in which they could invest and with their characteristics, 63.43% of the polled private partners who are acquainted with the potential benefits of PPP, have ranked them as the biggest and very good benefit, while 11.2% have ranked the potential benefits as a satisfactory and poor benefit. 70.90% of the polled private partners who are acquainted with the potential risks of PPP have ranked them as the most negative and negative influence, while 11.2% have ranked the potential risks as less and the least negative influence.

From the survey conducted with the public partners, it can be seen that 92.5% of the polled public partners are acquainted with the possibilities for using PPP as an alternative way for projects of public interest financing, 90% of the polled public partners are acquainted with the potential benefits of PPP applying, 82.5% with the potential risks. More than a half or 57.5% of the polled public partners have identified priority projects to be financed by PPP, 42.5% have implemented preliminary research (market research, research for the most suitable location, for the project profitability, *etc.*), 35% have defined criteria for assessing the justification of applying this model during the project realization, and only 20% of the polled public partners have realized a project by applying the PPP, 50.4% of the polled public partners who are acquainted with the potential benefits of PPP have ranked them as the biggest and very good benefit, while 18.65% have ranked the potential benefits as a satisfactory and poor benefit. 57.71% of the polled public partners who are acquainted with the potential risks of PPP have ranked them as the most negative and negative influence, while 42.29% have ranked the potential risks as less and the least negative influence.
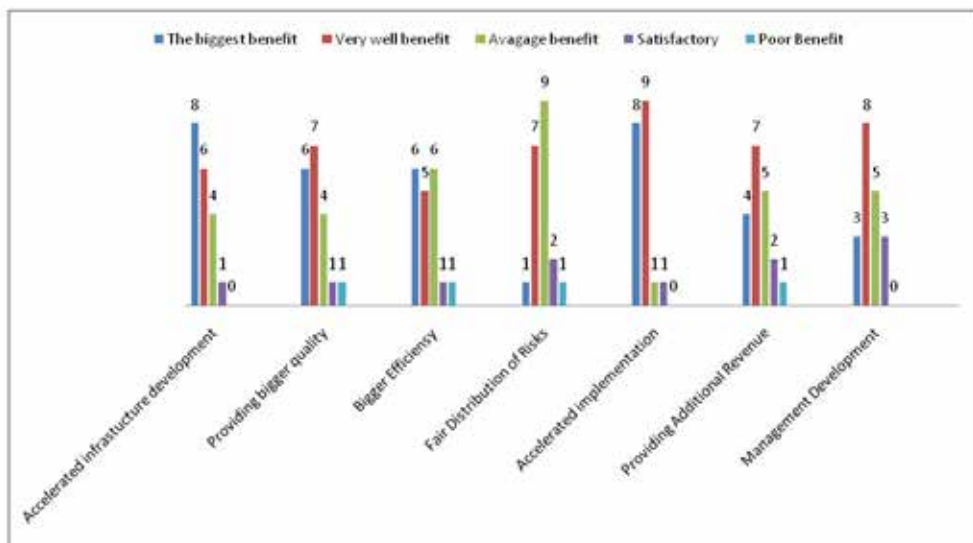
Figure 1. *Ranked potential benefits of applying PPP by the polled private partners*

Source: Authors' compilation

From Figure 1 it can be concluded that the private partners who are acquainted with the positive aspects of the PPP, have seen the biggest benefit in the accelerated infrastructure development and investment in projects of public character, better project implementation, providing of public services of higher quality, higher efficiency and costs lowering, while they see poorer benefit in a more equitable risks allocation between the partners for decreasing the costs.
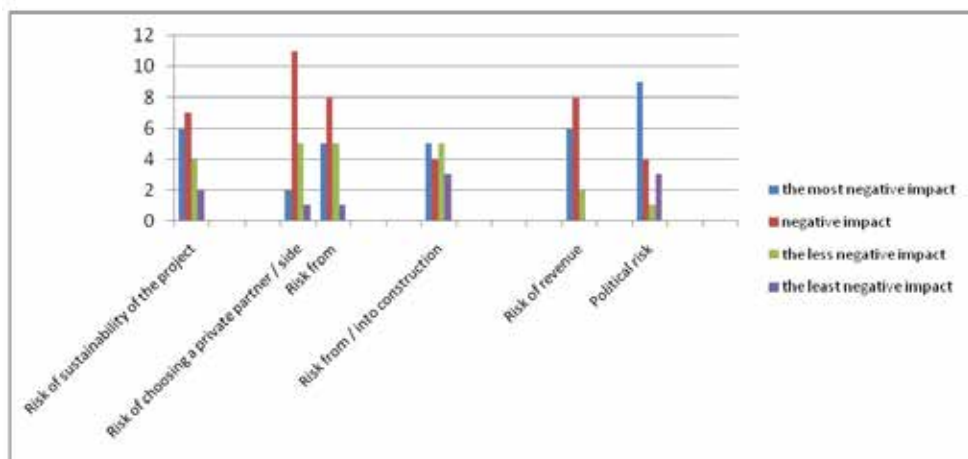
Figure 2. *Ranked potential risks of applying PPP by the polled private partners*

Source: Authors' compilation

From Figure 2, it can be concluded that the private partners who are acquainted with the potential risks of PPP applying, have assessed with negative influence the risk of the project sustainability, the risk at selecting the partner/party, the risk of not-accepting the project by the public and the risk of revenues, while the risk of construction has been assessed as the most negative or less negative influence. The political risk has been assessed with the most negative influence.
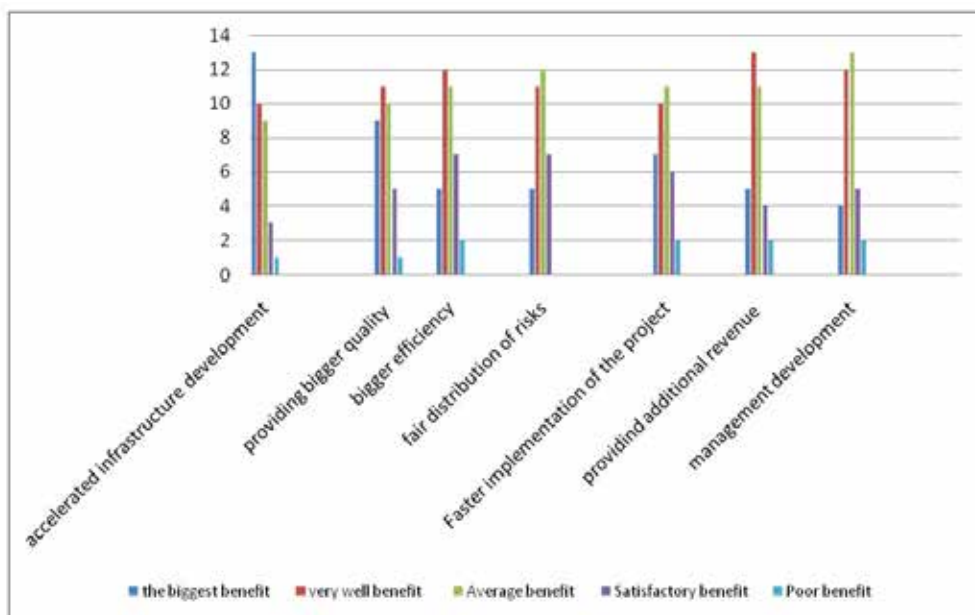
Figure 3. *Ranked potential benefits of applying PPP by the polled public partners*

Source: Authors' compilation

From Figure 3, it can be concluded that the public partners who are acquainted with the positive aspects of the PPP, have seen the biggest benefit in the accelerated infrastructure development and investment in projects of public character. They have seen a very good benefit in providing public services of higher quality, higher efficiency and costs lowering, and in providing additional revenues through an offer of public services to the end users. Poor benefit is assessed by an insignificant number of public partners.
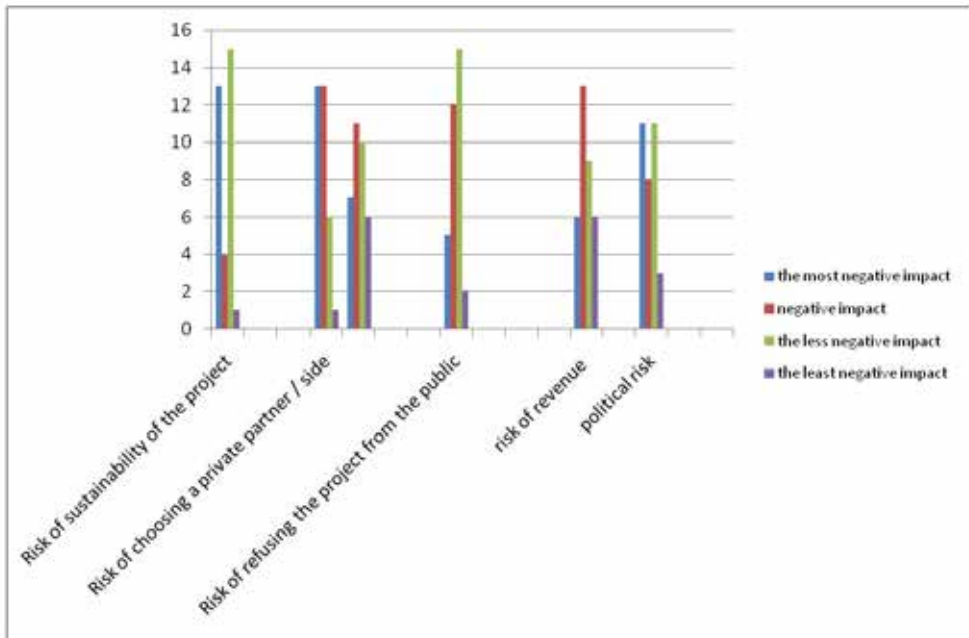
Figure 4. *Ranked potential risks of applying PPP by the polled public partners*

From Figure 4, it can be concluded that the public partners who are acquainted with the potential risks of applying PPP, have assessed with the most negative influence the risk of selecting the partner/party, political risk, and significantly the risk of the project sustainability. The least negative influence according to the public partners, has the risk of the project not-accepting by the public and the risk of revenues.

6. Empirical analysis

H_1: The potential benefits of applying PPP, do not influence the interest of the private sector in using this kind of financing.

Processing the data obtained from the 4 question in the questionnaire, we got the following results:

CBS-Chi-Square Analysis	08-29-2017
Critical chi-square:	36.4151
Computed chi-square:	21.6665
p value:	0.5990

Conclusion: Do not reject Hypothesis.

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Because the estimated test value (21.6665) is lower than the theoretical test value (36.4151), we do not have reasons to throw away the set hypothesis and we conclude that the potential benefits of applying PPP with the private sector do not influence the interest of the private sector in using this kind of financing. We come to the same conclusion when compare the theoretical value of p=0.05 to the estimated value of p=0.5990.

H_2: The potential risks of applying PPP, do not influence negatively the interest of the private sector in using this kind of financing.

Processing the data obtained from the 6 question in the questionnaire, we got the following results:

     CBS-Chi-Square Analysis   08-29-2017
        Critical chi-square: 24.9958
        Computed chi-square: 18.2249
        p value: 0.2507
        Conclusion: Do not reject Hypothesis.

Because the estimated test value (18.2249) is lower than the theoretical test value (24.9958), we do not have reasons to throw away the set hypothesis and we conclude that the potential risks of applying PPP with the private sector do not influence negatively the interest of the private sector in using this kind of financing. We come to the same conclusion when compare the theoretical value of p=0.05 to the estimated value of p=0.2507.

H_3: The benefits of applying PPP do not influence the use of this kind of financing by the entities from the public sector.

Processing the data obtained from the 3 question in the questionnaire, we got the following results:

     Critical chi-square: 24.9958
        Computed chi-square: 18.2249
        p value: 0.2507
        Conclusion: Do not reject Hypothesis.

Because the estimated test value (18.2249) is lower than the theoretical test value (24.9958), we do not have reasons to throw away the set hypothesis and we conclude that the benefits of applying PPP do not influence the use of this kind of financing by the entities from the public sector. We come to the same

conclusion when compare the theoretical value of p=0.05 to the estimated value of p=0.2507.

H₄: The potential risks of applying PPP , do not influence negatively the interest of the entities from the public sector in using this kind of financing.

Processing the data obtained from the 5 question in the questionnaire, we got the following results:

    CBS-Chi-Square Analysis   08-29-2017
        Critical chi-square: 24.9958
        Computed chi-square: 27.3717
        p value: 0.0258
        Conclusion: Reject Hypothesis.

Because the estimated test value (27.9958) is higher than the theoretical test value (24.9958), we throw away the set hypothesis and we conclude that the potential risks of applying PPP influence negatively the interest of the entities from the public sector in using this kind of financing. We come to the same conclusion when compare the theoretical value of p=0,05 to the estimated value of p=0,0258.

7. Conclusion

The current fast urbanization is a world phenomenon, which imposes a need of increasing and improving the existing urban infrastructure. But, the realization of infrastructural projects requires high investments. Local governments often are not able to provide those resources by their own revenues, and they are forced to look for new alternative ways of financing. In this direction, many countries try to find out alternative ways of financing the projects of public interest. One of the ways are these public private partnerships, that in our practice are at the initial stadium of their application and as such, they present high challenge for their implementation.

From the conducted research and obtained results referring to the private partners, and in a direction for encouraging the use of this kind of partnership, it is indispensable to pay more attention to better information on PPP as an alternative form of a partnership with the public sector for financing projects of public character, on the positive aspects and risks that this kind of partnership brings, and on the models of PPP. The positive thing is a satisfactory interest

of the private entities in this kind of partnership and in investing in projects of public interest.

While, contrary to the private entities, there is a high degree of information with the public entities on PPP as an alternative way of financing projects of public character, and on the advantages and risks it brings. With this segment, more attention should be paid to a promotion of PPP concerning identification of priority projects, implementation of preliminary researches (market research, research for the best location, the project profitability and defining the criteria for assessing the justification of applying this model during the project realization).

These measures will create the indispensable pre-conditions for more intensive use of PPP, creation of a firm ground, with which our country will be one step closer to utilization of this possibility - financing of projects of public interest through partnership between the public and the private sectors.

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SOCIAL FRANCHISING − INNOVATIVE APPROACH FOR SOLVING SOCIAL PROBLEMS

DRUŠTVENA FRANŠIZA − INOVATIVNI PRISTUP ZA RJEŠAVANJE DRUŠTVENIH PROBLEMA

Abstract

Ten years after the global financial crisis, which particularly affected the transition countries, Croatia lags in solving basic social problems such as poverty and unemployment. The consequence of the failure of these problems is the population migration, especially the younger groups and ones with high education. Although there are different models of solving social problems, Croatian institution rarely recognize and support them, and it seems that they rarely fully understand their actions. This paper puts a special emphasis on two models: social entrepreneurship and franchising. Social entrepreneurship represents an innovative approach to the use of business principles for solving social problems (not exclusive for profit generation). As a new paradigm in business that emphasizes the mobilization of ideas, capacities and resources for the purpose of sustainable social development, social entrepreneurship is the answer to the needs of society that the competent institution is most often unable to solve due to its bureaucracy, slowness and inflexibility. On the other hand, franchising represents an increasingly popular way to launch new business ventures and/or business expansion. By using a proven business model and a well-known name, it is easier to enter the market and reduce the risk of a possible failure. The main purpose of this paper is to present the model that many countries have recognized as an innovative business concept which is aimed at two sides: the desire to launch a business venture and the ability to make a significant contribution to improving the quality of life in the community. In the first part, the paper gives an insight into the theoretical framework of the concept of social franchise, its characteristics, and the difference in relation to a social enterprise. The second part

presents some of the world's best examples of good social franchise practice and gives an overview of the possibilities of introducing a social franchise into Croatia. Attention will be given to the recommendations and implications for further research due to the author's conviction that this new social business model has the potential to influence real social values.

Sažetak

I deset godina nakon globalne financijske krize koja je posebno zahvatila tranzicijske zemlje Hrvatska značajno zaostaje u rješavanju osnovnih društvenih problema poput siromaštva i nezaposlenosti. Posljedica nerješavanja ovih problema danas je odljev mozgova i migracija stanovništva, posebice mlađe skupine. Iako postoje različiti modeli rješavanja društvenih problema hrvatske institucije ih rijetko prepoznaju i nude im podršku, a čini se, još rjeđe u potpunosti razumiju njihovo djelovanje. Ovaj rad poseban naglasak stavlja na dva modela: društveno poduzetništvo i franšizu. Društveno poduzetništvo predstavlja inovativan pristup korištenja poslovnih principa u svrhu rješavanja društvenih problema (a ne isključivog generiranja profita). Kao nova paradigma u poslovanju koja naglasak stavlja na mobiliziranje ideja, kapaciteta i resursa u svrhu održivog društvenog razvoja zajednice društveno poduzetništvo predstavlja odgovor na potrebe društva koje nadležne institucije zbog svoje birokracije, sporosti i nefleksibilnosti najčešće ne mogu riješiti. S druge strane, franšiza predstavlja sve popularniji način pokretanja novih poslovnih poduhvata i/ili širenja poslovanja. Korištenje provjerenog poslovnog modela pa i poznatog imena može olakšati ulazak na tržište i smanjiti rizik od eventualnog neuspjeha. Glavni cilj ovog rada je predstavljanje modela koji su mnoge zemlje prepoznale kao inovativan poslovni koncept koji miri dvije strane: želju za pokretanjem poslovnog pothvata i mogućnost da taj pothvat značajno doprinese unapređenju kvalitete življenja u zajednici. U prvom dijelu, rad daje uvid u teorijski okvir samog pojma društvene franšize, njenih karakteristika te razlika u odnosu na društveno poduzeće. Drugi dio predstavlja neke od svjetskih primjera dobre prakse društvene franšize te daje pregled mogućnosti uvođenja društvene franšize u Hrvatsku. Posebna pozornost u radu dat će se preporukama i implikacijama za daljnje istraživanje zbog uvjerenja autora da ovakav novi društveno poslovni model ima potencijala utjecati na ostvarivanje prave društvene vrijednosti.

1. Introduction

Franchising is not a new concept but in the beginning, it was more connected to collecting taxes than to commercial matters (Erceg, 2017). Its significant development was seen in 19th century when Isaac Singer started modern franchise in USA. In the second part of the 20th century Ray Kroc introduced business format franchising and moved franchising into third phase of its development. From that time franchising became most used way of growing and expanding business and it can be found in almost every industrial sector from restaurant and fast food to domestic cleaning services. Franchising has many definitions and according to Webber (2013) franchising can defined as *contractual agreement by and between two parties where one party (the Franchisor) extends the right to the other party (the Franchisee) to carry on an independent business under the trade mark or trade name of the Franchisor and to receive sufficient privileged know-how, derived through the Franchisor's experience in operating such a business, throughout the term of the agreement, consisting of all components as to enable a previously inexperienced person to establish a successful business under the Franchisor's brand.* Recently, academics and practitioners have recognized another significant value of franchising – its possibility to be joint with different hybrid organizational concepts such as social entrepreneurship. Although, at first glance those two concepts have not much in common (the first is related to generating the profit and the second to generating social value), more countries face the same social issues that might be solved with already existing solutions. Therefore, a social franchising represents a way of disseminating best practice to areas which need good solutions to their social problems. The aim of this paper is to define social franchising and to explore the possibility of implementing this concept to Croatia.

The paper gives an overview of different examples of social franchising and good practice worldwide. Furthermore, the paper will look upon possibilities of social franchising in Croatia, present conclusion and give recommendation for the further research on this important subject.

2. Social franchising

Before we define the social franchising, it is necessary to define social entrepreneurship. Social entrepreneurship is trying to solve different social problems that neither governments nor social institutions are able to solve

mostly due to their bureaucracy, slowness and inflexibility as well as too narrow definitions of their missions (Peric & Alpeza, 2011) There are two ways of defining social entrepreneurship: as potential profit generation model for non-profit organizations (Cooney, 2011) and as innovations that blend methods from the world of business and philanthropy to create social value that is sustainable and has the potential for large scale impact (Dees & Anderson, 2006). Tracey and Jarvis (2007, p. 670) use innovation perspective to define social entrepreneurship as an *innovation that leads to positive social change regardless of the mechanisms through which it is achieved*. According to McConachie and Simpson (2003) by using business principles and techniques, social entrepreneurship creates positive social change and represents an important module for the development of regional communities. However, in the process of *"doing good"* and generating their mission social entrepreneurs face many challenges among which one of the most significant is scaling up their venture. Usually social entrepreneurs have clear vision of the problems their community is facing but despite good solutions are unable to grow and potentially geographically expand so that more people benefit from the products and services (Volery & Hackl, 2010). Social entrepreneurs have several possibilities of scaling their operations (Table 1).

Table 1. *Scaling methods in social entrepreneurship*

	Full intra-organizational growth	Contracting as hybrid governance	Extra-organizational multipliers
Contractual control of the "rules of the game"	Yes	Yes	No
Actual control of the "moves of the game"/actual production process	Yes	No	No
Degree of control	++	+	0
Examples	Setting up own branches	Franchising, licensing	Open source, sharing information

Source: Bekmann & Zeyen, 2014, p. 504

As it can be seen in the table if social entrepreneurs set up their own branches it will bring them maximum control since they will have the control over all activities. If social entrepreneurs, on the other hand, choose franchising or licensing they will have less direct control however signed contract will secure some control of the rules of the game. For the social entrepreneurs,

who wants others to benefit from their ideas and solutions as well, social franchising can be a good option although there are, still, only several social franchise systems cases present in the literature (Tracey & Jarvis, 2007; Volery & Hackl, 2010).

2.1. Differences between social enterprise and social franchising

But before moving towards definition and benefits of social franchising it is important to state the difference between social enterprise and social franchising. Although with same mission and social goals, one of the main difference between social enterprise and social franchising is profit orientation (reinvesting vs. sustainability of franchise). Table 2 presents other significant differences between these two concepts.

Table 2. *Differences and similarities between social franchising and social enterprises*

Social enterprises	Social franchising
Social goals	Social goals
Stand alone or heterogeneous outlets	Standardized outlets
No standard or replication	Replication through franchising
Branding not critical	Branding critical through franchising success
Reinvest in community	Franchisee profitability to be sustainable
Run by NGO	Run by NGO that fulfils franchisor function
Operates on commercial principles	Operates on commercial and franchising principles

Source: Adapted from (duToit, 2014, p. 11)

Considering all the differences and similarities between social enterprises and social franchising, later represents *the most promising strategy for encouraging growth and disseminating best practice* (Tracey & Jarvis, 2007, p. 671) for many social enterprises. Social franchising is looking for sustainability through implementing business principles on the market, making sufficient profit to continue their activities and reinvest remaining profits into their communities. Temple (2011) state several potential reasons why social franchising is potentially attractive choice for social enterprises replication among which are following: allowing local ownership and flexibility, growing social impact in accordance with the mission; sharing successful model which combines financial and social goals, and encouraging entrepreneurship.

However, to understand the concept of social franchising it is also important to present differences between social franchising, traditional franchising (most known and used) and micro-franchising. Figure 1 presents the relationship between these three types of franchising since all three types are using same procedures, but their main goal is significantly different.
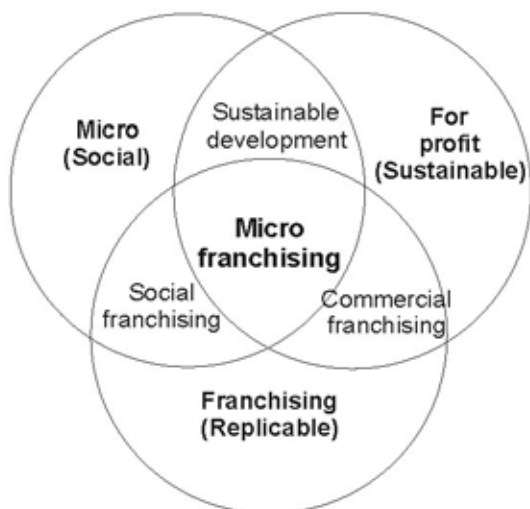
Figure 1. *Micro franchising vs. (social) franchising*

Source: Adapted from (Fairbourne, 2007b, p. 9)

Presented framework also helps with distinguishing two franchising concepts: social franchising and micro franchising which are often considered same. Micro franchising is primarily connected with the size of a franchise and it usually represents a single person in traditional franchise (e.g. taxi driver as franchisee). On the other hand, social franchising is focused on delivering public goods and services while supported by different grant programs capital *(*Erceg & Kukec, 2017). DuToit (2014) argues that for social franchise does not need to generate profit because it delivers services and products to the low-income end consumers. Main difference between micro franchising and social franchising is in orientation towards the profit. Social franchise will never (nor it is wanted to be) profitable for franchisee and franchisor while micro franchising pursues profit for both sides (Magleby, 2006). Thus, social franchising can be referred as non-profit franchising. Volery and Hackl (2010, p. 176) state that the goal of social franchising goal is *a far reaching and optimal satisfaction of social needs as opposed to the high degree of brand recognition and customer loyalty pursued by traditional franchises.* Montagu

(2002, p. 129) defines social franchising as a *franchise system, usually run by a non-governmental organization, which uses the structure of a commercial franchise to achieve social goals* while Smith (2002) in her definition puts an emphasis on social rather than on commercial goals. Social franchising programs use commercial aspects of franchising system to help provider associate and afterwards leverage business (commercial) principles with social services which are beneficial due to their higher quality, lower costs or higher availability. Zafeiroupoulou and Koufopoulos (2013, p. 79) state that social franchising should meet five criteria: *an explicit aim to benefit the community; an initiative launched by a group of citizens; a decision-making power not based on capital ownership; a participatory nature, which involves various parties affected by the activity; and a limited profit distribution.* However, so far academics and practitioners did not offer an established framework which helps recognize when is organization ready for social franchising (Berelowitz, 2012, p. 13). Berelowitz, though, presents the model of 5 R's as a potential tool for introducing social franchising to a social enterprise. His model consists of: ***readiness** for innovation and scaling up of the organization; resources required to **replicate**; **receptivity** or readiness of key stakeholders to accept the replication model; understanding the **risks** associated with scaling the idea both from an innovation and organizational perspective (will the social returns of replication make it worthwhile.)* The 5 R's model presents the starting evaluation point for all social enterprises willing to develop their social franchising network.

According to Montagu (2002) social franchising can be separated into following three areas: *assuring the availability of services, assuring the quality of service* and *awareness of use and service*. In the first area, potential franchisees need to see that there is enough benefit for them to be a part of network. Second area establishes the need for consistent service quality, *i.e.* standardized services no matter where and who is providing it. Last area states that when there is a good and qualitative service it should be provided to its end users, *i.e.* used and this represent significant component of social franchising. DuToit (2014) presented main characteristics of social franchising (see Table 3).

Table 3. *Social franchising characteristics*

Social franchising
Role-players: Franchisee, Franchisor & Donors
Social goals: Sustainability of Franchisor & investment in community
Franchisees to be profitable and sustainable while achieving social goals
Consumer demand
Non-profit sector
Mostly provides social services including health and other related services
National marketing with bias to social marketing to promote brand awareness and awareness of service
Subsidized prices

Source: Adapted from (duToit, 2014, p. 14)

Presented characteristics are enabling further development and use of social franchising world-wide.

2.2. Social franchising implementation

DuToit (2014) state that social franchising is used as distribution model for social products and services that are pursuing social goals. She also stated several preconditions for successful implementation of social franchising: limited access to services or products; unmet consumer demand and willingness to pay; existing under-utilized facilities; difficulty to raise capital or large investment required; lack of supply from private sector and availability of potential franchisees. Koehlmoss *et al.* (2011, p. 4) state that the successful implementation of social franchising needs to have a package with following elements: *training (e.g. in clinical procedures, business management); protocolized management (e.g. for antenatal care, childhood diarrhea); standardization of supplies and services (e.g. birthing kits, HIV tests); monitoring (e.g. quarterly reports to franchiser, reviews); branding (e.g. use of a logo on signs, products, or garments) and network membership (e.g. more than one franchisee in the organization).*

According to Meuter (2008) social franchising system needs to be comprised of several core elements such as: prototype and possibility to be replicated to other locations; operations manual for recurring processes and setting the concept; a brand for program; a franchising contract; standardized training and education for potential franchisee and standardized and systematic evaluation and control methods.

Potential franchisors and franchisees can choose different models of social franchising. Ahlert *et al.* (2008) identified three following formats of social franchising:

■ Commercial social franchise – only difference from traditional franchising is in social benefits and that there is no profit generation.

■ Subsidized social franchise – offering service for a lower price than commercial franchise and can include profit making companies as franchisees.

■ Non-profit social franchise – includes all core franchising element but there is no franchise fee and profit.

Regardless of what model potential franchisors and franchisees choose the success is not guaranteed in neither of them. In all reviewed research about social franchising there is no hard evidence about what makes network successful and why have some networks failed. According to the Meuter (2008) social franchisees in most cases do not generate sufficient income why they are often not able to pay fees to their franchisor. Thus, it is important that all potential social franchisors prepare their packages for franchising very carefully, to be prepared for reduced fees or to find alternatives to financial compensation and even re-solve to financially support the franchisees to ensure the social mission.

3. Social franchising worldwide examples

First generation of social franchising systems was founded by United States Agency for International Development during early 1990-ties in Mexico (Montagu, 2002) and their goal was the growth of their market. After this initial social franchising system, many different non-government organizations and different social welfare programs started to consider possibility of using franchising as potential way of delivering social products and services around the world. The second-generation social franchises look more like commercial franchises with the goal of financial and organizational sustainability and market growth (Smith, 1996) The second generation gave foundations for connecting social entrepreneurship and social franchising.

Social franchising is mostly present in developing countries in in the health care area (Montagu, 2002; Smith, 2002). However, it can be found in other areas as well (water services, supermarkets, recycling, hotels) and in different part of world from underdeveloped countries - Vietnam, Ethiopia, Zimbabwe,

Philippines, Nepal, Pakistan, India (Prata, Montagu & Jefferys, 2005) to developed countries – United Kingdom, Sweden, Poland, Italy, France, Belgium (Richardson & Berelowitz, 2012). Although social franchising is attracting more attention there are still no statistics about how many social franchises exist worldwide and how many people are currently employed in social franchising systems. The research conducted by European Social Franchising Network - ESFN (Richardson, 2011) showed that there are more than 50 social franchises in Europe, but researchers have been able to collect data only for 23 networks. Those 23 franchises employ more than 6700 people and had almost 200 million EUR turn-over. Several authors (Montagu, 2002; Richardson, 2011; Richardson & Berelowitz, 2012) presented their research in which they found 140 social franchises. The compiled data can be seen in the Figure 2.
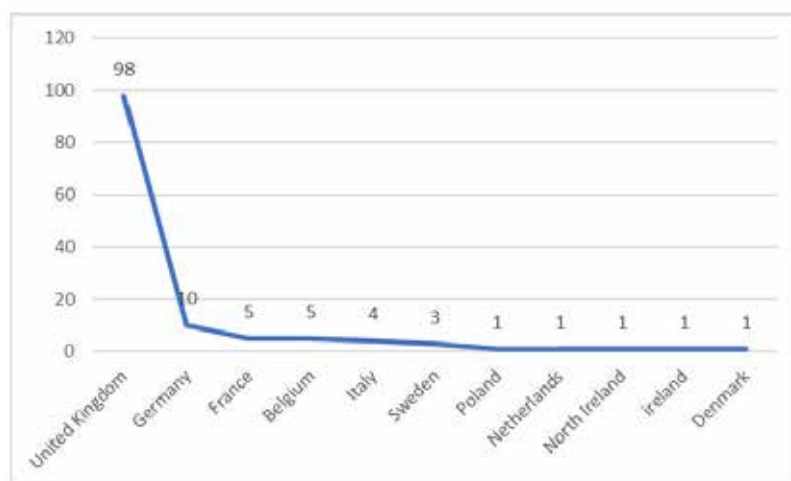
Figure 2. *Social franchising in Europe*

Source: Authors' research

Some of the sectors social franchising networks are involved in can be seen in Table 4.

Table 4. *Social franchising worldwide examples*

Social franchising network	Established	Number of units	Sector / Description
School for Social Entrepreneurs	2002	12	**Education** - provides courses for social entrepreneurs in social enterprises
Le Mat (Italy)	1995	10	**Tourism** - hotels which are employing people with mental health problems and different learning difficulties; Sustainable and small-business tourism
Care and Share Associates (United Kingdom)	2004	9	**Health** - provide home care solutions for those who do not wish to enter residential care
CAP Supermarkets (Germany)	1992	82	**Trade** - supermarket chain which employs people with learning difficulties
FoodBank	2004	140	**Food industry** - fighting food poverty through charitable distribution of food to those in need
Pack-It	1988	5	**Logistics** - organization offers direct third-party logistics and mail and employs people with disabilities
Emmaus	1949	20+	**Production** - organization which is involved in recycling business and has communities that are providing home and work for homeless people
Komosie (Belgium)		100+	**Production** - locally owned re-use and recycling shops

Source: Adapted from (Meuter, 2008; Richardson & Berelowitz, 2012; Zafeiropoulou & Koufopoulos, 2013; duToit, 2014; Beckmann & Zeyen, 2014)

From all currently active social franchising network few have grown to be significant examples in their own countries. Most famous are Care and Share Associates in United Kingdom, School for Social Entrepreneurs in United Kingdom, CAP supermarkets in Germany, Komosie in Belgium, and Le Mat in Sweden, which is present in several countries.

Home Care Associates is United Kingdom employee owned and best-known care provider **of domiciliary health and social care support services to older**

and disabled people. Home Care Associates launched their franchise Care and Share Associates (CASA). With the social franchising model, they have tripled the number of employees and currently they have around 750 people working in their network. CASA provides training which is designed according to people franchisees will be working with (*i.e.* families, elderly people). They also offer support with finances and human resources management and they have franchise operations manual (Beckmann & Zeyen, 2014).

Michael Young started the School for Social Entrepreneurs (SSE) which first franchise was sold in 2002. The School has currently 5 units in United Kingdom and 2 units in Australia. They provide Action Learning program for social entrepreneurs who are working on different existing social projects. Action Learning program lasts for one year and includes learning about project, different study sessions, mentoring and tutorials. Most of their students' tuitions is being covered by different supports or grants.

CAP supermarkets started their first franchise in 1999 and within a year they opened a second one. From that time, the number of employees, especially employees with different disabilities, has been growing exponentially. Currently they have almost 100 opened franchise locations. It is important to state that their strategy includes taking over smaller locations which were abandoned by big national and multinational players in the Germany.

Komosie is Belgian social franchising system and it is the biggest one operating in Europe. They are offering jobs and training to people who have problems finding employment. In their work, they are enabling recycling and re-using of different products so that those products do not end on the landfills. They have more than 100 shops across Flanders and have more than 4.000 employees. Komosie is offering training, shop design, brand and several other services to their franchisees.

Le Mat launched their social enterprise in Italy in 1995 and in 2005 they opened their first franchise in Sweden. They are called a *Social hotel chain and network of social entrepreneurs in tourism* (Berelowitz, 2012, p. 20). Besides Italy and Sweden, they are working on expanding their network to other countries including Croatia (Richardson & Berelwitz, 2012). Their mission includes creation of so called social tourism where there is an opportunity to increase the quality of life of persons with a history of disability, mental illness or drug addiction. They represent social entrepreneurs' tourism brand.

Every franchisee in the system has their own Quality Handbook which is result of joint work between all employees and Le Mat as franchisor. They have three positive impacts - on profit, planet and, what is the most important, on people.

Many countries are facing similar if not the same social problems. All above presented and mentioned social franchising networks are excellent examples how social enterprises, with the help of franchising, can solve social problems without long-term search for solutions and no radical innovations. It also benefits to social enterprise (the need for scaling up) and the community in which they operate (by disseminating best solutions).

4. Discussion

Social entrepreneurship represents a good way to solve different social problems that responsible institution is not able to solve. However, regardless of a good cause of their mission social enterprises face with different kind of problems. Among the most important is the problem of scaling up their venture. The solution was recognized in a new hybrid concept – social franchising. Social franchising, represents a way of disseminating best practice to areas which need good solutions to their social problems. This represents a benefit to both social entrepreneurs and end users – expanding geographically will help social entrepreneurs grow and the more people in need can find use out of their products and services. Implementation of such concept makes it possible to avoid reinventing of the wheel by replicating successful social enterprises. Shared responsibility and ownership between social entrepreneur and his/her franchisee can become an influential instrument in the effort to improve the quality of life in different communities. Although worldwide there are many traditional franchising systems, situation with social franchising is different. There is still no evidence of exact number of social franchises but the number, according to many researchers, are getting higher each year. Social franchising is present in both developed and underdeveloped countries but with the different focus. In underdeveloped countries, social franchising covers mostly health issues while in developed countries it covers other sectors as well (recycling, production, tourism, logistic, *etc.*).

There is no social franchise in Croatia yet. It is, though, slightly different situation with social entrepreneurship and franchising. Social entrepreneurship is still rather new field of research in Croatia and it is still unrecognizable enough as a new business model for solving some of the major social problems

Croatia is facing for more than a decade. It is estimated that there are only around one hundred social entrepreneurs in Croatia. One of the reason for such small number (and as many studies show the number is decreasing each year) is inability to meet some of the criteria put in the Strategy for the development of social entrepreneurship in Croatia.[1] According to this Strategy social entrepreneurs are those who realize 25% of income with their business activities on the market and that invest at least 75% of the annual income in their social mission. Since social enterprises are mostly run by people from non-profit organization those criteria are hard to meet. Most of the non-profits do not have necessary skills and knowledge to lead a growth of an organizations, manage people, manage finance operations, plan strategically, *etc*. And social enterprises need to be able to generate profit and manage people successfully to maintain their sustainability and ensure achievement of their social goals.

On the other hand, franchise systems exist from 1960s and are becoming one of the significant model of launching new ventures in Croatia. This is happening because franchise systems provide proven business model to their franchisees with standard products and quality which help franchisees to be recognized in the market. Additionally, within franchise systems franchisees are having benefits from franchisor's development program and on the other side franchisor can achieve faster grow with less capital involved. This faster growth enables easier achievement of economy of scale which allows franchisors and franchisees to be more competitive on the market.

5. Conclusion

Given the social problems Croatia faces social franchising represents a great model of disseminating best practice to areas that need good social solutions. This concept can be applied to both, foreign social franchisers willing to come to Croatia as well as for Croatian social enterprises who have great ideas and solutions for countries with same or similar problems. This new format of doing business and creating social value is a new area of research and it can be interesting to both academics and practitioners. But for Croatian society to recognize and acknowledge the importance and potential of social franchising there is a need for cooperation between all sectors. The recognition of social franchising can be achieved through developing different educational programs related to social franchising (there are some programs regarding social entrepreneurship and franchising but educational system does not contribute to their development and recognition significantly) and by promoting (especially by the government and

public institutions) the benefits of social enterprises. Raising the awareness of social franchising as a new model of solving social problems is the first step in creating a possibility to start a social franchise in Croatia.

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Endnote

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INCOME CONVERGENCE OF BOSNIA AND HERZEGOVINA TOWARDS THE EUROPEAN UNION

DOHODOVNA KONVERGENCIJA BOSNE I HERCEGOVINE PREMA EVROPSKOJ UNIJI

Abstract

The objective of this paper is to determine the pre-existing condition of income convergence, and then, evaluate the continuation income convergence of Bosnia and Herzegovina towards the European Union by applying complex statistical models, with the aim to indicate negative trends, with reference to low rate of economic growth which leads to increase of attained absolute differences in the level of GDP per capita in Bosnia and Herzegovina and the European Union. After evaluation of continuation, with a view to acceleration of processes of income convergence of Bosnia and Herzegovina towards the European Union, created econometric model analyzes the impact of the following economic variables on the GDP movement in Bosnia and Herzegovina: EU-28 GDP level, FDI, public debt, deficit of current account, and budget deficit, in order to determine what variable requires more attention in the future with the aim to accelerate the processes of income convergence of Bosnia and Herzegovina towards the European Union as well as to form a good foundation for creation of economic policy programs in function of increase of economic growth rate.

Keywords: income convergence, economic integration, economic growth, European Union, Bosnia and Herzegovina

JEL: F15, F43

Sažetak

Cilj ovog rada je utvrditi postojeće stanje dohodovne konvergencije, a zatim, primjenom složenih statističkih obrazaca, izvršiti procjenu dugotrajnosti dohodovne konvergencije Bosne i Hercegovine prema Evropskoj uniji, s ciljem ukazivanja na negativne trendove, odnosno nisku stopu ekonomskog rasta koja dovodi do povećanja dostignutih apsolutnih razlika u nivou GDP per capita Bosne i Hercegovine i Evropske unije. Nakon izvršene procjene dugotrajnosti, a s ciljem ubrzavanja procesa dohodovne konvergencije Bosne i Hercegovine prema Evropskoj uniji, kreirani ekonometrijski model analizira uticaj sljedećih ekonomskih varijabli na kretanje GDP-a Bosne i Hercegovine: nivo GDP EU-28, FDI, javni dug, deficit tekućeg računa i budžetski deficit, kako bi se utvrdilo kojoj od posmatranih varijabli je potrebno posvetiti posebnu pažnju u narednom periodu s ciljem ubrzavanja procesa dohodovne konvergencije Bosne i Hercegovine prema EU te kreirala dobra podloga za izradu programa ekonomske politike u funkciji povećanja stope ekonomskog rasta.

Ključne riječi*: dohodovna konvergencija, ekonomske integracije, ekonomski rast, Evropska unija, Bosna i Hercegovina*

JEL: F15, F43

1. Introduction

Macroeconomic convergence towards the European Union (EU) has not yet gained a serious attention of the public and politicians in Bosnia and Herzegovina (BiH), and in the same time the domestic economic thought is divided into (Euro) optimists and (Euro) pessimists. That although the nominal convergence has contributed to macroeconomic stabilization, it does not imply neither realization of real convergence nor sustainability of stabilization by itself, and that is the reason why the overall economic growth in the post-war period was relinquished to economy backed by donations (aid driven-economy).

In assessing income convergence, it is particularly important to pay attention to relative and absolute convergence, in order to avoid the trap of forming optimistic conclusions and forecasts. Given that income convergence is viewed through the convergence of GDP per capita, it is possible that the realization of relative income convergence, which is reflected in a higher percentage rate of economic growth of less developed countries as compared to developed countries, causing an additional increase in the absolute regional and/or national differences in the level of income. The reason for this phenomenon

is reflected in a lower absolute value of GDP of the less developed countries, and even higher percentage growth causes an increase in absolute GDP gap. However, it should be emphasized that the process of income convergence is a long-lasting and uncertain process, which implies the constant maintenance of high rates of economic growth, higher than the reference growth rates at the level of integration and / or individual comparative countries, which will lead to absolute convergence in the long run. Otherwise, maintaining the rate of economic growth at the level of the economic growth rate of the members of the integration zone and / or lower real economic growth rates will result in divergent income and development trends. Therefore, it is necessary to take into account and continuously work on the improvement of the factors on which long-term economic growth is based, such as: the initial conditions, the rate of increase in physical capital (*i.e.* the share of investments in GDP), the rate of increase in social capital (from the level of education, Management and stimulation of innovation to social trust), and the general political and legal environment (Hodžić, 2008, p. 130).

Integration could speed up the economic growth of underdeveloped countries and reduce divergent income developments in relation to developed countries, if undeveloped countries have at their disposal an appropriate level of production factors that can be adequately utilized by capital inflows due to integration, but also if there is readiness of developed Countries to conduct a more just regional policy. Namely, the reason for the developmental disproportion of underdeveloped and developed countries is often in the fact that the available labor power and the natural potential of the underdeveloped countries can not generate additional value due to the lack of capital that will absorb those factors of production and put them in the function of creating additional value. And in cases where these factors are mobilized for the production process, poor technical and technological equipment can lead to reduced productivity and efficiency of production. The income convergence of BiH towards the EU is just one of the segments of real convergence, which needs to be given special attention during the EU accession process. Namely, if the corresponding degree of real, and in addition, income, convergence is absent, it is also possible to expect the negative effects of integration in the Union, regardless of when this happens. Therefore, based on the current level of development of BiH, this paper analyzes the longevity of the income convergence process according to the average value of GDP *p.c.* at the level of the EU-28, and then with a created econometric model provides a basis for the creation of an adequate program of economic policy, whose implementation would contribute to the reduction of absolute GDP *p.c.* gap of BiH with the EU, and a reduction in the period of income convergence.

2. Research methodology

Estimation of the durability of the real convergence process (which is analyzed through the value of income per capita) will be carried out using the derived statistical forms shown in the following table.

Table 1. *Forms for estimating the durability of income convergence*

The question of convergence	Form	Explanation of the form
Convergence by GDP p.c. EU from 2015 (without EU growth)	$n = \dfrac{\log \frac{Q_{EU}}{Q_d}}{\log(1 + g_d)}$	n – number of years for the removal of the current GDP gap Q_{EU} – Initial EU GDP p.c. Q_d – GDP p.c. of the converging country g_d – GDP growth rate of the converging country
Convergence by GDP p.c. EU with the corresponding growth of the EU	$n = \dfrac{\log \frac{Q_{EU}}{Q_d}}{\log(1 + g_d) - \log(1 + g_{EU})}$	g_{EU} — GDP growth rate of the EU
The required growth rate for achieving real convergence to a certain age	$g_d^* = \sqrt[n]{\dfrac{Q_{EU}^*}{Q_d}} - 1$	Q_{EU}^*. *Assumed value of GDP p.c. EU in the year to which convergence is needed* g_d^*- *The country's growth rate needed to converge to eliminate the existing GDP p.c. gap to the target year*
The required growth rate to prevent the growth of absolute GDP p.c. gap to a certain age	$g_d^* = \sqrt[n]{\dfrac{Q_{EU}^* - (Q_{EU} - Q_d)}{Q_d}} - 1$	*Symbols correspond to the parameters explained in the above forms*

Source: Adapted from (Bogunović, 2011, pp. 200-205)

After assessing the longevity, using the defined econometric model, it is necessary to identify the factors that can contribute to reducing the time period of BiH income convergence towards the EU. The assessment of the factors that influence the movement of the level of GDP in BiH with the aim of identifying the factors that have the greatest impact, in order to pay greater attention to them in the future, all in order to accelerate the process of real (income) convergence will be carried out by applying a multiple regression analysis which is represented by the following models:

$$GDP\,BiH_i = \beta0 + \beta1\,GDP\,EU-28_i + \beta2\,FDI_i + \beta3\,PB_i + \beta4\,DTR_i + \beta5\,BD_i + \varepsilon_i$$

where: *GDP BiH* → gross domestic product of BiH; *GDP EU-28* → EU-28 GDP; *FDI* → foreign direct investments; *PB* → public debt; *DTR* → current account deficit; *BD* → budget deficit; *i* = 2005-2015.

3. Research results

3.1. Evaluation of durability income convergence of Bosnia and Herzegovina to the European Union

Estimating the durability of income convergence implies an estimation of the time period needed to bring the income of countries covered by the analysis of the average value of income at the level of formed integration, but based on the current level of development, and the average long-term growth rate in the past period. Accordingly, the objective of the assessment is not to argue for forecasting future trends, but an analysis of the current level of development, pointing to divergent income trends, and the problem of uneven economic development in the economically globalized world. In particular, in the case of BiH, the longevity assessment in this paper should indicate the time distance of BiH from the average level of income of the EU-28. Based on this, the created econometric model examined the determinants of economic growth in BiH, which created a basis for creating an economic policy aimed at reducing the absolute GDP *p.c.* gap in relation to the EU-28, which in the coming period should result in absolute income convergence, and a reduction in the time period of the same.

The results of the research in this part of the paper are related to the analysis of the longevity of the BiH convergence process towards the EU-28, measured by GDP *p.c.*, and provide answers to the following questions: (1) How far is BiH from reaching 100% of the average GDP *p.c.* EU, and how much from 75% of average GDP *p.c.* EU? (2) At what rate should the economy of BiH grow to maintain the existing absolute value of GDP *p.c.* gap in relation to EU countries by 2030, if the EU is growing at the average rate of 2005-2015? (3) At what rate should the economy of BiH grow to eliminate GDP *p.c.* gap by 2030, if the EU is growing at the average rate of 2005-2015? (4) Have the EU enlarged countries plus Romania, Bulgaria, and later Croatia achieved income convergence, measured GDP *p.c.*, at the EU average level?

For the analysis of the durability of income convergence, the average value of GDP p.c will be used. The EU, other members and BiH from 2015, given that they are the latest available official data. Also, two variants of growth estimates of GDP *p.c.* will be used, including: growth in GDP growth rate from 2015, and the assessment of durability of convergence of income based on the average growth rate from 2005 to 2015.

The data presented in Table 2 best illustrate the current state of income "convergence", or divergence within the EU, but also on the entire European soil. There are significant developmental deviations resulting from, first and foremost, the "readiness" of the EU for a more just regional policy and the will to remove disproportionate developments, which is hard to expect, given that even in countries that decide on regional EU policy, no equal distribution of wealth was made on the internal plan.

Apart from BiH and "new EU member states", the analysis includes Serbia in order to analyze the situation and perspectives in comparison with BiH by comparative analysis. Of all the analyzed countries, BiH has the lowest value of GDP *p.c.* For achieving the average value of GDP *p.c.* of the EU from 2015, in the event that BiH is growing at a growth rate of 2015, which was 3%, it takes 68 years, and for reaching 75% of the average EU GDP *p.c.* it takes 58 years, and in the event that BiH is growing at an average growth rate of 2005-2015. It takes 75 years for 100% GDP *p.c.* EU, and 64 years for 75% of the average GDP *p.c.* EU. This scenario is optimistic, since it does not imply EU growth, but it is hard to expect and it is certain that this process of convergence with the existing political, legal, technological and institutional capacities is more long-term than the estimated one. An additional reason for this is the fact that it is difficult to maintain a high rate of economic growth in the long run and especially 3% above the EU growth, as the growth rate from year to year increases the basis in relation to which the growth rate is calculated.

In the observed period, Serbia had lower growth rates, which significantly prolonged the estimated convergence period. The GDP growth rate in Serbia in 2015 was only 0.7%, and the average growth rate for the period 2005-2015 was 1.5%. This is a scenario that could hit BiH as well, since Serbia has achieved higher GDP *p.c.* values in relation to BiH, which amounts to 4,700 EUR *p.c.*, so it is difficult to increase the growth rates with the existing capacities in the long run, which results in a lower long-term growth rate of Serbia of 1.5%. The estimate is that Serbia would need 260 years with the GDP growth rate from 2015 for achieving the GDP *p.c.* value of EU from 2015, and 122 years if it grows at the average rate of 2005-2015. By comparison, Croatia which is a member of the EU from 1 July 2013 to reach GDP *p.c.* of EU from 2015 will need 64 years if it grows at a growth rate of 2015, and if it grows at an average long-term rate, it will never surge or will never achieve absolute income convergence towards the EU, which does not mean that Croatia is in a worse position in relation to BiH and Serbia, but that Croatia has a higher value of GDP *p.c.*, and

a higher degree of capacity utilization, which also leads to a lower growth rate. Such data indicate the limited growth capacity of the Western Balkan countries, which are primarily depicted in a smaller concentration of highly accumulated economic branches, underdeveloped capital markets, a lower concentration of capital and developed technologies. This means that both Serbia and BiH will have lower growth rates with GDP *p.c.* growth In the long term, given that Croatia has a GDP p.c value of 10,400 EUR, which is more BiH.

Of all the "new" EU members, the highest GDP *p.c.* value have Malta, Cyprus, and Slovenia, which are also members of the eurozone, but none of these countries have fully implemented the income convergence measured by GDP *p.c.* With the growth rate of 2015, the closest to it is Malta. Malta needs only 5 years, and with an average growth rate of 2005-2015 Malta needs 11 years. Cyprus has somewhat lower growth rates, and hence the estimated convergence rate is estimated at the growth rate of 2015, 21 years are needed, and according to the long-term growth rate, it takes 110 years. Slovenia needs 5, ie 11 years to achieve GDP *p.c.* EU from 2015. What is more important here, watching EU members is that income convergence is not implemented, and ultimately the level of wealth and well-being depends largely on the country's readiness to use its comparative and competitive advantages, and gradually convergence of economic variables with the EU average without there is the true willingness of the EU to reduce regional developmental disparities.

The previously presented scenario of the longevity of the convergence process implies achieving the level of EU income in 2015, ie it does not imply an increase in the average EU income. When the increase in EU average income is included in the analysis, the results of the durability assessment receive a completely different dimension. For example, if the average EU income grows at the rate of 2015, BiH would need 257 years with a growth rate of 2015, with an average long-term growth rate of 410 years for real income convergence according to the EU average. Also, the growth of EU income at the 2015 rate would cause divergent movements for both Serbia and Croatia, as well as a large number of EU and Eurozone members, as presented in Table 2. Given that the EU's long-term growth rate for 2005-2015 is lower and amounts 0.9%, growth at that rate reduces the period of convergence in relation to growth from 2015, but this period is much longer compared to the convergence to the value of income from 2015, and it causes divergent movements in some countries.

Table 2. *Estimation of the durability of income convergence*

Country	GDP p.c. in EUR (2015)	Annual growth rate GDP p.c. 2015; Average 2005-2015 in %	Estimation of the durability of reaching 100% of the average GDP p.c. EU						% Growth to remove GDP by 2030 if the EU grows at the rate of 2005-2015	% Growth to prevent absolute GDP p.c. gap growth by 2030 (EU growth at the average rate of growth 2005-2015)
			100% of the EU average GDP p.c. from 2015		EU growth rate from 2015		EU growth at an average rate of 2005-2015			
			Growth by rate 2015	Average% growth 2005-2015	Growth by rate 2015	Average% growth 2005-2015	Growth by rate 2015	Average% growth 2005-2015		
EU – 28	28,900	(2.2); (0.9)	-	/	-	/	-	/	/	/
Czech Republic	15,800	(4.5); (2.0)	14	30	27	divergence	17	56	6.40%	3.63%
Cyprus*	20,800	(1.6); (0.3)	21	110	divergence	divergence	48	divergence	4.47%	2.90%
Estonia*	15,400	(1.4); (1.5)	45	42	divergence	divergence	127	106	6.58%	3.70%
Hungary	11,100	(2.9); (0.7)	33	137	140	divergence	49	divergence	8.93%	4.75%
Latvia*	12,300	(2.7); (1.6)	32	54	175	divergence	48	124	8.19%	4.40%
Lithuania*	12,900	(1.6); (2.4)	51	34	divergence	413	117	55	7.85%	4.24%
Malta*	21,400	(6.2); (2.9)	5	11	8	44	6	15	4.27%	2.84%
Poland	11,200	(3.6); (3.9)	27	25	70	57	36	32	8.87%	4.72%
Slovakia*	14,500	(3.6); (3.6)	20	20	51	51	26	26	7.01%	3.88%
Slovenia*	18,700	(2.3); (1.1)	19	40	445	divergence	32	220	5.21%	3.17%
Bulgaria	6,300	(3.0); (2.3)	52	67	195	1558	74	111	13.12%	7.03%
Romania	8,100	(3.8); (2.7)	34	48	82	261	45	72	11.24%	5.94%
Croatia	10,400	(1.6); (0.0)	64	infinite	divergence	divergence	148	divergence	9.41%	4.98%
Serbia	4,700	(0.7); (1.5)	260	122	divergence	divergence	divergence	306	15.36%	8.44%
Bosnia and Herzegovina	3,900	(3.0); (2.7)	68	75	257	410	97	113	16.80%	9.42%

Source: Author's calculation based on www.ec.europa.eu/eurostat, www.data.worldbank.org & www.cbbh.ba (Accessed: February 11, 2017)

A particularly significant issue of convergence of income *p.c.* refers to determining the necessary growth rates for removing regional income differences, as well as determining the necessary growth rate required to maintain the existing level of uneven distribution of income. Assuming that EU income is growing at an average long-term growth rate of 0.9%, BiH income *p.c.* should grow at an annual rate of growth of 16.80%, so that by 2030 (in 15 years) the GDP *p.c.* gap between BiH and the EU would be eliminated. This rate of growth is unrealistic and BiH had that rate of growth after the war (1992-1995), when the development of BiH was based on donations from abroad, on the one hand, and when it had a low value of GDP or the base, on the other. There is now no significant inflow of capital from abroad that would significantly affect growth creation, on the one hand, and the growth base is much higher, on the other hand, confirming the thesis on the unrealistic growth rate of 16.80%. Serbia needs an annual growth rate of 15.36%, and Croatia 9.41% for removing the income gap with the EU average by 2030. It is critical for Member States, candidate countries and potential EU candidate countries to gradually approach the values of macroeconomic aggregates, or variables with average values at the EU level, and it is even more important that, contrary to convergence, they do not generate divergent movements, which would increase the income level gap even more, but also the overall level of well-being compared to the EU average. In that sense, in order to maintain the existing absolute gap in per capita income by 2030 compared to the EU average, if BiH and the EU grow at the average long-term rate of 2005-2015, it is necessary that BiH by 2030 grows at a rate of 9.42%. Under the same conditions, it is necessary that income in Serbia is growing at a rate of 8.44%, and in Croatia at a rate of 4.98%. These growth rates implied a steadily higher growth rate than the EU in the case of BiH by 8.32%, Serbia 7.54% and Croatia 4.08%, which is not realistic if we take into account the average long-term growth rate in the period 2005-2015. So what seems to be more realistic is that in the case of BiH and Serbia, it is surely an increase in the absolute income gap in relation to the EU average, which means creating even greater differences in the level of well-being of the population. It is likely that Croatia will have a similar scenario, given that the economic trends in Croatia prone to conjuncture business cycles, as evidenced by the long-term average growth rate amounting to 0.0% for the observed period. When it comes to EU member states, Cyprus, Slovenia and Malta need a minimum growth rate of income to remove the absolute gap in income by 2030 compared to the EU average, but it is not realistic to expect since it is necessary that the long-term growth rate of the observed countries needs to be 3.57%, 4.31%, and 3.37%, respectively, higher than the average growth of the EU.

Estimates of the longevity of income convergence of the countries mentioned above included the estimated long-term growth rate, all assumptions and determinants of growth were not taken into account, the difficult prediction of future market movements and possible oscillations questioned the meaning of the overall assessment. However, the meaning of projections is not an argumentative future, but above all an illustration of the problem of convergence in the world that surrounds us and which is increasingly economically globalizing (Bogunović, 2011, p. 207).

3.2. Determinants of income convergence of Bosnia and Herzegovina to the European Union

In order to complete the analysis of the assessment of the longevity of income convergence of BiH towards the EU, in this part of the paper, using the multiple regression analysis, the impact of the following economic variables on the GDP of BiH for the period 2005-2015 is analyzed: GDP level EU-28 , FDI, public debt, current account deficit and budget deficit, in order to determine which of the observed variables needs special attention in the forthcoming period in order to accelerate the process of income convergence of BiH towards the EU through which real convergence can be observed.

The analytical form of the multiple regression model is given by the following expression:

$$GDP\,BiH_i = \beta 0 + \beta 1\,GDP\,EU-28_i + \beta 2\,FDI_i + \beta 3\,PB_i + \beta 4\,DTR_i + \beta 5\,BD_i + \varepsilon_i$$

The following table shows the movement of the average value and standard deviation for all observed variables.

Table 3. *Descriptive statistics of dependent and independent variables in the multiple-regression model*

Descriptive statistics			
Variable (mil. BAM)	Mean	Std. deviation	N
GDP BiH	24625.3636	3271.66640	11
EU-28	25639818.3100	1690857.5966	11
FDI	898.8909	636.83685	11
Public debt (PB)	9248.6327	1818.92786	11
Current account deficit (DTR)	2163.9455	707.04839	11
Budget deficit (BD)	350.9073	346.25935	11

Source: Authors' calculation

Table 4 shows the movement of the correlation coefficient for the observed variables within the defined multi-regression model. Data analysis showed that the correlation coefficient between the two variables, namely GDP BiH and EU-28 is extremely high, amounting to 0.849, therefore, it can be concluded that GDP growth EU-28 monitors the growth of GDP BiH. In addition, it has been proven that the two tested variables are in a linear relationship, and that this coefficient of correlation is significant because $P = 0.000 < 0.05$.

Table 4. *Correlation coefficient of the multiple-regression model*

		GDP BH	EU	FDI	Public debt	DTR	Budget deficit
	Correlations						
Pearson correlation	GDP BH	1.000	.849	.706	.834	-.328	.058
	EU 28	.849	1.000	-.109	.883	-.243	-.292
	FDI	.706	-.109	1.000	-.366	.555	-.328
	Public debt	.834	.883	-.366	1.000	-.409	-.140
	DTR	-.328	-.243	.555	-.409	1.000	-.308
	Budget deficit	.058	-.292	-.328	-.140	-.308	1.000
Sig. 1-tailed)	GDP BH	.	.000	.010	.001	.162	.433
	EU 28	.000	.	.374	.000	.236	.192
	FDI	.010	.374	.	.134	.038	.162
	Public debt	.001	.000	.134	.	.106	.341
	DTR	.162	.236	.038	.106	.	.178
	Budget deficit	.433	.192	.162	.341	.178	.

Source: Authors' calculation

Data analysis in Table 4 showed that the correlation between the two variables, including GDP BiH and FDI, is positive, which means that the growth of an independent variable causes the growth of the dependent variable. This correlation coefficient is quite high, and it is 0.706 and statistically significant, since $P = 0.010 < 0.05$. Therefore, these variables are in a linear relationship. This analysis once again confirms the importance of FDI to the economic growth of BiH. Therefore, in the coming period, BiH should pay special attention to creating a favorable environment for FDI, and the first precondition, in addition to political stability and reducing corruption, is the progress in the competitiveness reports of international financial institutions,

since BiH took 174th position of the 190 countries observed in the World Bank report "Doing Business" for the year 2017 according to the criteria for "starting a business". This ranking of BiH is caused by the following indicators: 12 procedures must be passed, 65 days, all of which costs 13.5% of per capita income, and 28% of capital per capita income for starting a business in BiH. If we add the need of 7 procedures, 24 days, 5.2% of the costs of the value of the registered property to these data, and that the quality of the state administration is rated by a coefficient of 12.5 out of 30. Then, for obtaining a building permit, 15 procedures are required, 179 days, 18.5% of the cost of building value. Of course, 8 procedures, 125 days and 400.2% of the per capita income required for electricity generation are contributing to the difficult market entry. Therefore, it is necessary to systematically analyze each of the indicators related to starting a business, and then continuously work on the improvement of each of the indicators individually, which will contribute to the growth of the competitiveness of BiH in the international environment, as well as the increased attractiveness for FDI in BiH. It is especially important to emphasize that the revenues collected on the above basis have a very small share in the total income structure of all levels of government in BiH, and that by reducing the aforementioned costs and reducing the administrative procedures directly, certainly with a high degree of political stability, which is an indispensable factor in attracting FDI, a positive impact on the level of FDI, which ultimately would compensate for the loss of revenue generated by the reduction of costs related to starting a business in BiH.

Based on the analysis made, it can be concluded that the correlation coefficient between GDP BiH and public debt is extremely high, and it is 0.834. In addition, the linearity test showed that the two variables are in a linear relationship, and that this correlation coefficient is significant, since $P = 0.001 < 0.05$. This shows that the generated public debt significantly affects the level of purchasing power, the movement of aggregate demand, with the need to take into account the sustainability of the same. Namely, it is necessary, by public debt, to concentrate the collected funds into productive investments that will over time finance the repayment of these same debts. That is the problem of public debt in BiH, since public funds are mainly focused on financing bulky state administration, as well as social benefits, thus the issue of sustainability of public debt is raised, given that the functioning of BiH significantly depends on the financial injections of international financial institutions, which are conditioned by different requirements in terms of creating economic policies, which in turn entails the question of the existence

of economic sovereignty of BiH. Overall, this analysis has shown that there is a positive and statistically significant impact of public debt on economic growth, but it is only necessary, in the coming period, to take into account the direction by borrowing the collected funds.

The correlation coefficient between GDP BiH and the trade deficit is low and negative, which means that the growth of one variable affects the fall of the other to a small extent. The linearity test showed that the two variables are not in a linear relationship, and that the resulting correlation coefficient is not significant, since $P = 0.162 > 0.05$. The correlation coefficient between GDP BiH and the budget deficit is only 37%, but given that it is not in a linear relationship, it is not significant, since $P = 0.131 > 0.05$.

Table 5. *Summary of the multiple-regression model*

Model summary				
Model	R	R square	Adjusted R square	Std. error of the estimate
MR	.974[a]	.949	.898	1042.85008
a. Predictors: (Constant), Budget deficit, EU 28, DTR, FDI, Public debt				

Source: Authors' calculation

The multiple regression correlation coefficient for all variables amounts to a high of 0.974, therefore, the correlation between all variables is extremely high. The representativeness of the model is also very high, as is the corrected determination coefficient. The estimated error of this model is close to 70% lower compared to standard deviation, and therefore, this multiple-regression model gives much more information than descriptive statistics.

Table 6. *ANOVA test of multiple-regression model*

ANOVA[a]						
	Model	Sum of squares	df	Mean square	F	Sig.
1	Regression	101600329.133	5	20320065.827	18.684	.003[b]
	Residual	5437681.412	5	1087536.282		
	Total	107038010.545	10			
a. Dependent variable: GDP BH (mil. BAM)						
b. Predictors: (Constant), Budget deficit, EU 28 (mil. BAM), DTR, FDI (in 000 000 BAM), Public debt						

Source: Authors' calculation

An analysis that includes the compatibility of dependent and independent variables in this case is important, and it can be concluded that these variables have a high degree of dependency. Accordingly, the hypothesis set is proven, *i.e.* the determination coefficient is significant, since P = 0.003 <0.05.

Table 7. *Coefficients of the multiple-regression model*

Model B	Unstandardized coefficients		Standardized coefficients	t	Sig.
	Std. error	Beta			
(Constant)	-34492.094	9963.286		-3.462	.018
EU 28	.002	.001	1.282	4.563	.006
FDI	1.242	.717	.242	1.732	.014
Public debt	.774	.532	.431	1.455	.025
DTR	-.970	.611	-.210	-1.589	.173
Budget deficit	1.887	1.385	.517	3.528	.017

Source: Authors' calculation

After evaluating the coefficients of the set multiple-regression model, we get the following form of the set model:

$$GDP\ BiH = -\ 34492 + 0.002\ GDP\ EU\text{-}28 +$$
$$1.242\ FDI + 0.774\ PB - 0.97\ DTR + 1.887\ BD$$

Based on the previous function, it can be concluded that the increase of the EU-28 budget by 1% has an impact on the increase of GDP BiH by 0.002%. In addition, it should be emphasized that the $\beta 1$ constant is statistically significant, since it is 0.006 <0.05.

The increase in FDI by 1% affects the GDP growth of BiH by 1.242%. The $\beta 2$ constant, which is commented, is statistically significant because P = 0.014 < 0.05. This again confirms the importance of FDI for economic growth in BiH, which is described in the explanation of the correlation coefficient. The increase in public debt by 1% affects GDP growth of BiH by 0.774%. Also, as in the previous case, the $\beta 3$ constant is statistically significant because P = 0.025 <0.05. This is confirmed by the positive impact of public debt on economic

growth through the creation of aggregate demand. However, special attention needs to be paid to creating a sustainable public debt, so that the country does not get into the state of insolvency or insolvency in the long run.

The increase in the trade deficit by 1% affects the GDP of BiH decline by 0.97%. In relation to these two variables, the β4 constant is not statistically significant, since P = 0.173> 0.05, which tells us that, in the defined multi-regression model, the trade deficit statistically does not significantly affect the economic growth of BiH.

The increase in the budget deficit by 1% affects the GDP of BiH growth of 1.887%. In this case, the β5 constant, which is commented, is statistically significant, since P = 0.017 <0.05. Such a result has its own economic logic, given that the budget deficit is created by increased public expenditures in relation to public revenues, which means that there is an increase in aggregate demand. However, problems with the budget deficit can create inflation and bring the economy into a state of macroeconomic instability in wider sense, and therefore it is necessary to take into account the stabilization of public finances, and economic growth should be based on creating a favorable business environment for domestic and foreign direct investment, and creating sustainable public debt.

4. Conclusion

The conducted analysis of the assessment of the longevity of income convergence of BiH towards the EU best illustrates the current level of the development of BiH and its (un)readiness for EU membership. The estimation of the longevity of income convergence has revealed the existence of large differences in the level of development of both (potential) candidates and EU members in relation to the average level of well-being in the EU, which means that the EU should pay special attention to the creation and implementation of a more just regional policy in the coming period, which should reduce the created absolute GDP *p.c.* gap. The analysis of income convergence within the EU has shown that only EU membership does not mean economic progress, and the achievement of the average living standard at the EU level. Therefore, in order for BiH to generate positive economic effects of integration, it is necessary first of all to work on fulfilling the formal criteria for EU membership, defined in Copenhagen in 1993, which should contribute to achieving real convergence. The question of the process of

the accession of BiH to the EU in BiH is reduced to establishing a political consensus in the implementation of this process, and the analysis of economic criteria is reduced to the BiH Progress Reports to the EU, which the European Commission issues each year, where the stand explains the fulfillment of economic criteria, without concrete suggestions for improvement in any area. To generate positive effects of integration, and reduce the absolute GDP *p.c.* gap in relation to the EU average, it is essential that BiH continuously analyzes the fulfillment of economic convergence criteria, through the prism of formal criteria, and the criteria of real convergence, and on the basis of it creates a program of economic policy that will be applied vertically to all levels of government. It is particularly important that BiH, with the creation of political stability and a reduction in the level of corruption, is working to create a better picture in the reports of international financial institutions in terms of ease of doing business. This implies, first and foremost, a reduction in costs and administrative procedures for starting a business, which is not difficult to do at all levels, on the one hand, and that revenues on these bases have a small percentage share in total revenues of all levels of government, on the other. The largest statistically significant positive impact on the movement of GDP of BiH, of all observed variables, has a level of GDP of the EU - 28, the level of foreign direct investments and public debt. As the movement of GDP EU cannot be affected by BiH in order to accelerate the process of real (income) convergence towards the EU in the coming period, special attention should be paid to creating a favorable environment for the growth of FDI and directing public borrowing of the collected funds into productive investments.

Acknowledgements

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MACROECONOMIC ASPECTS OF ASSOCIATION OF BOSNIA AND HERZEGOVINA IN THE EUROPEAN UNION IN THE LIGHT OF THE EUROZONE CRISIS

MAKROEKONOMSKI ASPEKTI PRIDRUŽIVANJA BOSNE I HERCEGOVINE EVROPSKOJ UNIJI U SVIJETLU KRIZE U EUROZONI

Abstract

The crisis, with currently facing the euro area and the entire European Union (EU), is having a negative impact on its further enlargement. It is certain that any further expansion will require ever more complicated conditions for potential candidates, which will significantly affect the fulfilment of nominal and real convergence criteria for future EU members. Bearing in mind the foregoing, the overall aim of this paper is to analyse the macroeconomic aspects of the process of Bosnia and Herzegovina's (BiH) accession to European integration, through the analysis of convergence criteria, as a determinant of monetary policy, amplified in light of the current eurozone crisis. The basic directions of BiH's economic policy include further approximation and institutionalization of relations with EU, in accordance with the Stabilization and Association Process. The authors came to the general conclusion that, in fact, the perspective of further BiH's approach to the EU will depend mostly on the dynamics of resolving internal issues within the Union itself.

Keywords: accession process, Bosnia and Herzegovina, European Union, eurozone crisis

JEL: E60, F45

Sažetak

Kriza sa kojom se, trenutno, eurozona, ali i cijela Evropska unija (EU) suočava, negativno djeluje na njeno dalje proširenje. Sigurno je da će svako dalje proširenje zahtjevati sve komplikovanije uslove za potencijalne kandidate, što će značajno tangirati i ispunjavanje nominalnih, odnono realnih kriterija konvergencije za buduće članice Unije. Imajući u vidu prethodno navedeno, opšti cilj rada je istražiti i analizirati makroekonomske aspekte procesa pridruživanja Bosne i Hercegovine (BiH) prema evropskim integracijama, kroz analizu kriterija konvergencije, kao determinante monetarne ekonomske politike, sagledano u svjetlu aktualne krize eurozone. Osnovni pravci ekonomske politike BiH podrazumijevaju dalje približavanje i institucionalizaciju odnosa sa EU, i to u skladu sa Procesom stabilizacije i pridruživanja. Autorice su došle do opšteg zaključka da će, zapravo, perspektiva daljeg približavanja BiH ka EU zavisiti najviše od dinamike rješavanja internih pitanja u samoj Uniji.

Ključne riječi: proces pridruživanja, Bosna i Hercegovina, Evropska unija, kriza u eurozoni

JEL: E60, F45

1. Introduction

The support that European citizens and EU members provide for European integration has been in decline for years. Most citizens do not see significant benefits from membership and believe that the membership is not good for them and their country. There are many factions within EU, deeply divided away from the vision of their founder, and there is noticeable lack of communion among the member states. Citizens of the EU do not feel communion, unity, solidarity and belonging. They are increasingly moving away from the idea of a united Union. The EU has been facing numerous challenges over the past few years, which have been able to overcome all the difficulties. Most EU member states are confronted with a crisis of confidence in Europe and its institutions, while at the same time, developing nationalist political parties leading to the weakening of European solidarity. The Economist Intelligence Unit (EIU), an analytical group, published a report called *Europe at the Shooting Frontier* that presented seven key issues that threaten EU in economic and political terms that could lead to its breakup. The following issues have been identified: the British referendum, Greek debt, monetary policy and productivity decline, tensions with Russia and migrant crisis.

However, the strategic priority of BiH is membership in the EU. The basic directions and activities of the BiH foreign policy imply further approximation and institutionalization of relations with the the Union, in accordance with the Stabilization and Association Agreement (SAA). In fact, the prospect of further BiH closer approximation to the EU will depend mostly on the dynamics of resolving internal issues within the EU itself. Today, the idea of a united EU is in crisis, and that is precisely the cause of the crisis that the Union is facing today (Dullien & Torreblanca, 2012, p. 4).

Bearing in mind the subject of research, this paper tries to analyse the path of BiH towards European integration, in the light of the current financial crisis of eurozone, as well as the risks that BiH faces. The first significant step towards European integration for BiH was - the introduction of a visa-free regime for those with biometric passports on December 15, 2010. The entry into force of the SAA represents a significant step forward in the relations between BiH and the EU, especially in terms of establishing a direct political dialogue between the EU authorities - legislative bodies' - BiH executive. The EU Reform agenda for 2015-2018 was adopted for faster accession. Taking into account the above, this paper also deals with the analysis of the achieved level of convergence criteria in BiH.

Structure of this paper is in the next order: the first part of the paper is a review of literature about theory of convergence and the process of joining BiH to the EU in the context of European crisis. Then, the methodology used in the work is presented as a second part of paper. In the end, the focus is on the third part of the paper - results and discussion - the analysis of the achieved level of convergence criteria in BiH and place of BiH in the EU in face of the eurozone crisis. The paper gives some conclusions, as well as recommendations for further research on this topic.

2. Literature review

Baldwin (2010) combines basic information on European history, institutions, law, politics, and individual policies. Therefore, in his own way, he presents the facts, theories, and contradictions that drive accelerated changes in the heart of Europe.

Bilas (2005) writes about joining the EU countries and their participation in ERM II. In his research is written about meeting the criteria that must be

fulfilled for joining EU, as well as the advantages and disadvantages that can be derived from it. After joining the Union, new members are expected to participate for at least two years in ERM II before introducing the euro.

Đonlagić (2006) explores the process and implications of the integration of the monetary system of BiH into the EMU, which will follow after joining BiH into full EU membership. He examines the role of the Central Bank in the management of monetary policy, the process of integration into the EU and EMU countries of new and future members, and analyses the future pace of integration of the monetary system of BiH in the EMU, through a comprehensive analysis of the current institutional solution to the monetary policy management by the Central Bank of BiH, in the context of fulfilling the criteria of the convention and the experiences of the countries that are now in the process of integration towards the EMU.

Furtula and Marković (2010) have studied more closely the way EMU functions, as well as efforts made by Serbia to meet all the necessary and necessary conditions for joining the EU. The results achieved in fulfilling the Maastricht criteria of the convention are positive. The second phase is more difficult to achieve and refers to the real convention. Regarding the processes of economic integration, there is a significant number of authors from the Balkans who have studied the phenomenon according to which, for example, Ganić analysed EMU through costs and benefits for EMU connection.

Furthermore, in his research, Samardžić (2013) emphasizes that through several decades of development, systematic integration of a number of areas of public life has been carried out, starting from the common market to the monetary union, but that the process was not accompanied by adequate social integration. This issue is gaining momentum in today's crisis.

Research by Shmitran (2016), persist that the integration model, promoted by Jean Monnet in the aftermath of the systemic crisis of 2005 in EU, showed its contradictory properties. The need for a quick and efficient decision-making system marginalized the European Commission and emphasized the European Council as a key political institution. The Lisbon Treaty, which came into force on December 1, 2009, complicated the already complex process of policy and decision-making within the EU. Due to the great disagreement of member states in terms of further development of the Union, differentiated integration is imposed as the future dominant model of integration.

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Žarković (2016) states that the economic crisis has erased the progress of European economies, achieved in the years before the crisis. Stable economic growth and employment that characterized the decade before the crisis, have disappeared. In conditions of growth and economic prosperity, the asymmetry of the EU and eurozone did not create major problems. However, the economic crisis in the EU had more pronounced intensity and longer duration compared to the US and an unequal intensity for individual member states of the EU. The crisis revealed the fundamental weaknesses of the EU. The Union is facing a major challenge: how to ensure prosperous development in the future? The Union needs a greater degree of political and fiscal integration, greater investment in research and to develop an economy based on knowledge and innovation, higher education, higher employment and environmental protection. The Union needs to solve its own weaknesses and to provide new sources of power through a further integration process. Dabić (2016) argued that it is necessary a more serious and far-reaching reform of the EU system.

3. Research methodology

The first part of the research (desk research) will focus on the secondary data sources, which will be used to develop the theoretical part of the paper work through the analysis of recent scientific and professional literature in the field of regional economics and economic integration. The initial selection of literature was carried out with the insight into the research areas, where numerous databases were searched. In this research, the most reluctant methods are:

− An analysis method by which the disaggregation of known facts intends to obtain a clearer picture of the study objects, which will be used in all parts of the work.
− The synthesis method (that linked simpler facts and conclusions to more complex and general assertions for the purpose of a better and more systematic study of the relationships between research object) will be used in the last chapter of the paper.
− The induction method, as a systematic and consistent application of an inductive way of thinking and concluding with the goal of proving or revealing the truth from the individual as a general principle, from the effect on causes, from factual laws, from consequences to principles, mostly will be used in the fourth and fifth parts of the work.
− A deduction method based on a deductive way of thinking that always represents the recognition of a particular and individual based on the general properties.

− A description method for describing concepts, rules, and procedures will be used in the fourth and fifth parts of the paper. The goal is to define in detail achieved level of convergence criteria in BiH and place of BiH in the EU in face of the eurozone crisis.

− Comparative method for comparing the same or similar facts, phenomena, and processes. It will be used to compare the criteria of the nominal convention of the new member states and their impact on the EMU's stability.

The empirical research will be carried out by the classification of available data from different sources, namely: Eurostat, IMF, World Economic Outlook Database, World Bank, and European Union official web site. In addition to this, data are collected from available literature, books and magazines. Also, statistical and other official publications will be used in this paper.

4. Results and discussion

4.1. Accession of Bosnia and Herzegovina to the European Union and European Monetary Union - a short retrospective

After 1995, through many financial assistance from BiH, the contribution to restoring factories and historical monuments is great. However, there were no renewed broken links, no profitable business started, and there were no major foreign investments (Đurić, 2014, p. 750). Initially, CARDS program was used to support the Stabilization and Association Process in BiH, and since 2007, almost all funds for assistance to candidates and potential candidates have been integrated into IPA program for pre-accession assistance. Candidate countries withdraw funds on five components, BiH as a potential candidates, withdraw only the first two bases: transitional assistance, institution building and cross-border cooperation.

Key risks that BiH is confronting, can be divided into three groups: global dangers, regional threats and intrusive threats (Đurić, 2014, p. 750). Global threats are being considered within the context of global developments in international relations. Globalization has led to very rapid social and economic development in almost all countries of the world. In this context, BiH points out as a special threat to its security: international terrorism, proliferation of biological, chemical and nuclear weapons, illegal trafficking in different technologies, human trafficking and narcotics, as well as increased migration

arising from armed conflict and discrimination. On the regional security plan, the challenges BiH faces, relates to its experience in the transition process, centralized to a free market economy. The specific position of BiH in the Stabilization and Association Process has affected the increase in the engagement of the countries of the region in the process of cooperation. Through the Stabilization and Association Process itself, the EU has erased the distinction between bilateral and multilateral approaches. The priority goal in BiH is long-term stability.

In all likelihood, BiH's next steps on the road to European integration are: 1) BiH submits a credible application for EU membership; 2) The European Commission sends a detailed Questionnaire; 3) The Commission evaluates the responses submitted by BiH and makes recommendations to the Council of the EU on whether BiH approves the candidate status, and may also set the date for opening accession negotiations; 4) Upon the conclusion of the negotiations, an Accession Treaty is ratified by the Member States, and the European Parliament gives its consent, and 5) The country joins the EU on a specific date.

However, there are a series of favourable effects on the BiH economy, in the event of EU membership. One of them is that a single currency leads to lower transaction costs and higher price transparency. The second is that a stable currency will reduce the burden of debt burdening EU members. Acceptance of a single currency implies the protection against sudden changes in exchange rates, and consequently of the reduction or loss of expected profit. An easy allocation of the factors of the prospects is one of the advantages of introducing a single currency.

4.2. Analysis of the achieved level of convergence criteria in Bosnia and Herzegovina

Convergence criteria represent the economic conditions established by the Maastricht Treaty, which assess the readiness of EU countries to participate in the economic and monetary union. They represent the following criteria (Kersan & Skabić, 2010, p. 14):
−   Achieving a high degree of price stability.
−   The inflation rate should not be higher than 1.5% in relation to the inflation rate in the first three countries with the most stable prices. The goal of defining a low inflation rate, is to create trust in a single currency, and to facilitate its use in international relations.

- Budget deficit should not exceed 3.0% of GDP. It is calculated on the basis of the relationship between the estimated and realized government debt-to-GDP ratioand the internal gross product measured by market prices. Deficit implies the need for a net loan.
- The general government debt-to-GDP ratio may not exceed 60.0% of the GDP of the country. It is calculated by the ratio of total gross indebtedness and gross domestic product. General government debt-to-GDP ratio includes total gross debts expressed in nominal value at the end of the calendar year, determined by sectors of public authorities. The central issue of economic and social policy is the level of budget deficit and general government debt-to-GDP ratio. The European Commission is responsible for the provision of statistical data.
- Long-term nominal interest rates during the year must not deviate more than 2.0% from the interest rates of the three most successful countries of the Union, or three countries with the lowest interest rates. The rate of interest is measured on the basis of long-term government bonds or securities, while considering differences in definitions among different countries.
- Stable exchange rate - Maintaining normal fluctuations within the limits of the specified foreign exchange mechanism of the European Monetary System for at least two years, without devaluation in relation to any currency of a member state. Member States must act in the Exchange Rate Mechanism, ERM. This means that the fluctuation of the exchange rate between the euro and the currency is within the allowed limits.

It is generally known that the second largest trading block in the world is eurozone. The introduction of the euro (single currency) has accelerated financial market integration, eliminated foreign exchange risk as well as difficulties in the free flow of financial assets and services. By introducing the euro, there are a number of favourable effects on our economy. By adopting a single currency, it implies protection from sudden changes in exchange rates and further from the reduction or loss of expected profit. An advantage is also seen in facilitating the allocation of production factors. The single currency leads to lower transaction costs and more transparency in prices. By comparing prices, businessmen can choose the most favourable suppliers and factors of production and thus achieve higher profits. All this will lead to more intensive economic growth, an increase in the market, a reduction in production costs and financial transactions, and an increase in the role of fiscal policy, as devaluation is excluded as a regulatory instrument (Furtula

& Marković, 2010, p. 5). In addition to these advantages, the negative side of the introduction of the euro is reflected in the potential instability of the euro, which could lead to instability in small economies such as ours. Also, the transition to the euro would cause high costs that would lead to the loss of administrative jobs, exchange offices and banks in this case would have significant losses.

Fulfilling all criteria for convergence is a minimum requirement for the country to join the Monetary Union. Therefore, BiH must go through the process of harmonizing key economic parameters. An important aspect is the analysis of the situation in which our economy is in relation to Eurozone. After that, it is necessary to determine to what extent monetary policy of the Central Bank of BiH agrees with the monetary policy of ECB. However, the primary goal of BiH monetary policy is price stability.

Chart 1. *Comparison of the inflation rate in EU, EMU, and BiH*

Source: http://data.worldbank.org/indicator/FP.CPI.TOTL.ZG (Accessed: November 24, 2016) & EUROSTAT (Accessed: November 22, 2016)

As it can be seen from Chart 1, the inflation rate was the highest in 2008 and amounted to 7.4%. In 2015, it was 3.1%. Compared to the EU Member States, BiH does not meet the first criterion at this time. In the period 2013-2014 this criterion was fulfilled, however, since 2015, the inflation rate is rising again. Inflation in BiH is higher by 3.09%.

Chart 2. *General government debt-to-GDP ratio*

Chart 2 clearly shows that at the end of 2015, BiH general government debt-to-GDP ratio amounted to BAM 11,936,9 million.[1] Compared to 2014 and 2015, the change in general government debt-to-GDP ratio and GDP ratio is insignificant, and the reason for this is the recovery of economic activity in BiH and the slowdown in the dynamics of external borrowing, indicators of indebtedness. The amount of outstanding external debt in 2015 amounted to BAM 581,3 million.[2] The amount of domestic debt at the end of 2015 increased by BAM 237,4 million and amounted to BAM 3,535,4 million.[3]
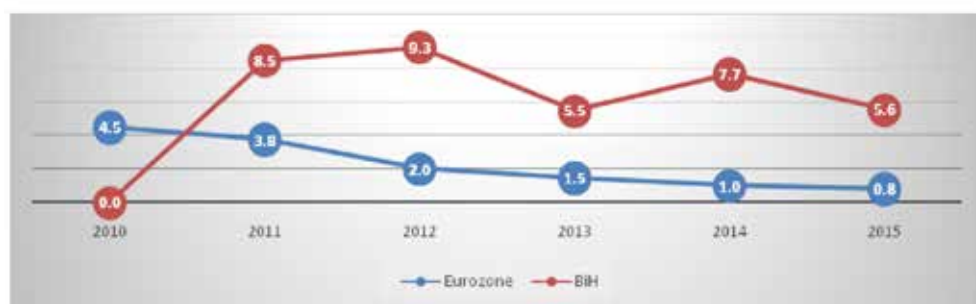
Chart 3. *Deficit-to-GDP ratio*

The current account deficit, as shown in Chart 3, in 2015 compared to 2014, was reduced by 1.89%.[4] The largest increase in the net inflow, in the nominal amount of BAM 83,5 million (9.9%),was recorded on the sub-account of travel services, where, in the last three years, the highest surplus is realized, which is a consequence of the higher number of tourist arrivals and the increase in

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net income from tourism. The higher surplus, compared to the previous year, was also registered on the sub-account of services of finishing and processing of goods in foreign ownership, in the amount of BAM 35,5 million (4.5%), and on the sub-account of telecommunications and information services in the amount of BAM 34,0 million (43.9%).[5]

Achieving the convergence criteria, that relate to achieving a significant level of long-term interest rates, is a major challenge for monetary authorities. The average interest rate on long-term household loans in banks ranged from 5.61% to 13.39% in 2015, while at the banking sector the average interest rate was 7.46% and was lower by 30 basis points in relative to the average interest rate in 2014.[6]The average interest rates on long-term loans in most banks in the system have been reduced in comparison to the previous year, which is largely due to the pronounced competition on the banking market and the weak demand for the population for loans in previous periods. The number of banks opted for the conduct of a policy of lower interest rates. A significant rise in the average interest rate in 2015 was recorded in three small domestic-owned banks, which were likely to have difficulty accessing sources of funding from abroad, and were forced to rely more on domestic sources that are generally more expensive.

After the nominal criteria of the convention, analysis and relative criteria are also, necessary. Low level of wages and their stagnation, as well as high unemployment, have affected the low level of purchasing power and the weak domestic demand in previous years. Due to slow economic recovery, domestic demand could not significantly increase in 2015 and is still one of the risks from the domestic macroeconomic environment. Indicators of the level of well-being of the population, actual individual consumption *per capita* and GDP *per capita* in 2015 are at a very low level (EUROSTAT, News release 117/2016). The indicators of the level of well-being, actual individual consumption *per capita* and GDP *per capita* have not recorded significant changes in relation to the previous two years, and in 2015 they remained at a low level. Preliminary results of European price and GDP comparison program show that in 2015 GDP *per capita* expressed in the purchasing power standard (PPS), and was 29.0% of the EU average. Besides its growth of one percentage point, BiH remains the latest in 37 countries surveyed.[7]After analysing the convergence criteria that countries have to fulfil in order to join EMU, the authors see that BiH meets only one the criterion for convergence that refers to the amount of general government debt-to-GDP ratio in relation to GDP. This is a problem that BiH should solve after joining to EU. BiH's

first step towards European integration is meeting the requirements of the Reform Agenda.

4.3. Place of Bosnia and Herzegovina in the European Union in the face of the eurozone crisis − current situation and perspective

Aware of the crisis in EU, the heads of EU member states have begun the process of political reflection on the future of EU. According to the Bratislava Plan, common challenges are recognized: the concern of people for what they consider to be lack of control and fears about migration, terrorism, economic and social insecurity. After the referendum in United Kingdom, the Union has split into those who advocate the strengthening of integration and those seeking a return to a part of the sovereignty of the member states. Coming out of United Kingdom from the Union can be an opportunity to redefine relations in EU. The main problem is whether EU should be only a single market or develop into a full political community with elements of federalism.

In the early stages of development, the founders of the EU considered that economic integration would be the path towards political integration and ultimately lead to the federalization of the Union. By introducing more and more supra-national elements and institutions in the process of integration, the gradual realization of this concept was carried out. A new integration strategy, that could respond to the crisis and draw the Union out of the crisis, must be a political, not an economic one. The evolution of the EU can go towards the confederation of national states that will be able to deal with common problems, by sharing sovereignty in a way that each country and citizen is able to control their fate. The creation of national states' co-formalization requires a new treaty that will define the Union (Žarković, 2016, p. 10).

EU has passed a difficult and long-lasting path of integration, and the integration motives have been the transformation of Europe into an integrated single market, which will enable faster economic development, as well as the establishment of lasting peace and stability. However, idea of a united EU is in crisis today. Solidarity and cohesion, as key principles in the functioning of the Union, should be important principles in overcoming the current crisis. European countries must become aware of the importance of co-operation and solidarity and jointly develop a vision for development in the future. EU members need unity and further integration in order to overcome the existing numerous weaknesses and ensure further development, and prosperity. According to

European Commission President, Jean-Claude Juncker: "Solidarity is a glue that the Union is holding together" (Juncker, 2016, p.8).

The strategic priority of BiH is membership in EU. The basic activities of BiH foreign policy include further approximation and institutionalization of relations with EEU in accordance with the Stabilization and Association Process. In 2016, BiH made great progress on the path of European integration. In the middle of February 2016, in accordance with Article 49 of the Treaty on EU, BiH submitted a formal application for membership of the Union within the Dutch Presidency of the Council of EU. The Council of the EU accepted BiH application for membership of the Union on September 20 and instructed the European Commission to prepare an opinion on it. The process of preparing an opinion on the Application for membership of BiH in the EU has been officially submitted by sending a questionnaire to the European Commission. The questionnaire contains 3,242 questions grouped in political and economic criteria, and 33 chapters of the acquis communautaire. Filling in the Questionnaire is an entry into a new and more demanding phase of relations between BiH and EU. Answering questions from the Questionnaire will serve the Commission to assess −to what extent BiH is ready to meet the membership criteria. Based on the Commission's opinion, EU Council will decide whether BiH will be granted candidate status for membership of the Union. At the same time, BiH is in the phase of obligatory harmonization of legislation with the regulations of EU, which means that any new or supplementary regulation must take into account the Union solutions in a specific area, if they are regulated by the acquis communautaire.

Most citizens want the European future of BiH, with political stability and the growth of living standards. However, BiH has a problem of internal organization and political activity that often does not allow effective decision-making, which would reflect the will of the majority of citizens and contribute to prosperity. Therefore, in the coming period, it will be shown - whether all political actors are really on the European path, and what are the capacities of the BiH administration to respond to the Union demands.

Filling up the questionnaire is technically the most demanding and most important task in the process of European integration for BiH. This phase envisages a different approach and engagement of institutions and administrations in BiH, and certainly requires their more significant and more active role in relation to previous obligations. Administrative capacity, lack of communication and coordination between different institutions and levels of

government can be an obstacle to effectively responding to requests from the questionnaire. The six-month deadline for BiH to answer the questions from the Questionnaire, is much longer than the deadline left to other countries that have gone through this process before. For example, for Croatia this period was 3 months, Macedonia, Albania, Montenegro for 4 months, and Serbia 2 months.[8] The complicated state structure and insufficient administrative capacity certainly contributed to determining a longer deadline for delivering responses from the countries of the region. It will be the test for the administration in BiH, to show if they have the capacity and how successful the coordination mechanism is to respond to the Union requirements.

BiH is geographically and culturally belonging to Europe, and integration in the Union has no alternative. There are two reasons: 1) because the process of integration will solve internal problems in BiH, but also 2) because the absence from this process would have implicit consequences. The dynamics of integration processes depends primarily on the ability to reach a consensus on the most important issues of political, social and economic development. Considering the fact that Croatia and Serbia have great influence on the political processes in BiH, from the aspect of integration in the EU, Croatia's membership in the Union has already been significantly achieved, as well as the status of Serbia - the candidate country and the opening of negotiation chapters. For BiH and the countries of the Western Balkans, there is often an accelerated approach to joining EU. The process of European integration should contribute to stability and development. But without meeting all the necessary criteria for membership, it is not possible to integrate that will be functional. The example of Romania and Bulgaria shows how harmful the consequences of joining the EU. Accelerated access would not be good either for the countries of the Western Balkans or for the Union, which is currently facing a number of problems.

The crisis facing the EU at the moment, can negatively affect its further enlargement. It is certain that any enlargement will require ever more complicated conditions for candidate countries, but problems in the member states of the Union significantly influence the readiness of members for further enlargement.

5. Conclusion and recommendations

There are a series of favourable effects on BiH economy in the event of EU membership. One is that a single currency leads to lower transaction costs and higher price transparency. The second is that a stable currency will reduce

the burden of debt burdening EU members. Acceptance of the unit currency implies the protection against sudden changes in exchange rates, and therefore of the reduction or loss of the expected profit. An easy allocation of the factors of the prospects is one of the advantages of introducing a single currency.

So, the potential next steps of BiH on the road to European integration are: (a) BiH to submit a credible EU membership application; (b) The European Commission sends a detailed Questionnaire; (c) The Commission evaluates the responses submitted by BiH and makes recommendations to the Council of EUon whether BiH approves candidate status, and may also set a date for opening accession negotiations; (d) Upon the conclusion of the negotiations, an Accession Treaty is ratified by the Member States and the European Parliament gives its consent; (e) BiH joins the EU on a specific date; (f) BiH's goal is to enter the EMU. In order to access one of the largest monetary integrations, it is necessary to fulfil the set criteria of the convention. On this issue, BiH is not on the right track, because only the one related to the amount of general government debt-to-GDP ratio and GDP fills out the set criteria. This is a problem that will be taken into account after BiH joins the EU.

EU must first solve its internal problems in order to be ready for further enlargement, so it can be concluded that the crisis in the Union can significantly slow down its further expansion and, therefore, can slow down BiH path to the Union. On the road to the EU, BiH stands in place. Any attempt to implement the reform ends with the question - which institution has competencies and how a particular economic policy should be harmonized?

Therefore, any attempt to implement new laws ends with a political conflict between some governments institutions. With the entry of BiH into EU, the problems of the organization will not disappear and will potentially cause an even greater crisis (this time within the Union itself). Simply put, beginning of negotiations in the Union, BiH can create more problems than it can solve, when it comes to the institutional arrangement of the country itself and its political and economic issues.

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Endnotes

1 General government debt-to-GDP ratio represents the total external and internal indebtedness of all levels of government (debt of BiH institutions, debt of entities and Brčko District, debt cantons, municipalities and cities). Compared to 2014, debt – to- GDP increased by BAM 420,6 million or 3.7%. Out of the total amount of debt, BAM 8,401,5 million or 70.4% refers to external debt.
2 According to the creditors, the largest portion of the total amount serviced was paid to EBRD (BAM 121 million or 20.8%), then the World Bank (BAM 119,2 million or 20.5%) and IMF (BAM 106, 7 million or 18.4%).
3 The internal debt of BiH consists of the debt of the Entities and the Brčko District, of the obligation based on old foreign currency savings, war claims, general obligations, liabilities on the basis of issued securities, obligations on the basis of credit indebtedness in the country, and obligations on the basis of tax refunds and activated guarantees.
4 The greatest impact on the decrease in the current account deficit was recorded in the goods account, where the increase in exports and the decrease in imports resulted in a reduction in the deficit.
5 http://www.cbbih.ba (Accesed: September 16, 2017)
6 http://www.cbbih.ba (Accesed: September 16, 2017)
7 http://www.cbbih.ba (Accesed: September 16, 2017)
8 http://www.dei.gov.ba/dei/direction (September 16, 2017)

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INTELLECTUAL CAPITAL AS A DRIVER OF ECONOMIC DEVELOPMENT[1]

INTELEKTUALNI KAPITAL KAO POKRETAČ EKONOMSKOG RAZVOJA

Abstract

There are different factors for obtaining economic development. In contemporary economics knowledge and intellectual capital have become necessary for achieving economic development. Managing and development of intellectual capital bring benefits and advance the economy. The main aim of the paper is to present the concept of intellectual capital as a driver for economic development. Selected indicators for measuring intellectual capital and knowledge and their influence on the economic development have been presented. The impact of intellectual capital on economic development is different based on the level of development national economy. Intellectual capital is a driver for economic development in advanced economies, while in developing countries is not so dominant.

Keywords: intellectual capital, knowledge, economic development, knowledge based economy

JEL: O10, 030, J24

Sažetak

Postoje različiti faktori za ostvarivanje ekonomskog razvoja. U savremenoj ekonomiji znanje i intelektualni kapital postali su neophodni za postizanje ekonomskog razvoja. Upravljanje i razvoj intelektualnog kapitala donose koristi i unapređuju ekonomiju. Glavni cilj rada je predstaviti koncept intelektualnog kapitala kao pokretača ekonomskog razvoja. Prikazani su odabrani indikatori za mjerenje intelektualnog kapitala i znanja i njihov uticaj na ekonomski razvoj. Uticaj intelektualnog kapitala na ekonomski razvoj je različit u odnosu na nivou razvoja nacionalne ekonomije. Intelektualni kapital je pokretač ekonomskog razvoja u razvijenim ekonomijama, dok u zemljama u razvoju nije toliko dominantan.

Ključne riječi: intelektualni kapital, znanje, ekonomski razvoj, ekonomija zasnovana na znanju

1. Introduction

According to Lisbon strategy (2000) that the European Union becomes "the most competitive knowledge based economy in the world", followed by Europe 2020 strategy (2010) that aims to obtain smart, sustainable and inclusive growth, factors that lead to economic development are directed to knowledge and intellectual capital. Knowledge and intellectual capital become resources for obtaining economic development and competitiveness in developed countries (Ilic, Bernjak & Rus, 2016; Herciu & Ogrean, 2015) and less developed countries (Seleim & Bontis, 2013). Investments in education, research and development, new technology and innovation bring positive economic performances like higher productivity, economic growth, prosperity, job creation and competitive advantages.

The aim of the paper is to present intellectual capital as a driver of economic development. It is based on intellectual capital of nation as a resource of the economic development in different countries. Observed countries are selected developed and developing countries. Even the main limitation is a lack of the many studies of intellectual capital of the nation in these countries as well as measurement of intellectual capital, the correlation is performed between intellectual capital and indicators of economic development (GDP per capita, inflation, unemployment, HDI, and WEF Global competitiveness index) in observed countries. The analysis shows that intellectual capital is a driver for

economic development and there is a correlation between national intellectual capital and indicators of economic development. Furthermore, intellectual capital is a driver in advanced economies, while in developing countries it is but not so dominant because it is not statistical significance to confirm it.

After Introduction, Section 2 gives an overview of the concept of knowledge and intellectual capital. Section 3 has focused on economic development of observed countries. Section 4 provides correlation analysis between intellectual capital and indicators of economic development in selected countries. Summary and final marks of the analysis are given in Conclusion.

2. The concept of knowledge and intellectual capital

Developed countries are directed and depended on information, knowledge and skills at a higher level. Their aim is establishing knowledge (based) economy. They run the continuous process of transforming their economy towards activities and knowledge-based sectors. Economic activities in knowledge (based) economy are primarily focused on manufacturing and services, especially in knowledge based industries. These activities are based on intangible assets, *i.e.* knowledge and intellectual capital. According to endogenous growth theory, economic growth and development are obtained thought the rise of the knowledge and innovation. Creation, movement and application of knowledge bring innovation, growth and development (Macrin, 2013). Moreover, investments in knowledge create new knowledge and ideas that improve the other production factors, productivity and income rise. In this way, there is an opportunity for using the knowledge as a factor of economic growth and development. To this knowledge can be analysis as: production (R&D), transmission (education and training) and transfer/ application (disseminating of knowledge, providing inputs for problem-solving, and innovation) (OECD, 1996, p. 21), and be resource, product or system. Concluding, knowledge has direct or indirect effects on the economic growth and development.

Besides, knowledge can be explicit and tactic (Nonaka & Takeuchi, 1995). Explicit knowledge rests on the tactic knowledge (Collins, 2010, p. 5). Explicit knowledge is a codified knowledge embodied in documents, books, journals, system, process, *etc*. It is obtained by education, so it is available to anybody and can be transferred to others (Nonaka & Takeuchi, 1995). Tactic (implicit) knowledge is based on the experience and intuition. It is personal

nature based on person's experiences and hard to get it (Jednak & Kragulj, 2015). According to Dhanaraj *et al.* (2004) Tactic knowledge is accumulative and helps to explain explicit knowledge. Knowledge management creates, transfers, uses and accumulates knowledge in order to improve companies' performances (Tilchin & Essawi, 2013). Generally, knowledge management creates and maximizes intellectual capital. Intellectual capital covers both explicit and tactic knowledge (Akpinar & Akdmeir, 2000, p. 338). Knowledge, intellectual capital and knowledge management are related. Knowledge is source of the intellectual capital therefore intellectual capital is source of innovation. Innovation increase productivity, income, living standard and prosperity of nation.

Intellectual capital is "the value of company`s employer knowledge, business training and any proprietary information that may provide the company with a competitive advantage" (Investopedia, 2017). There are different structure and sub categories of intellectual capital. According to Edvisson and Malone model (Bontis, 2001) intellectual capital has two key sub categories − Human capital and Structural capital. Structural capital comprises Market (also denoted as Consumer or Relation) capital and Organizational capital, while Organizational capital has two sub components: Process capital and Renewal (Innovation) capital. Human capital is the stock of knowledge, habits, skills and personal attributes and competencies in performing labour activities. Structural capital is non-human storehouses as infrastructure, hardware, software, process and databases that provide work of human capital. Organizational capital is organisational philosophy and capability; it is organisational structure, patents, trademarks. Market (Consumer or Relation) capital is relationships with customers, vendors and others. Process capital presents procedures, programs and techniques, while innovation capital is intellectual property, patents, copyrights (Marcin, 2013, p. 290). Human, relation, process and innovation capitals usually act together on economic performances and have multiple effects.

Intellectual capital (IC) is mostly analysed at the business level, and their role in enhance financial capital and other business outcomes. However, some studies cover research of intellectual capital at the national level. National intellectual capital is "knowledge based capital which influences on the economic growth and development" (Bontis, 2001). Value and ranking national intellectual capital provide a direction for economies to benchmark and invest in appropriate intangible assets and influence further economic

development (Lin & Edvinsson, 2010, p. 8; Wisniewski & Wildowicz-Giegiel, 2014). Marcin (2013) and Rusu-Tanasă (2015) present IC concept from a regional perspective. Ståhle (2008) describes tools and methods of identified and measure of IC and its economic impact. Seleim and Bontis (2013) show relationship between national intellectual capital and economic performances in less developed countries. They claim that relational capital is a critical component in obtaining economic performance. In studies Stam and Andriessen (2009), and Andriessen and Stam (2005) compose IC index and find that investment in intellectual capital pays off, human and structural capital go together, the high value of intellectual capital does not guarantee increased productivity, there is the growth of value of intellectual capital in all EU (EU-15 and EU-19) countries. Furthermore, the EU observed countries are behind the Japan and USA. Nordic EU countries have the best performing of the value of IC. Lin and Edvinsson (2008) got similar results about Nordic countries.

However, there are some limitations in research of relation between intellectual capital and economic performance. The first limitation is a lack of the study of impact national intellectual capital on economic development. The second limitation is a measurement of national intellectual capital as well as the lack of the data for many countries. Intellectual capital can not be measured directly, but the set of indicators that present sub components - human, relation, process and innovation capital. Several measurement and assessment of intellectual capital are developed by UN, the World Bank, EU, OECD, WEF and personal composite index because there is no single and unique index. Some countries are provided with their own measurement.

3. Economic development

The level of economic development is different in various countries. The goal of economic development is the availability of goods and services, increasing the standard of living and rise of social and economic choices for individuals. There are economic (land, labour, capital, technology) and non-economic factors (institutional, social and value) that influence the achievement of economic progress. Based on factor there are strategies based on natural resources, capital or labour. Also, each economy starts its development from traditional society (low productivity and agriculture sector) across the industry to service sector that enhances productivity and income.

Developed countries their economic development is dominate based on the knowledge. Traditional factors as land, labour and capital are not the primary source of the economic growth and development. However, these factors are still dominated in developing countries. Developed countries according to rapid changes and new technologies have focused on the service sector, while developing countries focus on agriculture and manufacturing sector. Agriculture and manufacturing do not enable high value added, higher employment, productivity, income and living standard. To obtain a higher level of development developing countries should utilise the practice, capital and technologies from developed countries as well as to establish institutions. Due to lack of domestic capital, foreign capital is seen as the main force for economic development. Furthermore, developing countries should be coherent with EU and the world. To this aim developing countries or in transition should provide knowledge based economy. They should invest in knowledge, education, research and development and new advanced technologies. In this way, innovation could be obtained and rise productivity, income and living standard. However, this path is not possible for all developing countries because of the lack of capital, saving and external sources for financing economic development. So, investments are mostly in traditional factors (land, labour, and capital) and sectors (agriculture and industry).

Economic development is a broader category than economic growth. Since the process of economic development is multidimensional, there are many indicators of economic development. No single indicator measures economic development. Gross domestic product (GDP) is still the primary indicator. However, there are others that are need to take consider in a way to show right level of economic development. Besides GDP, there are: GDP per capita, inflation, unemployment, Human development index (HDI), WEF Global competitiveness index, poverty, inequality, literacy, *etc*.

4. Intellectual capital and economic development

From late 1990s, intellectual capital starts to be explored as a factor for enhance economic performances and creation of wealth. Different models are applied at national level (Stam & Andriessen 2009, Pulic 2005, Lin & Edvinsson, 2010). Intellectual capital has advantage for country and it influence economic performances and creation of wealth especially in developed countries as are Nordic countries. Human capital is input of economic growth. It followed by structural capital that gives support human capital in infrastructure, databases,

processes, patents, structure and innovation in order to implement and obtain goals. Appropriate measurement of each capital and use of its can enable better guidelines and directed investments and so performance of company or nation.

However, as it is noticed neither intellectual capital nor economic development have a single indicator. For intellectual capital, the most used are composed indicators of IC sub categories. For each sub category, there are set of indicators. These are complicated and multidimensional approaches in finding appropriate and single indictors. Different composite index is created and used by Andriessen and Stam (2005), Ståhle (2008), Lin and Edvinsson (2010), Užienė (2014), and Edvinsson (2017). Edvinsson (2017) is created National intellectual capital (NIC) index and presented for selected countries at NIC as a driver of countries economic growth (http://bimac.fi/nic/). This approach and data are used in few studies.

The aim of this paper is a correlation between national intellectual capital and economic development. NIC is used from Edvinssons (2017) database and available data for 2011 for 47 countries (http://bimac.fi/nic/). For the same year, indicators for economic development are taken from the World Bank data. Indicators are: GDP per capita PPP, Inflation (annually %) and Unemployment (Total %). Human development index (HDI) is taken from UN and Global Competition index (GCI) from World Economic Forum Report 2011-2012. Table 1 provides a correlation between NIC and selected indicators of economic development, all countries.

Table 1. *Correlation between NIC and selected indicators of economic development, all countries*

		NIC	GPD_pc _PPP	Inflation	Unemploy-ment	HDI	GCI
NIC	Pearson Correlation	1	.010	-.484(**)	-.240	.806(**)	.905(**)
	Sig. (2-tailed)		.949	.001	.104	.000	.000
	N	47	47	47	47	47	47
GPD_pc_PPP	Pearson Correlation	.010	1	-.107	-.241	-.079	.066
	Sig. (2-tailed)	.949		.474	.103	.599	.657
	N	47	47	47	47	47	47

		Pearson Correlation	-.484(**)	-.107	1	.000	-.377(**)	-.543(**)
Inflation		Sig. (2-tailed)	.001	.474		.998	.009	.000
		N	47	47	47	47	47	47
Unemployment		Pearson Correlation	-.240	-.241	.000	1	-.123	-.387(**)
		Sig. (2-tailed)	.104	.103	.998		.409	.007
		N	47	47	47	47	47	47
HDI		Pearson Correlation	.806(**)	-.079	-.377(**)	-.123	1	.615(**)
		Sig. (2-tailed)	.000	.599	.009	.409		.000
		N	47	47	47	47	47	47
GCI		Pearson Correlation	.905(**)	.066	-.543(**)	-.387(**)	.615(**)	1
		Sig. (2-tailed)	.000	.657	.000	.007	.000	
		N	47	47	47	47	47	47

** Correlation is significant at the 0.01 level (2-tailed).

Source: Authors' research

There is a correlation between NIC and economic development. However, statistical strong positive correlation is between NIC and HDI (r=0.806) and GCI (r=0.905), p< 0.01. Also, there is a statistical negative correlation between NIC and Inflation (r=-0.240), p< 0.01. Furthermore, there is positive correlation between NIC and GDP per capita PPP (r=0.010), but not statistically significant. Correlation between NIC and Inflation is negative and not statistically significant due to p value (p=0.104).

When is analysed developed and less developed countries results are not statistically significant. It should be emphasised that in those observed countries most of the countries are developed or less developed. It is a small number of countries that are not developed (Tables 2 and 3). Due to this, the results could be unusual.

Table 2. *Correlation between NIC and selected indicators*
of economic development, developed countries

		NIC developed	GDPpcPPP developed	Inflation developed	Unemployment developed	HDI developed	GCI developed
NIC developed	Pearson Correlation	1	.066	-.250	-.267	.158	.637(**)
	Sig. (2-tailed)		.777	.274	.241	.495	.002
	N	21	21	21	21	21	21
GDPpcPPP developed	Pearson Correlation	.066	1	-.237	-.257	.244	-.144
	Sig. (2-tailed)	.777		.301	.260	.287	.533
	N	21	21	21	21	21	21
Inflation developed	Pearson Correlation	-.250	-.237	1	.028	-.451(*)	-.190
	Sig. (2-tailed)	.274	.301		.903	.040	.410
	N	21	21	21	21	21	21
Unemployment developed	Pearson Correlation	-.267	-.257	.028	1	-.107	-.407
	Sig. (2-tailed)	.241	.260	.903		.644	.067
	N	21	21	21	21	21	21
HDI developed	Pearson Correlation	.158	.244	-.451(*)	-.107	1	-.218
	Sig. (2-tailed)	.495	.287	.040	.644		.342
	N	21	21	21	21	21	21
GCI developed	Pearson Correlation	.637(**)	-.144	-.190	-.407	-.218	1
	Sig. (2-tailed)	.002	.533	.410	.067	.342	
	N	21	21	21	21	21	21

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Source: Authors' research

According to Bimac NIC (2014), NIC explains GPD formation and GDP growth. Results show that intangible capital accounts 45 % of world GDP. In the US it is about 70 %, while in EU 52%. Nordic countries have the highest parts of NIC in their GDP. According to all databases, Nordic countries (Denmark, Sweden, Finland, Norway, Netherlands) and Switzerland have the highest NIC, development, HDI and GCI. These countries have oriented their economies towards a knowledge economy. The service sector and knowledge based

industries are important for obtaining economic growth and development. Also, sub categories of intellectual capital take part in achieving GDP (Bilen-Katić & Radovanović, 2014). National intellectual capital contributes innovation and economic growth. According to Andriessen & Stam (2005), most developed countries improve the value of intellectual capital and have growth of investment in intellectual capital. Strategy for growth at national, regional and business level are necessary due to the direction of further activities and development. Concepts and strategy of innovation in SMEs have a role in enhancing performances (Milutinović *et al.*, 2015).

Table 3. *Correlation between NIC and selected indicators of economic development, developing countries*

		NIC developing	GDPpcPPP developing	Inflation developing	Unemploy- ment devel- oping	HDI developing	GCI developing
NIC developing	Pearson Correlation	1	.130	-.482	.111	.228	.725(**)
	Sig. (2-tailed)		.687	.113	.732	.477	.008
	N	12	12	12	12	12	12
GDPpcPPP developing	Pearson Correlation	.130	1	-.252	-.170	-.242	.422
	Sig. (2-tailed)	.687		.430	.597	.448	.172
	N	12	12	12	12	12	12
Infaltion developing	Pearson Correlation	-.482	-.252	1	-.067	.150	-.839(**)
	Sig. (2-tailed)	.113	.430		.837	.641	.001
	N	12	12	12	12	12	12
Unemplym- ent develop- ing	Pearson Correlation	.111	-.170	-.067	1	-.206	-.034
	Sig. (2-tailed)	.732	.597	.837		.520	.916
	N	12	12	12	12	12	12
HDI developing	Pearson Correlation	.228	-.242	.150	-.206	1	-.173
	Sig. (2-tailed)	.477	.448	.641	.520		.591
	N	12	12	12	12	12	12
GCI developing	Pearson Correlation	.725(**)	.422	-.839(**)	-.034	-.173	1
	Sig. (2-tailed)	.008	.172	.001	.916	.591	
	N	12	12	12	12	12	12

** Correlation is significant at the 0.01 level (2-tailed).

Source: Authors' research

Table 2 shows developed countries and that NIC is positive correlated with variables GDP per capita PPP (r = 0.066), Unemployment (r = -0.267), HDI (r = 0.158) and GCI (r=0.637), except with inflation (r = -0.260). There is no statistical significant expect to GCI (p< 0.01). These results are associated with research of Lin and Edvinsson (2010). Table 3 presents less developed countries and results that NIC is positive correlated with variables GDP per capita PPP (r = 0.130), Unemployment (r = 0.111), HDI (r = 0.228), GCI (r=0.725), except with inflation (r = -0.482). There is no statistical significant expect to GCI (p< 0.01). These results for developing countries are similar as it is in research of Seleim & Bontis (2013). Still, NIC and unemployment is positive correlate in developing countries even it is not the case in developed countries. The knowledge is used for creation innovation (new product, technology, process, *etc*.) should rise production so the unemployment should decrease, not increase. If the other traditional resources have taken in the analysis, probably the results will show that they have a dominant role in economic development. It could be concluded that intellectual capital is a driver for economic development in developing countries, but it is not such a dominant resource.

5. Conclusion

Rapid changes in technologies affect on the growing importance of information, knowledge and intellectual capital. Many countries transform their economies towards knowledge (based) economies. They invest in knowledge and intellectual capital to obtain a high value of the intangible asset that leads to economic prosperity and competitiveness. Intellectual capital firstly is analysed in the company and then on the regional and national level. Intellectual capital has sub categories – human, relation, process, and innovation capital. Each of the sub categories influences the business and economic performances. For company, value is people with their knowledge and skills, efficient processes and good reputation that will lead to innovation, productivity and prosperity. The same is effects are applied at national level. Due to this, there is interaction among sub categories of intellectual capital, they are mutual enhancing factors and have multiply effects and results (Andriessen & Stam, 2005).

Still, there is no single assessment and measurement of intellectual capital. Many authors developed their own assessment Andriessen and Stam (2005), Ståhle (2008), Lin and Edvinsson (2010), Seleim and Bontis (2013), Užienė

(2014) in order to see role intellectual capital and economic performances, growth and development. In this study, it is analysed intellectual capital as a driver of economic development. The correlation between national intellectual capital (NIC) and indicators of economic development is done. The results show a positive correlation between NIC and indicators of development. Based on the correlation, NIC could influence on GDP per capita, unemployment, inflation and competitiveness. The higher role NIC has in developed than in developing countries what indicate the rank of this countries in reports of development and competitiveness. Limitation of this study is lack and availability of the data for all countries and period. Further work will be directed towards making a composite index of NIC in the West Balkan countries and exam relationship between NIC and economic development.

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Endnote

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POLITICAL ECONOMY OF CORRUPTION AND ITS IMPLICATIONS ON FINANCIAL SYSTEM

POLITIČKA EKONOMIJA KORUPCIJE I NJENE IMPLIKACIJE NA FINANSIJSKI SISTEM

Abstract

The corruption in transitional societies has undisputed qualification of "systemic corruption". The result is the corruption money from corrupt activities, which enters financial systems and destroys the basic postulates of the financial profession, and at the macroeconomic level weakens national and regional financial systems. The authors focused their research in two directions. On the one hand, the authors point out the open theoretical and ideological dilemmas on the nature of the occurrence of corruption: (1) Whether the corruption is linked to the inability of the government to establish effective control of public flows through the legal system and to prevent the use of public service for private ends, or (2) The corruption is linked to the lack of markets and creation of an opportunity for the establishment of a monopoly in decision making. The answer to this dilemma determines the strategy and measures to prevent corruption. On the other hand, the authors explore the international standards and anti-corruption policies and they analyse trends of regulation and supervision of financial markets, which would constitute a barrier to the use of the financial systems for the legalization of corruption.

Keywords: corruption, transition, financial system, money laundering, regulation of financial markets

JEL: E26, G18, K420

Sažetak

Korupcija u tranzicijskim društvima ima nespornu kvalifikaciju "sistemske korupcije". Uzroci ovog tipa korupcije inicirani su: institucionalnom neizgrađenošću društva, visokim nivoom siromaštva i nepripremljeno sprovedenom privatizacijom. Na ovaj način u već urušenim tranzicijskim društvima, korupcija je postala uobičajeni način života. Pitanje korupcije u sprezi je i sa organiziranim kriminalom (uvezanog ili iniciranog sa nivoa političke i ekonomske moći) što problemu korupcije, po pravilu, daje regionalnu dimenziju. Autori usmjeravaju pažnju na otvorene teorijsko-ideološke dileme o prirodi nastanka korupcije, što je osnovni cilj rada: (1) da li se korupcija veže za nesposobnost vlada da kroz pravni sistem uspostave efikasne kontrole javnih tokova i onemogućavanja korišćenja javne službe za privatne ciljeve, ili se (2) korupcija veže za nepostojanje tržišta i otvaranje prostora za uspostavljanje monopola u odlučivanju. Odgovor na ovu dilemu opredjeljuje strategije i mjere sprječavanja korupcije. Imajući u vidu da korupcija, u konačnici, razultate korupcije pretvara u novac, novčane surogate materijalne vrijednosti, koji se uvlaće u regularne finansijske tokove, autori istražuju međunarodne standarde i politike borbe protiv korupcije i analiziraju pravce regulacije i nadzora finansijskih tržišta koji bi predstavljali barijeru u korištenju finansijskih sistema u funkciji legalizacije korupcije.

Ključne riječi: korupcija, tranzicija, finansijski sistem, pranje novca, regulacija finansijskih tržišta

JEL: E26, G18, K420

1. Instead of introduction: Where does corruption come from and where is it going?

What remains open as a theoretical issue that falls into ideological value systems, and which opens a dilemma of whether corruption can be tied to the (in)ability of governments to establish, through the legal system, effective control of public flows and disabling the use of public services for private purposes, or whether corruption ties in with the lack of markets and the opening up of space for the establishment of a monopoly in decision-making. The conceptualization of strategies and measures to prevent corruption is largely dependent on the answers to this dilemma. In the first case, the answer in simplified terms implies the establishment of a strong state and a government ready to tackle corruption (hence, increased public control and regulatory networks), and in the second, the absence of a monopoly, therefore, the expansion of market freedoms. However, this dilemma can be overcome if we find that a "strong state" is actually necessary for the smooth

functioning of the market mechanism and its basic institutions, above all the protection of property and contracts, rather than the establishment of a Leviathan bureaucracy.

In Western democratic countries, especially in the countries of northern Europe, corruption is only a curiosity, although here it is not uncommon for "public" officials to be involved in corruption affairs. The most common reason for lower exposure to corruption in these societies lies in the so-called "Scandinavian honesty", "Protestant ethics", or trust in state institutions for which citizens of these societies, for example, are always willing to pay taxes, even if they are opposed to their increases. At the same time, in developing countries (where corruption per year takes between 1-1.5% of national income) and transitional crumbling societies, corruption has become an integral part of the general social condition, a regular "systemic illness" deriving from the lack of institutional arrangements. There is no need to disregard the cultural and historical context of society where this "system error" is possible.

At the general appearance level, however, corruption is most commonly referred to as an expression of the rule of corrupt politics. Countries in transition are particularly vulnerable to corruption because they go through the phase of institutional restructuring. It is an inevitable "initial transformational shock" that, as a rule, arises in the conditions of sudden abandonment of the previous social system before the institutions (socio-legal, economic) of the new social system has been built and accepted.

A special subset in this group of countries is composed of the countries of the Western Balkans, which, in the context of the consideration of corruption, are classified into collapsed transitional societies. In the case of these countries, we point out the "susceptibility to the phenomenon of corruption", which is manifested through underdeveloped institutional capacity for law enforcement and the unfulfilled democratic culture in society - that is, the present proto-democracy (Hodžić & Vukadinović, 2004). Along with the transitional systemic immanence of corruption, these societies also have a socially and historically "built-in" tendency towards predatory mentality, which is designated as "Prince Marko's syndrome" (Rendić-Miočević, 1996). In the Balkans, the collapsed transition societies, such as the Bosnian-Herzegovinian, Serbian and Montenegrin society, the issue of corruption is connected and in conjunction with organized crime, which crosses the borders of states, so the problem has a regional dimension. Norbert Mappes-Niedik,

e.g. speaks of the "Balkan Mafia" (2004). None of the three aforementioned societies, like most of the others in the Western European environment (Croatian, Macedonian, and Albanian) can not solve this problem alone. It is necessary to get the help of international institutions, above all the Council of Europe, to build a normative infrastructure in order to combat corruption, and, after that, something that is much more important to monitor, namely the implementation of laws by providing support in strengthening the capacities of police and judiciary bodies, as well as local authorities and institutions in the fight against corruption and organized crime.

2. Economic transition processes and corruption

The establishment of democratic society, the rule of law and market economy in transition countries make it difficult and complex to tackle phenomena related to crime and which are contrary to fundamental social and civilization principles. The corruption virus in the collapsed transition societies has largely affected the public sector, so this phenomenon has a systemic character.

In the conditions of sudden abandonment of the previous social system, before the new social system is built and accepted, a vacuum arises in which, on the one hand, there is a confusion of moral values, and, on the other hand, a "mixture of politics and crime" is established, in which corruption becomes "peace-time crime" (Mappes-Niediek, 2003), and politicians are a new class of financial accumulators. Morality and politics are in the ultimate dichotomy, and the tissue of the state and social institutions is significantly reduced, on which we base the thesis of *collapsed societies*. A number of post-communist countries have experience a failure to implement this transition. In those countries, with the foundation for transition still lacking, the prospect for systemic corruption is present, which is attributed to the "imposed" and "one-sided and swift application of economic liberalism". By forcing stabilization and short-term development effects, and almost exclusively the forced quantitative side of the rapid ownership transformation, the emergence and development of capitalism in these countries could not be anything but "fast, immature... and problematic" (UN Economic Commission for Europe, 1998). It is the result of the application of the neo-liberal model of economic growth, such as the *Washington Consensus*, installed in the economic policies of post-communist countries (Hodžić, 2004).

The market economy, however, requires adequate institutional structures, the "adaptive efficiency" of economic entities and private property in a competitive milieu, and thus transition can only be carried out gradually, since these are complex and long processes based on a completely new organization, new laws, changing the behavior of various economic entities. This is in line with Stiglitz analyses, according to which the neoliberal model neglects the instructions of neoclassical theories according to which competition and private property are equally necessary for the functioning of the market economy (in terms of *Pareto efficiency*). Shock-therapeutic model of privatization is easy to implement, but such privatization does not contribute to the creation of a market economy. "It is true that, if privatization is carried out in more or less non-genuine ways and in an environment that does not have the necessary institutional infrastructure, this can jeopardize the long-term prospects for building a market economy. Worse yet, thus created interests of private property contribute to the weakening of the state and undermining of the social order through corruption meddling with legislation" (Stiglitz, 1999).

The disintegration of the post-socialist state is based on the assumptions about the communist institutions as "criminal" and "unjustly corrupt" in the process of transition, which is why they need to be quickly replaced with market institutions that will themselves come with privatized property. Namely, the experience of other post-communist countries shows that the initial role of the state in the process of transition to the market economy must be emphasized. This is a confirmed rule regardless of the concept of the country's economic role. In the conditions of a weak or dysfunctional rule of law, "corruption becomes – which is a paradox - one of the regulators of the social and economic system" (Vuković, 2003). Neoliberal and activist (state-interventionist) concept of transition strategy requires a "strong (democratic) state". A "strong state" is, firstly, necessary for the smooth functioning of the market mechanism and its basic institutions, primarily the protection of property and contracts.

It has been shown that the expectation that market institutions will arise from themselves with defined proprietary rights was a big illusion. Liberal reformers were convinced that institutions would pursue private ownership, and that in accordance with *Coase's theory* (1937) property would be quickly redistributed to efficient entrepreneurs. For the critics of neoclassical recipes (Stiglitz, 1999; Kolodko, 2000a, 2000b), it is a reverse

process: private property is followed by institutions, i.e. for the creation of markets in transition countries institutional setting is the most important factor for the constant economic growth. Neoclassical economists, these critics interpret, simply do not understand the institutional requirements that are valid for creating a market, as they "simply take it as a given".

Already after ten years of transition, it turned out that critics are right: Coase's arguments are not valid because, on the one hand, the primary and secondary market did not become a reality − "so that the property was plundered more than it was re-sold", and, on the other, for sustainability to be viable, it is not only important for property rights to be clearly defined, what also matters is how they are defined.

The beginning and implementation of the transition process in BiH is characterized by the deepest transition crisis in South East Europe. These processes are accompanied by a strong social differentiation and rapidly occuring poverty of most of the population. In addition, BiH, on the one hand, also experienced the physical, biological and substantial deconstruction of society caused by terrible war destruction. The enormous enrichment of a small number of individuals accompanies social movements, social differentiation, pauperization and destruction. Acquisition of "overnight" wealth is most often associated with corruption as a perceived negative phenomenon of transition. But, as is pointed out, no society is immune to corruption, even those that have successfully completed the transition. The difference is that in ruined transition societies corruption develops at such a rate and intensity to seriously exacerbate and attack social tissue as a carcinogenic substrate; meanwhile, this phenomenon in developed societies is placed under the control of institutions.

The transition process, therefore, makes the locus of corruption standpoints, whose sources are structured according to a systematized approach to: (1) *institutional non-construction*, a vacuum in which the ruling parties "capture the state", which encourages and develops a confusion about moral values and behaviors, in which corruption becomes the usual "way of life"; (2) *state control of economic flows*; (3) *poverty* society, that "favors the discrediting of professional ethics and encourages the illegal acquisition of material benefits"; (4) *unprepared privatization* (through money laundering, violations of legal procedures in the process of privatization, corruption of public officials involved in the very act of privatization); (5) widespread *tolerance*

for corruption among citizens in the sense of the slogan "every government is corrupt" and the usual "gratitude" to individuals in specific activities (*e.g.* doctors, teachers, attendants, *etc.*); (6) the appearance of a *new class of tycoons* recruited from the ranks of the former regime and war profiteers; (7) *the war destruction of the society*, which allows for the looting and war profiteering, and the consolidation of organized crime (the regular appearance of bringing criminals to the civil service).

Thus, the rapid disintegration of totalitarian regimes according to state participation in the economy created a legal and institutional vacuum, longer than expected, and corruption is a natural consequence of a combination of the way in which transition itself is taking place (Stiglitz, 1999, 2004). In societies with unorganized institutions, corruption is mostly associated with the so-called *political corruption*, and related malversations and omissions in the privatization process. Abuses during privatization (designated in literature as *privatization of nomenclature* or *tunneling*) are reminiscent of the worst forms of initial accumulation of capital. Moreover, the interwovenness of the new political elites and the newly-formed financial mafia is more than visible. There is almost no transition country in the privatization of which there was no occurrence of corruption and various forms of malversations in general.

3. Economic sources of systemic corruption in Bosnia and Herzegovina

Focusing on the situation in BiH shows that corruption is not an uncommon condition, but rather a rule with the qualifications of "systemic disease", whose causes can be sought in institutional and civil-cultural facts. Post-war economy of BiH was formed two-dimensionally: on the one hand, based on neoliberal ideology, and on the other, provisions of the Dayton Agreement (1995). For BiH, the country of "specific specificities", however, such a package combined with general macroeconomic and political instability can not only make it difficult to achieve an environment for economic development, but just its maintenance seems a delicate and almost unsolvable problem; of course, if it is left to "its own" ethnonational strategies (Stojanov, 1999). The transfer of fiscal sovereignty to the two entities and Brčko District favors the untouchability of the actors of corruption, since the corruption of some high-ranking officials and politicians is still largely interpreted as "an attack on national integrity and identity of the entire ethnic group". Under such conditions, BiH is incarnated in a very ambivalent situation, in which Bosnian-Herzegovinian society lost its internal capacity for self-sustainability,

and whose future is tied exclusively to "external incentives". This created a weak state. With a non-constructed political culture for a transparent service of citizens and entrepreneurial society, this weak state simply encourages the formation and maintenance of paralel structures that have real power, and that carry out organized crime and corruption. The Dayton Agreement made BiH a loose union, which has no possibility of macroeconomic management of its economy and realizes *ethnic privatizations*. As *quasi*-state institutions, the entities are strong enough to jeopardize the functioning of BiH as a whole, but are also so weak that they can neither secure the functioning of the market mechanism nor prevent the corruption of their *quasi*-state apparatus. All this, in fact, says that a real vacuum has emerged in terms of the political and economic functions of the state, and that, at the same time, democratic institutions and mechanisms of the market system have not been created. For example. the new Criminal Code of BiH envisages the possibility of confiscating illegally acquired property, and the recently adopted criminal procedure law gives more powers to public prosecutors and the possibility for investigative bodies to record and search. However, the issue is not the laws, but rather the fact that they are not applied, because there is no political will.

In the following text we present the assessment of corruption provided by Transparency International (Corruption Perception Index - CPI) in the countries of Western Balkans, adding Slovenia. The period from 2007 to 2016 has been adopted, while the 2012 estimation, given the new methodology of CPI calculation and the inevitability of the new indicator with previous years' ratings, is presented separately.

Table 1. *CPI in Region Countries (2007-2016)*

Country	2007	2008	2009	2010	2011	2016	Rank in 2016 (among 176 countries)
Slovenia	6.6	6.7	6.6	6.4	5.9	61	32
Croatia	4.1	4.4	4.1	4.1	4.0	49	55
FYR Macedonia	3.3	3.6	3.8	4.1	3.9	37	90
Montenegro	3.3	3.4	3.9	3.7	4.0	45	64
Serbia	3.4	3.4	3.5	3.5	3.3	42	72
BiH	2.9	3.3	3.0	3.2	3.2	39	83
Kosovo	-	-	-	2.8	2.9	36	95

Note: Corruption perception scale *0 to 10* (0 = absolute corruption, 10 = no corruption). New perception 2012-2016 *0 to 100* (0 = absolute corruption, 100 = no corruption).

Source: Transparency International (2000-2011 & 2016)

According to the Global CPI report for 2016, the highest places among the countries of the Western Balkans were: Slovenia (31st place among 176 countries), Croatia (55), Montenegro (64), Serbia (72), BiH (83), Macedonia (90), and Kosovo (95). In interpreting the CPI, however, a certain reservation should be given since this is a subjective perception of citizens (which in some situations is critically aggravated, such as those at the time of more intense privatizations or sudden discovery of corruption affairs among politicians) and different (from 2012) methodologies. In any case, wide prevalence of corruption in all countries of Western Balkans is uncertain. This is confirmed by other sources of research (Podumljak, 2010), focused on the perception of managers on corruption. At the regional average level, the survey shows that 42.2% of managers believe that corruption is "a huge or important obstacle to business in the region" (within this average, managers' opinions across countries vary considerably, ranging from 86.8% in Kosovo to 23.6% in BiH and 24% in Montenegro).

Viewed through the regional average in the last decade, the common feature of the countries of the Western Balkans is a certain stagnation in the fight against corruption, which on the one hand points to a lagging behind in development (corruption is in a negative correlation with economic growth), threatening macroeconomic, political and social stability, and destimulation of investments coming in, and, secondly, failure to implement anti-corruption programs in these countries.

4. Parameters of battle against corruption

In stereotypical approaches, the success of the battle against corruption and the future of corruption itself, to a great extent, as seen from the attitudes of respondents in previous research, depends on the establishment of valid legislation, then the development of institutions of the system, civil society and education. In the case of BiH, it is usually referred to the necessary changes to the Election Law and the Law on Financing of Political Parties, and to improving the Law on Public Procurement. Normally, this set of measures is added to the role of the media as the media can play a powerful role in putting corruptive actions in the limelight, so it is necessary to harmonize the entity's laws on freedom of access to information with the state law, with the introduction of penalties for non-compliance. In a situation where it is difficult to prove the existence of corruption in fact and on the part of the judiciary authorities, a media campaign to expose and appoint corruptors

can yield significant results. Free media have a stimulating role in economic development, especially in the fight against poverty. In itself, such activity means less corruption, since, sometimes, the media rating has a higher weight than some conviction coming from a political, state or judicial authority.

Of course, the explanation that corruption can be suppressed by the appropriate institutional structure and laws, the development of civil society, the advancement of education and the greater focus of the media on the public stamping of phenomena and actors of corruption is indeed a global theoretical focus on curbing corruption, but not a complete framework for eradicating both the normative public space and the corruption mentality in which corruption phenomena are emerging and expanding. Especially since corruption in some situations does not always produce negative effects, which is the case when a bad or kleptocratic state administration imposes harmful regulation and thus impedes normal business transactions, so the best way to eliminate not only corruption but also its harmful effects is to eliminate bad and harmful regulation (Mijatović, 2007).

The elaboration of parameters for the fight against corruption is placed in two opposing theoretical-ideological frameworks: The first is interventionist; it refers to the marked political will of political and legislative power and the determination of the authorities to systematically tackle the challenges of corruption, which in principle assumes a "strong state". The absence of a "strong state" in this approach, which is widespread among analysts in corruption in the Western Balkans, always implies a violation of the law and the absence of procedures, and ultimately results in corrupt behavior of civil servants. The other is libertarian; this approach is present in the Western Balkans only through the opus of rare individuals. In all likelihood, the leading libertarianist economist in this area is Boris Begović (2007), according to whom corruption is analytically positioned to reduce the benefits of corruption and increase costs for participants in corruption work. The benefit of corruption exists in conditions of counterproductive state intervention, i.e. lack of competition, in conditions where a large rent is created. In this approach, through deregulation and liberalization, the benefits of corruption for corruptors are removed. Increasing costs for participants in corruption involves increasing the transaction costs of such businesses, as well as the expected penalties for the crime of corruption. The resolve, that is, the political will and good elements of a strategy embedded in sound, liberal economic policies, are the preconditions for effective fighting against corruption. If this is achieved,

concrete institutional or organizational solutions are not of crucial interest - different solutions can work well if the above preconditions are met.

5. Corruption repercussions on the financial system

The most dramatic consequences of corruption are: a decline in employment, a slowdown in economic activity, rising prices, losing confidence of foreign investors and, consequently, the growth of public debt. In various parts of the market, corruption leads to an unequal position those entities that act in accordance with existing market conditions and rules, when compared to entities that, using corruptive mechanisms, achieve an apparent competitive advantage. At the same time, there is a false picture of the cost effectiveness of those who base their competitive advantage on corruptive behavior. The inadequate market conditions further reduce investments in technical progress and innovations whose return and verification period is incomparably slower than "verifying" the effects of corruption. As a result, healthy entrepreneurship and competition (on which the comparative advantage and efficiency of the market economy system rests) are declining, and at the same time, the entrepreneurial power within the country is being destroyed.

Distrust in the functioning of state institutions and the state's legislation is rejected by foreign investors, those who are inclined to comply with national legislation and attract investors who themselves show high preference for corruption and who base their competitive advantage precisely on corruption. That is why many investment projects hardly prove their economic viability, which reduces investment in the country. Consequently, the overall economic activity and employment in the country are reduced. The result of corruption is the creation of a special type of "businessmen", namely renters, in the transition countries called "tycoons", which increase their wealth by renting rather than investing.

By restricting the process of privatization mainly non-profit public enterprises remain on the market; they are not exposed to market verification by proving they are capable of making profits. At the same time, they their doors wide open for further strengthening of corruption by passing the burden of losses onto public revenues with unproductive employment contrary to real needs. Finally, the traditional manifestation of corruption is represented by various types of tax evasion, which, by limiting the state's potential to finance public needs, directly reduces employment and the possibility of capital investment.

Countries that, through their mechanisms, fail to contain corruption quickly get a bad reputation in terms of realiability of business dealings, and thus they only succeed in attracting businessmen who only deal in unregulated markets.

As stated in the preceding part of the text, there are no exact indicators of corruption that would allow a reliable measurement of the level of corruption in a country. Measurements used in scientific and professional circles are based on the determination of selected indicators according to which the method of comparison establishes trends of this phenomenon. In these comparisons, regional comparisons are of particular importance because they are about the approximate geographical, societal and political conditions in which economies are developing. For this analysis, we will use several economic indicators that indicate the trends in which it is possible to accept the conclusion that these developments are, in part, the consequences of corruption, among other factors.

In the analysis, we will use the following indicators (which do not end only with the list offered): GDP, movement of foreign direct investments, trends in the labor market and movement of the country's credit rating. Comparison is done between Slovenia, Croatia, BiH, Serbia, Montenegro, Kosovo, and Macedonia.

Table 2. *Certain macroeconomic indicators in the countries of the Region (2010-2015)*

Country	GDP growth rate		DSI (mil. USD)		Labor market / employment rate		Credit Rating (S&P)	
	2010	2015	2010	2015	2010	2015	2010	2015
Slovenia	1.2	2.3	-119	-1,370	73.0	69.1	A-	
Croatia	-1.7	1.6	-1,272	-176	64.9	60.5	BB-	
BiH	0.8	3.0	-363	-246	39.0	39.2	B	
Serbia	0.6	0.8	-1,501	-2,001	47.3	52.1	BB-	
Montenegro	2.5	3.4	-731	-687	47.6	51.4	B+	
Macedonia	3.4	3.8	-207	-230	43.5	47.8	BB-	
Kosovo	3.3	4.1	-440	-302	26.1	25.2	-	

Sources: Authors' research based on the World Bank data and Eurostat

The greatest dynamics of the GDP growth rate is expressed by Kosovo as well as Macedonia, which is not only an economic result, but also the result

of the engagement of international forces and institutions that support the stabilization of their political circumstances. Montenegro is ranked third in the circle of selected countries and its growth is based on joining the NATO pact and investments in its infrastructure, while Slovenia and Croatia are showing growth in line with the commitment to European funds. BiH and Serbia are showing all the characteristics of countries that are still not supported by the international community to the extent expected, and they show slow growth in which it is realistic to believe in the consequences of various forms of corruption.

In the FDI area, all the countries of the region show a decline in foreign investments, which is an indicator of the continued presence of insufficient investor confidence, in part due to the current corruption ratings. The volume of investments is modest, especially considering the fact that most foreign investment are composed of mutual investments of countries in the region, and that "real" foreign investments from developed countries are still modest.

The consequences of the GDP and FDI trends have also resulted in a drop in employment, which is particularly pronounced in the case of BiH and Kosovo. Institutional trust and investor safety, in addition to the geographic benefits of the region and many of the benefits of available labor capacities, are still apparently unsuccessful gaining market verification. In support of these conclusions, all the countries of the region have mostly the same ratings.

Corruption results in material and non-material benefits. There is no objective data on the extent of corruption expressed in monetary value, but when it comes to the form analyzing the form that corruption activities ultimately take, it is undoubtedly money. Money enables the actors of corruption with increased mobility in the further use of corruption results, and the primary focus of countries and the international community is aimed at preventing money laundering. Monitoring the trace of money is amongst the most effective methods to reveal corruption activities. Money laundering is the legalization of financial assets acquired through criminal activities, or financial transactions to hide the true origin of money and other forms of capital.

Through the monitoring and assessing of the scale of money laundering activities, it is possible to arrive to relevant estimates of the extent of corruption and other forms of organized crime. The basic procedures for money laundering are the following: (a) replacement or transfer of property

arising from the performance of the prohibited activity; (b) concealment or evasion of the origin of money or concealment of the place where the money is invested, concealment of the purpose of using the property and the rights arising from the performance of an illegal activity; (c) concealment, privatization of enterprises, unlawfully acquired assets, and social and state capital (Vuković, 2003).

However, in order for someone to use the funds thus obtained without hindrance, those funds must be legalized and thus included in legal financial flows. Participants in money laundering resort to various financial transactions to hide the true origin of money, to make it a legal means of exchange in the money markets, but in doing so, they directly threaten the financial system of the country. In these activities, there is a whole chain of participants who use the knowledge of financial experts to show the money thus acquired as legally acquired and place it in domestic or international business activities. For the purpose of money laundering, weaker regulated and supervised banking systems are most often used. In practice, the so-called underground banking system that is beyond the control of state authorities is being used for these purposes.

There are a number of different techniques of money laundering, and they are commonly referred to as money passing through three stages: investing, concealment and integration. There are numerous forms of money laundering, and the most important are: cash transactions, electronic transfers, offshore financial centers, non-corporate groups, professional financial advisers, online banking, gambling, terrorism and others, such as the role of lawyers, notaries, accountants, auditors and other professionals in the process of money laundering.

Corruption and money laundering are shifting from higher to lower levels of political decision-making, including entire social strata. There are many causes of corruption in the economy, but its manifestations can take various forms. Criminals spend and invest illegal money in different ways, and are usually grouped into the following, four basic forms: (a) Spending illegally acquired profits through the purchase of goods and investing in restaurants and hotels; (b) Investing "dirty" money into service activities (especially taxi services), and for such money transactions to be professionally executed criminals hire attorneys and other financial professionals; (c) Criminals provide themselves and their associates through investments, which they have illegally realized, a high social status, thereby gaining an opportunity to associate with politicians

and to influence the legislative activity that they adapt to their interests; (d) Criminals have "their" politicians who they pay and thus participate in the political life of the country by ensuring their interests in the highest social life (Vuković, 2003).

The economic and political component of corruption and money laundering are changing rapidly so as to be more difficult to detect, in order for the state authorities not to be able to prevent and suppress corruption. Therefore, knowledge of emerging forms of economic crime, in particular corruption and money laundering, is necessary in order to: examine the conditions, causes and other relevant circumstances favoring the creation of these acts in a given period and to take timely and/or effective measures by the state and other entities of the society with the aim of preventing and combating corruption.

Removing such circumstances, with the conscious and organized activity of state institutions and the whole society, is sure to reduce the risk of the devastating consequences of corruption. Control, as one of the powerful ways of prevention, should cover all areas of economic and non-business activities that are endangered by corruption and money laundering. Control enables timely recognition of new forms of economic crime and identifies criminal acts of corruption and money laundering. It should be kept in mind that with the development of international and other relations, corruption and money laundering get new forms, with continuous improvement and utilization of new and diverse methods and tools that are increasingly applied in practice. Some of the basic characteristics of money laundering resulting from corruption and other predicate offenses are as follow (Birks, 1995):

- First, the global nature of the phenomenon of money laundering makes geographical boundaries more and more irrelevant. Money launderers tend to shift their activities to jurisdictions where small or poorly established anti-money laundering measures are in place.
- Second, a large number of traditional money laundering techniques are revealed, such as structuring transactions to avoid reporting requirements, cash smuggling, currency conversion, and the use of offshore financial centers, which remain the most prominent methods for hiding profits obtained through criminal activities. Various forms of Internet usage, such as casino gambling and banking related activities, as well as electronic internet banking are increasingly providing mechanisms that could be used for fast money movements, which are increasingly deviating from the use of traditional paper currency in industrialized countries.

- Third, there is an upward trend among money makers to move away from the banking sector to the non-banking financial institutions.
- Fourth, there is a steady increase in the amount of criminal cash that is being smuggled out of countries for placement in financial systems abroad. In many jurisdictions, there are no border records that would follow the path of cash flows, and it is quite easy for money launderers to move large sums of cash over land borders to other countries.
- Fifth, the trend most frequently observed in money laundering is the increase in the use of non-financial businesses or professions that are not related to banking institutions. Money launderers are increasingly receiving help from professional helpers such as accountants, notaries, lawyers, real estate agents and brokers in the purchase and sale of luxury goods, precious metals, and even durable consumer goods, textiles and other products that are part of imports and exports. All of these benefits use a wide range of resources to obscure the origin and ownership of problematic assets. The use of outsourcing companies, usually established within the jurisdictions of offshore financial centers, is one of those common resources.

Money laundering needs to be treaded as an accompanying occurrence of organized crime because, according to the degree of social danger, it is one of the most dangerous aspects that affects the foundations of the national economy. Unlawful activity, based on these criminal offenses, gives the organizers enormous material gain, since after their "legalization", it is possible to use it in the process of all other legal activities. Money laundering is often performed as an important part of the activities of organized groups, and in many cases the very organizers are persons in important positions in the state administration or the private sector, *i.e.* persons with a high social status. Professional criminals often, in order to organize money laundering, are linked to creating powerful groups, gangs, which have a foothold in the police, the judiciary authorities and among politicians. The psychological component of money laundering indeed points to political aspects, because those who decide to get involved in such dealings are typical representatives of that part of the authorities who are skillfully involved in political activities.

The amount of money laundering can hardly be reliably estimated, although estimates are made using indirect indicators of payment transactions, the amount of money in circulation, and the like. The latest estimate was published by PWC (*Price Woterhouse Coopers*) according to which in the USA the

volume of money laundering reaches 2-5% of GDP or about 1 trillion USD per year.[1]

The problem of money laundering is directly reflected on BiHa, which, due to insufficiently harmonized legislation and insufficient commitment to this issue, suffers market consequences. Namely, despite establishing the basic legislative basis, there are strong risks of money laundering based on inefficiency in the fight against organized crime and corruption, as well as attempts to use the territory of BiH to finance terrorism. In the report on September 17, 2015, published by Moneyval Commity, BiH is classified as a group of countries with a very high risk of money laundering.

6. Conclusion

The corruption is the rule in the ruined transitional societies, with qualifications of "systematic disease", causes of which could be sought in institutional, historical and cultural facts. In BiH, these causes lie in divergent political visions resulting from the ethnically divided structure of the state union and in the imposed neo-liberal model of economic development. The current rating on the state of corruption in the Western Balkans says that there is a certain stagnation in the fight against corruption, which on the one hand, refers to growth retardation (corruption is negatively correlated with economic growth), endangering the macroeconomic, political and social stability, and discouraging the arrival of investment, and on the other hand, failure of the implementation of anti-corruption programs to a certain extent.

State institutions simulate efforts to combat corruption, but actually have no interest in the success of the project of fighting corruption and strengthening the capacity of the police and local authority. The main problem of implementation of anti-corruption programs is the lack of political will, regardless of the existence of laws in this area that are normatively very good, in most countries of the Western Balkans. Monitoring the process of fighting corruption requires, in addition to the participation of state bodies and the international community, the active participation of the media and the civil sector.

Because of the different corruption networks and their inter-relatedness, any isolated actions to curb it cannot provide results in the long run. Due to the fact that corruption is the sis-tem(at)ic authority project, temporary effects that

become more transparent at some point of the pressure from the international community, will not be healing for this "social disease". The measure, which would be enforceable and which would give results in the long run, refers to the establishment and development of the rule of law and raise of the living standards of citizens and economic levels of society in general. This would gradually lead to the exclusion of the sources of corruption.

The success of the struggle and the future of corruption depend on the establishment of valid legislation to a large extent, as evident from the attitudes of the respondents in the study, and on the development of state institutions, civil society and education. The amendments to the legal provisions, such as the Election Law and the Law on Financing Political Parties, and improvement of the Law on Public Procurement are necessary. We should not ignore the role the media can play in denouncing the corrupt acts. It is necessary to harmonize the entity laws on freedom of information with state laws, with the introduction of penalties for non-compliance with the law. In a situation where it is difficult for judicial authorities to prove the existence of corruption, one media campaign can bring significant results in exposing and naming the carriers of corruption. Unrestricted media have a stimulating role in economic development, especially in the fight against poverty. Therefore such activity means less corruption because, sometimes, the media rating carries more weight than the condemnation of any political, state or judicial body.

Corruption and organized crime as parts of the same problem, disturbing the established legislation in the country, are primarily attacking financial system of the country. The motive of corruption and crime is money. Money, or "dirty money", leads to damage to the reputation of the country and rejection of those who want to achieve comparative advantages at the market with their knowledge and attracts those who have the ability to "wash money" and through the legal institutions of the system to achieve their own goals only, neglecting social values. The extent of corruption and organized crime cannot be measured and it is difficult to assess it comprehensively. Despite the accepted perception of the extent of corruption, there remains a reserve in terms of its reliability and representativeness of the samples used and the adopted parameters. A perception based on exact indicators that indicate movement directions and trends of selected economic indicators of those economic activity through which, by experience, holders of corruption and organized crime legalize their "dirty money" in the easiest way, seem much more reliable. On the other hand, macroeconomic indicators arising from the

business relationship in the international communication of the country and investors whose primary motive for the competition is the profit attained, confirm this perception.

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Endnote

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ANALYSIS OF THE SIGNIFICANCE OF PROTECTED AREAS IN FINANCING LOCAL DEVELOPMENT IN CROATIA

ANALIZA ZNAČAJA ZAŠTIĆENIH PODRUČJA U FINANCIRANJU LOKALNOG RAZVOJA U HRVATSKOJ

Abstract

The aim of the research, whose results are presented in this paper, is to analyse the level and point out the possibilities of more active involvement of local communities in the management of protected areas. Involving local communities in the management of protected areas - national and nature parks - will allow local stakeholders to understand the possibilities, significance and role of protected natural areas and ecosystem services in enhancing their living standards and overall quality of life. The study was conducted by a method of semi-structured interviews combined with survey on a sample of 43 subjects. Multi-sectorial analysis included the sectors of nature protection, economy, agriculture, fisheries, tourism, forestry, health, education, employment, spatial planning and sports. The results of the study of attitudes of different stakeholders and their relationship to protected natural areas at national, regional and local level as well as international organizations in the Republic of Croatia show that the protected areas are an important resource of the Republic of Croatia and the potential to launch socio-economic development and sustainable development financing in local communities where they are established. However, there are few development ideas and business opportunities between various stakeholders from national and nature parks. The overall conclusion is that the protected natural areas are still largely viewed through the protection, control and conservation of nature, and therefore they are not open to potential investors and the business sector in general. Stronger integration of protected natural areas in the development of local communities is a long process that requires the implementation of a series of activities, and one of the key activities for the forthcoming period is to strengthen the knowledge and capacity of people about the value of ecosystem services and utilization of economic potential of protected natural areas in a sustainable manner.

Sažetak

Cilj istraživanja, čiji rezultati su prikazani u ovome radu, je analizirati razinu i ukazati na mogućnosti aktivnijeg uključenja lokalnih zajednica u upravljanje zaštićenim područjima. Uključivanje lokalne zajednice u upravljanje zaštićenim područjima – nacionalnim parkovima i parkovima prirode – omogućit će lokalnim dionicima razumijevanje mogućnosti, značaja i uloge zaštićenih prirodnih područja i usluga ekosustava u jačanju njihovog životnog standarda i ukupne kvalitete života. Istraživanje je provedeno metodom polustrukturiranih intervjua u kombinaciji sa anketom na uzorku od 43 ispitanika. Multisektorska analiza obuhvatila je sektore zaštite prirode, gospodarstva, poljoprivredu, ribarstvo, turizam, šumarstvo, zdravstvo, obrazovanje, zapošljavanje, prostorno planiranje i sport. Rezultati provedenog istraživanja stavova različitih dionika i njihova odnosa spram zaštićenih prirodnih područja i na nacionalnoj, regionalnoj i lokalnoj razini te međunarodnih organizacija u Republici Hrvatskoj pokazuju da su zaštićena područja važan resurs Republike Hrvatske i potencijal za pokretanje društveno ekonomskog razvoja i financiranje održivog razvoja u lokalnim zajednicama gdje su osnovana. Ipak, malo je ideja o razvojnim i poslovnim mogućnostima suradnje različitih dionika sa nacionalnim parkovima i parkovima prirode. Opći zaključak je da se zaštićena prirodna područja još uvijek uglavnom promatraju kroz zaštitu, nadzor i očuvanje prirode, te je stoga izražena zatvorenost prema potencijalnim ulagačima i poslovnom sektoru općenito. Snažnija integracija zaštićenih prirodnih područja u razvoj lokalne zajednice je dugotrajan proces koji zahtijeva provedbu niza aktivnosti, a jedna od ključnih aktivnosti za nerednom razdoblju je osnaživanje znanja i kapaciteta ljudi o vrijednostima usluga ekosustava i iskoristivosti gospodarskih potencijala zaštićenih prirodnih područja na održivi način.

Ključne riječi: lokalni razvoj, financiranje lokalnog razvoja, upravljanje zaštićenim područjima, usluge ekosustava

JEL: O2, Q57, R58

1. Introduction

Protected areas are created to protect nature and its values, but they also have significant importance and social and economic impact on local population. Also, protected areas have impact on economic development through strategic

and spatial planning on local and regional level. Protected areas improve biodiversity conservation, promotion of the regions where they are mainly through tourism and secure the local people income. Oppositely, protected areas can also have economic negative impact to local population, depends on the level of protection and protection measures. (Yakusheva, 2017, p. 266). Benefits and constrains of protected areas on local populations and assessment of their services where not analysed in Croatia so far.

The research on interaction of protected areas and local and national stakeholders was conducted during 2016 with the support of the International Organization World Wide Found (WWF). Results of the study show that the protected areas are an important resource of the Republic of Croatia and the potential to start socio-economic development in regions and local communities where they are established. However, still ideas regarding development and business opportunities for cooperation of various stakeholders with national parks and nature parks are lacking.

2. Previous research

According to the latest edition of the United Nations List of Protected Areas in the year 2014, 209,429 areas covering 32,868,673 km2 were protected in the world. In total 14% of land and 3.41% of sea is protected on Earth. In the Republic of Croatia, protected areas cover 8.56% of total area, *i.e.* 12.24% of land and 1.94% of territorial sea. Most of the protected areas are nature parks (4.56% of total state territory), while national parks cover 1.10% of Croatia.

Economic impacts of national parks on local, regional and national economies are mainly viewed from the perspective of economic effects of tourism. Positive aspects of park functioning are the increase of available jobs for local population, development of tourism and related industries, emergence of new investments, stimulation of local production, contribution to the preservation of natural and cultural heritage, development of good ecological habits and eco-education of visitors and population. Benefits and opportunities for areas within or near parks come from tourism, bio-agriculture and crafts (Zawilinska & Holuj, 2014, p. 149). Local authorities and residents usually consider that the key roles of parks are promotion, education, tourism development and nature protection. There is a clear line between direct and indirect function of parks (Zawilinska, Mika & Pawlusinski, 2016, p. 16). Direct function refers to jobs for the local population, the development of tourism, purchases of products

and services from local entrepreneurs, and the sale of materials (wood) which contributes to the development of other business sectors (manufacture of wood products and craft), while indirect refers to potential increasing of demand for real estate near the park or the development of ecological agriculture. In addition to the impact on tourism, national parks as employers are taxpayers, business partners and investors (Zawilinska & Mika, 2015, p. 425). Within its statutory activities, parks hire employees, pay taxes, buy goods and services and invest in infrastructure (including tourism infrastructure), so a large part of their budget goes to the local economy. Negative aspects of national parks and nature parks relate to the limitations on land development and business, as well as the negative effects of tourism such as pollution, degradation or the disturbance of peaceful living of the local population.

The economic success of national parks and nature parks depends on planning and decision making processes, the involvement of local and regional stakeholders, as well as cooperation between local authorities and the management of national parks (Getzner, 2003, p. 201). There is a great importance of participatory approach and involvement of local communities in decision-making processes related to the management of protected areas. The novel is the co-management model based on continuous cooperation between parks management and local and regional authorities, residents, businesses and nongovernmental organizations. Local communities should be involved in park management. Support for local social and economic development should be included in the overall objectives of the protected area, and park conservation plans should also include provisions for ensuring benefits for local communities arising from the establishment of a protected area (Đukić et al., 2014, p. 53). Also, the management of protected areas should play an active role in supporting local development (Zawilinska & Mika, 2013, p. 47). Protected areas management plans addressing not only protection, but also covering the sustainability and inclusion of local communities, are more successful in the long term. Co-management between governments and local communities allows the traditional knowledge and skills of the local population to be included in the activities of protected area management. Various interests, lack of communication and understanding between different stakeholders can lead to conflicts in protected areas regarding the use and conservation of natural resources.

The Biwindi National Park in Uganda is a good example of a protected area that, after much discussion, negotiations and agreements, managed to balance

nature's protection and economic exploitation of the natural resources of the park. Once the forest area was declared a national park, the use of natural resources was prohibited, which negatively affected the local population. There was an increase in poverty, rising of food and fuel prices as well as reducing income. Through cooperation and agreement between local communities and park management on the use and management of the park's natural resources, a strategy has been adopted in which a limited number of natural resources can be exploited by a certain number of people. The research conducted on two national parks in Estonia has shown that national parks have a significant socioeconomic impact on the population. Respondents in the Somoma National Park where the tourism activities are developed (Jaerv *et al.*, 2016, p. 68) believe that without the National Park they would not have job or additional income. In Lahemaa National Park, tourism is not so developed and the residents mostly work in the fields of agriculture, farming and forestry. The degree of protection limits their activity and exploitation of resources (land, forests) which negatively affects the socioeconomic situation of the population, and the results of the interviews show that respondents have a negative attitude towards the protected area. The results of the research have also shown that the respondents appreciate that their dwelling is in a protected area. They appreciate clean, peaceful environment, silence and stability (slow pace of change), and they pointed out that the value of houses has been increasing for the last 20 years. However, disagreement with the administration of the national park and unclear conservation goals are highlighted as negative aspects of life in this area.

National parks also have great significance in socioeconomic development of the municipalities in Poland. Economic benefits are mainly seen in the tourism sector and the development of related services (Burkhard & Maes, 2017, p. 116). Parks also have a positive impact on the state of the natural environment and ecological consciousness of theresidents. Municipal promotion, quality of life and life in a clean environment, the development of organic farms and better fund-raising opportunities, including EU funds are highlighted as the most important advantages of the park. However, local communities face a number of constraints resulting from the functioning of protected areas, particularly in regard to the possibilities of increasing municipal budget revenues, the development of entrepreneurship and the intensification of agricultural production and fisheries. As negative factors are also mentioned: investment barrier, limited development of economic activities, slow decision making due to complex administrative processes as well as limited access to forests for residents (Zawilińska & Hołuj, 2014, p. 149).

3. Research methodology

This paper aims to contribute to a more active involvement of local communities in the management of protected areas by strengthening the capacity of local government, so that they can influence and control the national policy of environmental protection and nature, which would in the near future, significantly contribute to proper and effective transposition and implementation of EU legislation in relation to the environment in the region.

Apart of the literature revive, analysis of relevant academic papers and book available in the last ten-twenty years in the field of economic assessment of nature protection areas, the paper present the results of in-dip analysis of key stakeholders - relevant bodies, associations and organizations in the policies/sectors that have a direct or indirect impact on protected natural areas and ecological network NATURA 2000. The research was conducted by a semi-structured interview combined with survey on a sample of 43 participants in the period 22nd April – 13th June, 2016. Key selection criteria of participants referred to the identification of sectors that typically do not have direct connection with the protection of nature, but for which there is a likelihood of significant indirect impact on protected natural areas (secondary stakeholders). The analysis has taken into account the status of the participants and levels of activity, therefore institutions, organizations, companies and civil society organizations at national, local and regional level are included. Multi-sectoral analysis included the sectors of nature protection, economy, agriculture, fisheries, tourism, forestry, health, education, employment, spatial planning and sports.

4. Results

In the Republic of Croatia there is still lack of knowledge about economic opportunities offered by natural protected areas. At national level, those who are involved are decision-makers and public authorities directly involved in the process of development of nature protection policy. Business sector are mostly neutral towards the importance of protected natural areas for overall development. International organizations, diplomatic missions and civil society organizations have a similar response. At regional level, the highest interest for interaction of nature protection areas and local development are those institutions and organisations who are directly or indirectly dealing with their management. Low interest for nature protection areas on national, as well

s no local / regional level seems to be the result of insufficient understanding of the economic potential of these areas for local community.
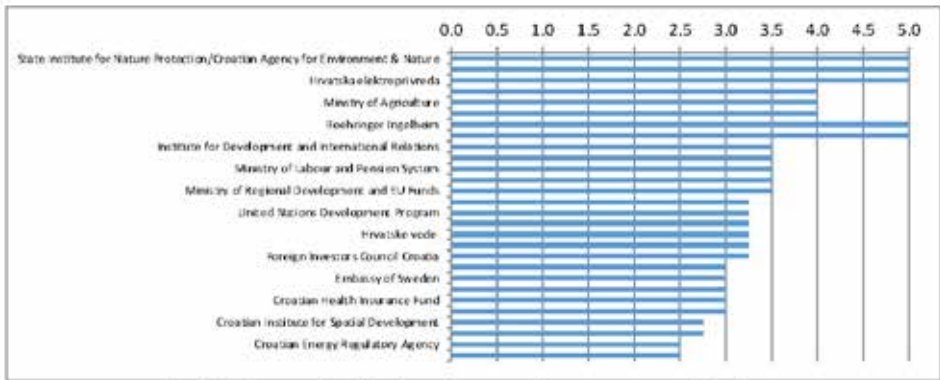
Graph 1. *Interest of stakeholders for protected areas on national level*

Note: Values − completely correct (5), partly correct (4), neutral (3), partly incorrect (2), completely incorrect (1)

Source: Author's research results

The majority of interviewed stakeholders at the national level (74%) evaluate the nature protected areas as relevant or partially relevant to the overall socio-economic development, while the rest (26%) consider them completely irrelevant or retain a neutral opinion against these claims.
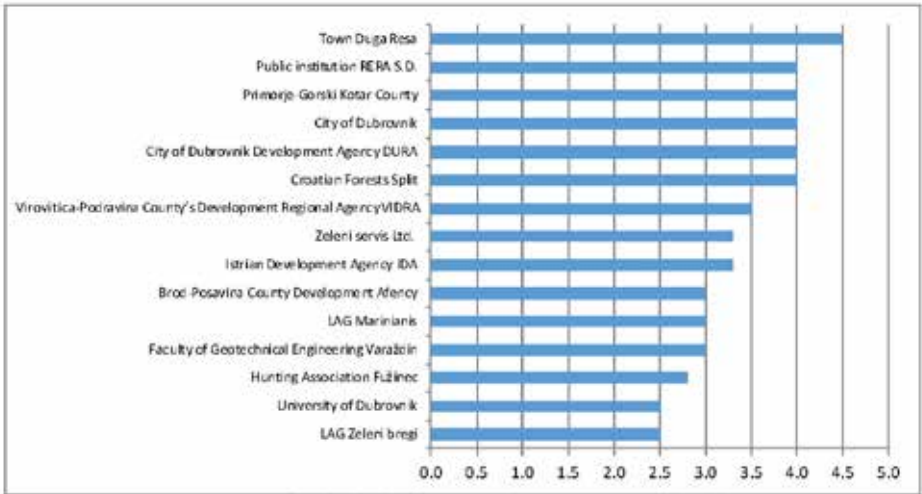

Graph 2. *Interest of stakeholders for protected areas on regional/local level*

Note: Values − completely correct (5), partly correct (4), neutral (3), partly incorrect (2), completely incorrect (1)

Source: Author's research results

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Ninety-four percent of local stakeholders consider that protected areas are important for local/regional development. For majority of the participants the importance of protected natural areas for strengthening socio-economic development is primarily based on tourism activities, and ecological functions of protected areas (*e.g.* climate change mitigation and the appearance of natural disasters such as floods).

More than two-thirds of interviews (65%) do not see concrete benefits or obstacles that nature protected areas may have regarding the creation of new business opportunities or can't be clearly identified. The remaining 35% of participants consider that claim partially or completely accurate. Regional/local stakeholders recognise the interdependence between protected areas and business opportunities in a significantly higher proportion than national stakeholders (36% regional/local stakeholders versus 24% of interviews at national level). These stakeholders highly valuated opportunities for education, jobs, tourism development and entrepreneurship in the protected areas. Obstacles are rare and are mainly related to forestry sector while the limited possibilities of forest management. Also, interviews think that local and national politics interferes too much with management of protected areas and often the primary function is lost - protection of the areas, rather than earning from parks entrance fees.

The rules that regulate activities in protected areas are generally not an obstacle to socio-economic development in local areas. However, the most common problem is the implementation of the existing legislative framework. Procedures for new investment projects are too complex, expensive and time-consuming. Also, existing rules are not known to the general public, some sectoral laws and by-laws are not harmonised with the legislation concerning the nature protection.

Protected areas contribute to development in regions/local communities where they are located, in particular the tourism sector and indirectly the development of SMEs and employment. Indirectly - protected areas are subject of interest (and work) for some bodies at national level, but participants especially mentioned their valuable contributions to human health.

In general, the impact of the participants from national level on decision-making important for the management of protected natural areas is weak or non-existent. The most important and therefore very strong influence on

the decision-making process have all public bodies whose activities directly involve protected areas. At regional and local level, the impact on the decision-making about protected areas is even weaker.

The highest interest for protected areas at national level are from the Government of the Republic of Croatia, relevant ministries (Ministry of Maritime Affairs, Transport and Infrastructure, Ministry of Public Administration), the State Institute for Nature Protection and academic community (University of Dubrovnik, Faculty of Science). Compared to participants at local level, only one county office (Primorje-Gorski Kotar County) mentioned a complete and systematic formal involvement in decision-making processes related to nature protected areas. Other organisations who have shown that involvement in the process did not recognise that their activities are, directly or indirectly, related to parks (*e.g.* The Association of cities and municipalities, Administrative department of the City of Dubrovnik for the sea, entrepreneurship and tourism, Istrian development agency - IDA).

Most interviewed organisations (except those directly related to the nature protection system) do not have the opportunity to participate in decision-making related to this sector. However, they all expressed a strong desire and need to participate at least in a consultative processes important for regional/local community in which the protected areas are, and in decision-making at national level. Low-involvement of wide range of stakeholders in issues related to protected areas (*e.g.* business sector, civil society organizations) resulted with poor cooperation of protected areas and business sector and general low impact and contribution to social-economic development of local communities. Some stakeholders whose activities are not directly related to the protection of nature, do not see the possibility of expanding their activities in protected natural areas, although there is a clear potential for that. Also, the answers of the participants indicate that the economic benefits of protected areas are usually perceived from the perspective of the possibilities for improving the development of tourism, while their potential for employment, development of agriculture, crafts and other accompanying activities are mostly not recognized. Not knowing the business opportunities provided by protected areas is significantly higher at lower, local management levels and among participants who feel that their work is not in contact with natural areas. The national level is better acquainted with the regulations concerning the management of protected areas as the management of national parks is carried at national level, but the local level is, due to the proximity of natural

areas, better acquainted with practical problems. There is a clear need for an enhanced involvement of academic community in the management of nature protected areas. The current situation indicates that the academic community is mainly engaged in the field of their conservation, monitoring and protection (*e.g.* Faculty of Science), while those scientific institutions that could contribute to increasing sustainable economic use of natural areas are less involved (*e.g.* Institute of Tourism).

Critical issues and areas for improvement in common understanding and cooperation od protected areas and local communities identified during the interview with key stakeholders are: low level of cooperation and exchange of information between local and national authorities, existing regulations and planning documents do not match practical problems on the local level, low level of cooperation in economic activities other than tourism (entrepreneurship, agriculture, crafts), limited involvement of research institutions in policy-making for sustainable management of protected natural areas, insufficient knowledge of the business sector about sustainable business practices within and around protected areas and their values, lack of small, "green" infrastructure projects, promotion of green public procurement, implementation of renewable energy sources, natural materials, *etc*.

Understanding of the economic potential and ecosystem services of protected areas is also minimizing inadequate accounting practices and financial reporting. In the European context there is growing interest of business community for the integration of environmental costs and revenues in the standard accounting practices, because the investments in activities related to the use of protected natural areas are seen as a source of income and companies' growth.

5. Discussion

The analysis of planning and legislative documents shows that local community isn't connected with protected natural areas and benefits for entrepreneurship and agriculture are not recognised. The understanding of contributions of protected areas in climate change mitigation and preventing natural disasters is also limited (for example, floods, droughts). Organizations and institutions with the strongest influence on the management of protected areas and most pronounced interest are institutions from the system of nature protection, especially the Croatian Agency for the Environment and Nature and other

relevant institutions at national level such as the Ministry of Agriculture, Ministry of Public Administration and the Ministry of Regional Development and EU funds. Also, public companies that use natural resources in their daily activities such as "Hrvatske šume" ("Croatian Forests", a three-layered commercial company for forest and woodland management owned by the state), "Hrvatske vode" ("Croatian Waters", national legal entity for water management established by the Water Act) and "Hrvatska elektroprivreda" ("Croatian national energy company", dealing with generation, distribution and supply of electricity) expressed their interest in protected areas. These companies, given their importance in the management of fundamental resources and size, have a strong influence on the decisions made in relation to the management and sustainable use of protected areas. Academic community in the Republic of Croatia whose research, scientific and professional work has to do with natural resources expressed significant interest and influence.

Local and regional self-government units expressed significant interest in protected areas, because they would base their future development partly on natural resources and tourist offer of national and nature parks. Since the protected areas are under the jurisdiction of the Ministry of Environment and Energy, local and regional self-government units do not participate directly in decision-making process and their influence is thereby formally restricted. Also, business sector shows interest for protected areas, but also with the limited influence on decision-making process. They often perceive parks more as a constraint to investment rather than as a business opportunity.

Minimal impact and interest in protected areas as a development resource is shown by Local action groups (although some protected areas are co-founders of LAGs), Hunting associations and the Croatian Chamber of Economy. It is interesting that the Croatian National Tourist Board didn't show willingness to participate in the survey, although research carried out during 2013 showed that there is potential and interest of the visitors for protected areas (Kramarić *et al.*, 2006, p. 114), and there are good examples of excellent cooperation (*e.g.* Zagreb Tourist Board and PP Medvednica).

6. Instead of a conclusion

Results of the study of different stakeholders' opinions and their relation towards protected natural areas at national and regional level as well as international organizations in the Republic of Croatia show that the protected

areas are an important resource of the Republic of Croatia and the potential to start socio-economic development in regions and local communities where they are established.

There is an obvious need for additional involvement of those stakeholders who are already showing a certain degree of interest in protected areas. Stakeholders whose daily activities do not include nature protection show less interest in this areas, but there is potential for expansion of activity by pointing to the potential for development of protected natural areas. With such stakeholders it is necessary to strengthen the awareness of the economic and development potentials of protected natural areas (LAG, CCE, Hunting associations).

In certain sectors, such as tourism, there is a need to promote the potential of protected areas to develop tourist activities and associated activities, and at local level it is necessary to strengthen awareness of the possibilities of creating direct and indirect jobs related to the sustainable economic use of protected natural areas.

The overall conclusion is that the protected natural areas are still largely viewed through the protection, control and preservation of nature, and is therefore expressed closed nature to potential investors and the business sector in general.

The opinion towards the laws and strategies that determine the way of management of protected natural areas is generally neutral. Knowledge of regulations and strategic documents is still largely reserved for decision makers at national level. The majority of participants do not know the problems related to law enforcement and strategies in the field of nature protection. Those who in their business practices encounter with the implementation of legislation emphasize the need for the removal of complex legal procedures and systematic cooperation for effective implementation of laws in the field of nature protection as fundamental changes that need to be implemented.

The impact of participants on decision-making in the field of nature protection is weak. It is mostly limited to the decision makers in that sector, with little involvement of other stakeholders (*e.g.* NGOs, the business sector, the academic community). Protected natural areas, especially parks and national parks, are almost exclusively managed through measures taken at national

level. This conclusion is derived from the results of tests conducted on regional/local level where it is observed very little or no influence of local and regional stakeholders in the decision-making process regarding protected areas.

Stronger integration of protected natural areas in the development of local communities is a long process that requires the implementation of a series of activities in the short, medium and long term.

Table 1. *Recommendation for future activities*

Short term (1-5 years)	Medium term (5-10 years)	Long term (10 years and more)
Strengthening of promotional, informational and educational activities aimed at improving awareness of business opportunities in protected natural areas and their vicinity	Consider the possibilities for revision of the legislative and policy documents with goal of creating an enabling framework for investment in protected areas and the integration of protected natural areas in development policies	Strengthen the involvement of protected areas to increase the standard of living and quality of life in local communities in their vicinity (increase revenue, increase employment)
Improving horizontal and vertical cooperation between stakeholders in sectors with potential involvement in the nature protection sector (civil society, academic community, policy makers, *etc*.)	To strengthen the openness of protected areas, particularly national parks and nature parks, towards the business sector and private investment	Introduce systematic incentive measures to strengthen economic activities in protected natural areas (fiscal incentives, employment incentives, subsidies, incentive models of public-private partnerships)
Ensure timely, active and transparent participation of all stakeholders and general public in the decision-making process related to the protection of nature.	Encourage the development of environmental accounting aimed at strengthening environmental responsibility and the integration of nature conservation in business activities of the private sector	Provide financial resources to support the integration of protected natural areas in development (plan budgetary resources, provide donations, increase revenue from concessions, reliance on EU funds ...)

Source: Author's research results

Key short-term activities aim to improve awareness of business opportunities in protected natural areas through education and promotion as well as horizontal and vertical cooperation between all relevant stakeholders. Medium term objectives are, among others, based on revision of the legislative and policy

documents with the goal to create a framework for and enable investment in protected areas and the integration of protected natural areas in development policies as potential investment areas. In the long term, key role of nature protected areas is to support quality of life in local communities in their vicinity and secure sustainable living and welfare of future generations.

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MITIGATION SOCIO-ECONOMIC INEQUALITIES IN SERBIAN RURAL AREAS – ONE STEP CLOSER TO WELFARE ECONOMY

UBLAŽAVANJE DRUŠTVENO-EKONOMSKE NEJEDNAKOSTI U RURALNOJ OBLASTI SRBIJE − KORAK BLIŽE EKONOMIJI BLAGOSTANJA

Abstract

This paper is the result of research about the ricing rural urban migration in the Republic of Serbia and significant socio-economic inequlities in it despite institutional efforts to mitigate this issue. Authors found the initiative for this research in European rural development strategy for period 2014-2020, which highlighted the efforts to meet the wide range of economic, environmental, and social challenges of the 21st century. Therefore, authors investigate how it is possible to improve wellbeing in Serbian rural area. In the period of creation of paper policy makers faced with growing pressure to "do something because many experts and reports confirmed that results of previously adopted policies are far from expected. Authors addressed the special need of improvement current policies and make them more efficient. The methodology used during the paper preparation process is in accordance with those used for similar social scientific research: descriptive, comparative, and content analysis. Financing rural development in the (post)recession period has completely different dimension from those in urban areas. Of course, authors are aware that this issue is very controversial in aspect of economic and social discourse, and therefore used a set of dimensions and indicators describing the condition and extent of rural inequality. Numerous experts highlighted pro poor growth and community based risk reduction policy as the most important issue in the approaching of welfare economy in rural area. The paper suggests a number of entry points for further research that

could be uses to better align socio-economic inequalities. The paper shows how rural policy can be refined and targeted to tackle these multi-faceted problems in the most appropriate way for the benefit of rural community.

Keywords: rural areas, inequalities, investment, welfare, poverty

JEL: D31, D63, I38

Sažetak

Ovaj rad je rezultat istraživanja o porastu migracije iz ruralnog područja u urbane dijelove Republike Srbije i značajnim društveno-ekonomskim nejednakostima u ruralnim oblastima, uprkos institucionalnim naporima za ublažavanje ovog problema. Autori su inicijativu za ovo istraživanje pronašli u Evropskoj strategiji ruralnog razvoja za period 2014-2020, u kojoj su istaknuti napori da se odgovori na širok spektar ekonomskih, ekoloških i društvenih izazova 21. vijeka. Zbog toga su autori istražili, između ostalog, i kako je moguće kreirati mnogo efikasnije razvojne politike ruralnih oblasti od postojećih. U periodu kreiranja rada donosioci odluka su suočeni sa sve većim pritiskom da se "učini nešto" jer mnogi stručnjaci i razni izvještaji potvrđuju da su rezultati ranije usvojenih politika daleko od očekivanog. Autori su ukazali na specifičnu potrebu da se postojeća infrastruktura unapredi i time posluži kao osnov za privlačenje novih investitora u ruralnim oblastima. Metodologija koja se koristila u izradi rada je u skladu sa metodologijom primijenjenom u sličnim oblastima naučnog istraživanja: deskriptivna, komparativna i metoda analize sadržaja. Finansiranje ruralnog razvoja u periodu (pos)trecesije se značajno razlikuje od investiranja u urbanim sredinama. Naravno, autori su imali svijest o ovom kontroverznom pitanju u pogledu ekonomskog i socijalnog diskursa, radi čega su koristili niz dimenzija i indikatora koji opisuju stanje i stepen ruralne nejednakosti. Brojni stručnjaci su istakli potrebu pro poor rasta i politiku smanjenja rizika u ruralnoj zajednici kao najvažnije pitanje u približavanju ekonomiji blagostanja u njima. Rezultat rada su preporuke u cilju budućih istraživanja koja su neophodna da se na adekvatan način ublaže detektovane društveno-ekonomske nejednakosti. Ovaj rad je ukazao da se ruralna politika treba preoblikovati na način koji će ciljano tretirati višestruke postojeće probleme i to isključivo u korist ruralne zajednice.

Ključne riječi: ruralne oblasti, nejednakosti, investiranje, blagostanje, siromaštvo

JEL: D31, D63, I38

1. Introduction

Throughout the history of modern civilization, humans strive for new models of progress. In most of them, the dominant model has been economic growth, and that remains important. Anyhow, in globalized world the new challenge for policy makers start to be how to increase the wellbeing of its society as the new concept of progress. Numerous organizations have responded strongly to the challenge [the United Nation (UN), European Union (EU), Organization for Economic Cooperation and Development (OECD)]. Care and responsibility to mitigation of socio economic and environmental inequalities in rural areas is essential to rural population wellbeing, and is just as important to understanding wellbeing for all Serbian society. In the Republic of Serbia (RS) looks like we are far away of achievement of wellbeing, and due to that fact there is an urgent need to create a national conversation centered in the wellbeing of the society based on four pillars: sustainability, wellbeing, community and safety. Rural community wellbeing is addressed in a variety of ways.

At the informal General Assembly thematic debate on inequality UN Secretary, General Ban Ki-moon's, pointed out that "the Millennium Development Goals have been remarkably successful in generating global action across a range of issues... Social and economic inequalities between rural and urban areas are worsening. Of the more than 2, 6 billion people that still lack access to safe sanitation, the vast majority live in rural areas. If inequalities continue to widen, development may not be sustainable. That is why equity is emerging as a central plank in discussions on the post 2015-development agenda" (UN Press Release, 2013).

Policy makers have to understand the need for use all resources to create meaningful, lasting impact for rural population. It does not be realize by inadequate and too ambitious strategies and action plans, and knowledge that from the beginning their implementation is in discrepancy with reality. Serbian policy maker have to be aware that welfare of nation can in turn affect political stability (Loubser & Steenekamp, 2012, p 4).

The purpose of this article is to illustrate the challenges facing Serbia to design its adequate rural development policy which will be more effective. It presents the current state of the rural development faced with numerous social, economic and environmental inequalities, mostly to the great discrepancy in regional development. It engages a set of questions for public discussion; it

initiates the government and other important actors to mitigate inequalities, to overcome them more efficiently, keeping in mind that these actions affect local, regional, and national economy. By the use of cognitive approaches, it is suggested to the stakeholders to design new policy, which could help them to solve problems in the domain of the inequalities and increase the rural development economy and national welfare.

The methodology used in the article to analyze the previous efforts in the area of rural development, as an integral part of welfare economy produced a desk top study as a base for further research. It is coherent with social science approaches: historical analysis, comparative analysis, and document analysis. The method draws on multiple sources of information. The authors have reviewed literature from various disciplines that inform readers about issues of the research: rural development, wellbeing, economy, security science, educational science, risk and disaster management, *etc*. A corpus of documents has been constituted. It is made of electronic databases, books, scientific journals, official documents and examples of positive practices from international communities, publications of the most influential international organizations in the area of rural development and wellbeing theory, *etc*.

The organization of the article is divided into five parts. After introduction in the first part authors present short linkage between development of rural areas and concept of wellbeing. After that in second part some of the most visible inequalities which jeopardize Serbian rural communities are explained in brief. In the part is presented a discussion about the achievements and obstacles recognized in rural area which are persistent, and on which the future actions have to been targeted. Conclusion demonstrates the need for an urgent discussion on the evaluation of rural development policy in the Republic of Serbia. The last part is devoted to references used in process of paper creation and important for further reading of any interested party.

2. Linkage between the rural areas and wellbeing

The wellbeing is an interdisciplinary, holistic issue. Wellbeing is shaped by the complex relationship between many factors. It is influenced personal, community and societal resources and supports, as well as by social, economic and environmental conditions which exist. In the most developed countries an Index of Economic Wellbeing (IEWB) for the period 1980 to 2001 recognized for components:

- Current effective per capita consumption flows,
- Net societal accumulation of stock productive resources,
- Income distribution, and
- Economic security.

In global society rise a need for find a better measure of "access to economic resources" focusing on the economic aspects of well-being and the importance of non-economic issues. The better measure of economic wellbeing is needed economic and "social" trends tends are to be combined into an index with larger ambitions. Furthermore, after all efforts Gross Domestic Product (GDP) per capita is consider as one of the three main components of the UNDP's Human Development Index (HDI) (Osberg & Sharpe, 2003, p. 7). The objective of HDI is to indicate the capability of people ``to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living (UNDP, 2001, pp. 14). It represents (HDI) a composite index with three equally weighted components: health, education and income. Serbia's HDI value for 2015 is 0.776 − which put the country in the high human development category − positioning it at 66 out of 188 countries and territories (UNDP, 2017). Equality is one of the few basic components of wellbeing. Its subcomponents are poverty intensity and income inequality. Hence, GINI coefficient is important measure of inequality of a distribution and it is used to compare income distributions across for urban areas and how it differ s from that of rural areas. GINI index for Serbia in 2013 was 38 and rise in 2014 on 38.6. In 2016, it was the same (38.6) like in 2014. GDP growth in Serbia in 2015 was 0.8 and current account balance was -4.7 (European Commission, 2016, p. 27).

At a national level, there is a vast amount of literature examining the social conditions of rural Serbia and the consequences of restructuring on the rural economy. Achieving sustainable development in rural area is a permanent action. Based on data from Strategy of agriculture and rural development is known that from total number of 6,158 settlements, 5,965 are identified as rural (96.7%) ("Official Gazette of the Republic of Serbia No 85/2014", p. 36, 2014). The situation in Serbian rural areas is far from favorable. Statement in official reports and academic papers confirmed that after all actions performed in the last decade there are a lot of rooms for improvement. Numerous facts about the impact of rural to urban migration on wellbeing in Serbia are evident, but still is there is a lack of efficient measures, which will improve the quality of life of rural population.

The concept of wellbeing has its roots in development studies, particularly in the understanding and, measurement of poverty. Poverty is usually defined in relative terms, for example as half mean income, but relative poverty has real consequences for such quality of life outcomes as health and life expectancy (Maxwell & Kenway, 2000, p. 2). Bearing in mind that Serbia is not developed country and belongs to the group of highest fragility in 2016 the task of creation new more efficient policy is not so easy for policy makers. Despite various efforts of stakeholder the wellbeing could not be achieved in condition where "the broken society and the broken economy resulted from the growth of inequality" (Wilkinson & Picket, 2010, p. 5).

3. Inequalities which jeopardise Serbian rural communities

Economic and social inequality between rural and urban areas has been persistent in the Republic of Serbia. Regional inequality increases the socio-economic pressure for sustainable development of Serbian society. The results presented after analysis in a period 2002-2007 show that in Serbia is highly expressed regional inequality in distribution of rural regions by type. On one side is very strong urban population center, Belgrade with around 2 million inhabitants, and on the other side is a homogenous, clean rural area that includes the entire non-metropolitan territory of Serbia. Within this period, the values of rural indicators in Serbia were not significantly altered and it is obvious that the structural changes in rural regions take much longer. For example, the unemployment rate as the ration of urban and rural regions was 1:2.3 (Gligorijević & Stepić, 2010, p. 8).

Socio-economic characteristic of rural population in relation to rural development has to be well understood. Hence, there is visible growing interest in social conditions of Serbian rural areas and the importance of social factors in enabling communities to adapt to change resulting from economic and political restructuring after 2000. Some author claimed that "regional inequality in Serbia is partly the result of the historical inheritance and partly the result of the policy of the economic development" (Miljanović, Miletić & Đorđević, 2010, p. 263). Furthermore, traditionally undeveloped regions of Serbia are rural, hilly-mountainous and bordering regions, located in south (municipalities Jablanica, Pčinj, and Toplica districts), and south-western part of Serbia (peripheral, bordering municipalities of Zlatibor and Raška districts) (Todorović & Drobnjaković, 2010, p. 211).

This issue is recognized in the significant scope as an important area in national, as well as on regional level. Because of the lack data, standard indicators related to GDP of rural areas, and their structures did not represent socio-economic situation of rural areas. Due to that and some more reason researcher focused on the different aspects of labor market, employment incomes of rural households, and characteristics of farming sectors. For example, Winkler in his paper addressed the huge disparities between urban and rural. In his work he used 25 reliable variables combining different spheres of population structure, economy, work and infrastructure, pre-school education and medical care an overall Index of Socio economic Pressure and successfully detected patterns of regional disparities on the Serbian territory (Winkler, 2012, p. 83).

There are a great interest in different scientific area to examine socio-economic and environmental inequalities in the country in whole but results regarding rural region is not well presented in public and do not exist in one place. The main objective of researches in rural areas were devoted to health, education, social inclusion, rural development, mostly tourism, security and resilient in various emergencies, finance allocation for agriculture *etc*. Social and physical environments have been recognized as important determinants of health. One of the interesting study with goal to describe inequalities in the prevalence of some common chronic diseases according to socioeconomic status measured wealth index Health survey in Serbia in six regions (Vojvodina, Belgrade, West, Central, and South East Serbia). Results confirmed that are difference of prevalence of chronic disease according to the level lower or higher wealth index (Vuković, Bjegović & Vuković, 2008, p. 839).

The rural problem of pervasive out migration, particularly young people has been partially attributed to these inequalities. In the case of young people, structural factors including limited educational and employment opportunities have dominated explanation of this trend. In the region of South and East Serbia decrease of population is the greatest and counts 189 088 person (less for 10.79%) and it could be firmly connected with the highest poverty rate (33%). In some south municipalities this rate is among the highest in Serbia (Bojnik 63.4%, Trgovište 56.5, Lebane 54.6) [Statistical Office of the Republic of Serbia (RSZ) & World Bank Group, 2016, pp. 19-30]. In Serbia in 2016 are 25.5% of persons at risk of poverty. Relative poverty and inequality indicators in detail are presented in Statistical Release in March 2017 (RSZ, 2017, p. 1).

People in rural areas recognized a lack of affordable education and offer limited educational opportunities. In the process of implementation, rural development measures the financial and informatics literacy is from the paramount importance. In the era of various financial instruments available in the broader rural economy, especially in the agriculture and forestry sectors financial literacy has to be improved. This issue is visible in work of Committee for the village of Serbian Academy of Sciences and Arts (SASA) who organized Round table named "Financial and informatics literacy of rural population in Serbia". Its goal was better utilization of pour resources which are available for financing of agriculture and villages, from extremely importance is that the village inhabitants and agricultural producers to be informed about basic categories related to finance, loans, insurance (to be financially literate) as well to be computer literate (Institute of Agriculture Economics, 2015).

Often rural populations perceived inequality and inequity in affordable public services. Elimination of inequalities in accessing clean water and adequate sanitation, particularly for those living in rural areas, is essential for achieving 2030 Agenda for sustainable development. In last few years was obvious that the plans regarding rural development could be more holistic having in mind the specific security circumstances in those areas. Example could be the issue of rural emergency management and the challenges facing rural communities, which are not seen as a specific topic for Emergency Management Sector, neither other stakeholder. Floods happened in 2014 hit hardest rural areas and increased of poverty rates. In Serbia rural population is more often in risk to be poor than this in urban area. It is twice higher and counts 37.98% in rural and 15.92% in urban areas. In 2013, 12% of rural population suffered from absolute poverty, compared to 6.3% of persons in urban areas (Petrović & Milić, 2016, p. 6). In the area of rural tourism so important for rural development security issues are considered partially. Stakeholders in their future effort should include the bridging the gap between knowledge and action, embrace use of innovation of safe tourism product, and provide needed condition to the free market and sufficient capacities of rural communities (Radović & Vojinović, 2017, p. 15).

Furthermore, in the Republic of Serbia still miss representative, interdisciplinary research projects which will investigating the nature and extent of social, economic and environmental inequalities and injustice in rural areas on similar way like is realized in developed countries. The

measurement of poverty based on income or consumption, followed with the indicators of education and health in rural areas is needed for a purpose to recognize it in level of vulnerability, voicelessness and powerlessness. Sometimes poor people in rural areas can be treated badly by institutions of state and society excluded from voice and power in those institutions.

Rural communities in Serbia in last few decades "where undergoing a Great Change in which their autonomy and social cohesiveness was being rapidly eroded by various developments in mass society" (Holden & Bourke, 2014, p. 209). At the end of this chapter, it is important to address the conclusion that in Serbian rural area inequalities become unfair in cases similar like this, which exist in our countries. These cases are:
• People have no choice,
• Political decisions are made without accounting for local concerns, and
• Market forces exacerbate local problems.

Policy makers have to think about following numerous positive practice presented in various case studies and the wider literature which leads to some broad propositions about the contribution of agriculture and rural development to pro-poor growth (The World Bank, 2005, p. 34).

4. Towards a more effective policy in rural community wellbeing

After all years of implementation different action in Serbia and region conclusion could be that, there is a still noted large difference in the socio-economic structures of rural areas. Some of the experts in area of rural development stated that "the low and instable level of rural development support, which also varies in terms of scope and measures applied, does not address enough of the problems in rural areas. It slows down the ability to solve some of the key problems of structural reforming of rural areas, including poverty, environmental degradation, and generation of new jobs" (Kotevska *et al.*, 2015, p. 117).

It is strange to read a numerous book about the rural development plans and measures in detail, even use of specific European financial instruments like Instrument Structural Policy for Rural development (IPARD), and compare it with the statement from the last report of the European Commission (EC) about Serbian result in the process of fulfilment of condition needed for rural development. Process of use IPARD instruments are explained with prediction

of all necessary institutional and organization bodies for its implementation as Management Authority and Payment System or Payment Agency (Janković & Kostić, 2009, p. 20). Ability to assume the obligations of EU membership in the area of agriculture and rural development is reflected in creation of a strong management and control systems. Serbia has some level of preparation in agriculture and rural development. Some progress was made towards aligning national legislation with the Common agricultural policy (CAP), and the development of an action plan on *acquis* alignment has advanced. In the coming period, Serbia should in particular:

- Take all necessary steps to fulfill the requirement in order to be entrusted with budget implementation tasks from the IPARD II programme, including allocation adequate resources and strengthening the capacity of all IPARD bodies and improving implementation procedures;
- Adopt and proceed with implementation of the action plan for acquis alignment in agriculture and rural development (European Commission, 2016, p. 42).

Having in mind that farmers in Serbia are in bed financial situation it is obvious urgent needs to address outstanding issues to be in a position to move ahead with implementation of the IPARD II programme. The most obvious way to try to end the poverty of small farmers is to subsidize their production; there are various historical examples of this, and it is recommended once more in contemporary conditions (Boltvinik, 2016, p. 18).

Serbian farmers in the last decade many times showed strongly disapproved with Government measures. Therefore, they protested many times by blocking roads in northern Serbia by trailers, tractor, and protest over the limited subsidies in 2011. They strongly demand the withdrawal of Land Law which "encourage corruption" in 2017. Farmers showed in public dissatisfaction with prices of different agricultural products like raspberry, wheat, corn or diary product going in front of Government building to draw attention to their plight. In addition, they looking for tax reduce in case of extreme weather events like draughts in 2003, 2007, 2012, and 2017, floods, *etc*. Moreover, the policy makers allowed police intervention order to safeguard public order. The prospects of EU membership have also raised concerns about the readiness of the farmers for increased competition because they do lack knowledge, technology and modern equipment (Domazet, Radović & Cvijanović, 2016, p. 769). Therefore, policy makers in the future should have in mind all consequences of their hasty decisions.

The area of human security social policy that entails public intervention in education, health, employment and social protection also plays an important role in reducing poverty and inequalities in rural areas. Hence, it is necessary to create adequate changes in rural areas with involvement of the highest institutions in country. Policy maker in the future have to accept as example from the United States of America (USA) where president Obama established the White House Rural Council with goal to strengthen rural communities and promote economic growth of it. Numerous measures are creating in the process for improving access to quality, affordable healthcare, housing, education and other critical facilities (White House, 2011).

Speaking about the future development of rural communities having in mind existing inequalities and other obstacles, it is worthy to accept experience from the developed countries, for example from Japan. In future policy "sixth industrialization" (Nakano, 2014), which means combination projects what agriculture, food processing, and retail to create new products could be helpful in a path of promotion products from rural areas. Japan created special education program to cultivate human resources as actors of the sixth industrialization. Using the industry it helps to overcome important issue for Serbian economy regarding "added value to row products". In creation of new business the "mismatch" between a farmers, food processors, and consumers cause problems which has to overcome. There is a need to increase collaboration among all stakeholders, especially between farmers and academic community because there are difficulty that a farm integrated the functions, risks, and cots of other industries because the farmer s profession is agriculture, and do not have a knowledge of food processing and retailing. This will enable farmers not only to concentrate agriculture as a specialist, but also to provide extra agricultural products as input materials to other actors, therefore farm operation can be stable and agricultural income will be able to increase (Nakan, 2014, p. 316). Similar policy will prevent the loss of Serbian farmers who sometimes faced with financial consequences because they cannot repay short- term or long-term loans.

It looks that after all in is finally confirmed that if society has to achieve declared goal in the area of rural development it has to create more effective rural development policy. Policy makers have to "manage the institutional dimension of sustainable rural development through coordination of numbered of activities in the fields of economic, environmental and social policies at national level, and align them with international policy and development program" (Hafner, 2015, p. 100). Without adequate interdisciplinary coordination among stakeholders

all plans will be hardly realize in practice and rural communities with face even with worse situation. Furthermore, the academic community and experts as well international organizations will continue to rewrite the same proposals as many times before. Instead, to accelerating our efforts and move forward taking a giant leap we will continue at a snail's pace.

5. Conclusion

Wellbeing in rural areas is important part of society wellbeing. If we really want to achieve wellbeing in rural areas in the Republic of Serbia, policy makers have to follow the learnt lesson from South Australia, the high wellbeing country in the world. There are no magic to reach that goal. It has to be more efficient and devoted to achieve wellbeing as the balance between the challenges we face and supports and resources available to us. Mitigation of socio economic and environmental inequalities has to be priority and not just declared goals like many times before. Increasing education in rural area leads to better health outcomes. Improving health outcomes not only improves wellbeing but also increses income earning potential. Importance of rural population voice has to rise in the future, and so far, it will contribute to increase community resilience, and fell of equality in a process of making community decision. Anyhow, Serbian societies still need to inform, stimulate and challenge understanding of rural community wellbeing in a process of improvement life condition in rural areas. The emphasis is placed on understanding the interconnected nature of economic, social and environmental processes and outcomes. It should not be a task for privileged so-called "experts" and small number of university and academic staff selected as the most appropriate for political parties in power. Independent evaluations of the rural development policy instruments are urgent if we want to eliminate low policy effectiveness in the future. Hence, in the Republic of Serbia looks like we are far away of achievement of wellbeing. New policy of rural development has to be reframed and based on four pillars: sustainability, wellbeing, community, and safety.

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RELEVANCE OF RURAL WATER SUPPLY FOR REALIZATION OF THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS IN BOSNIA AND HERZEGOVINA

ZNAČAJ VODOSNABDIJEVANJA U RURALNIM PODRUČJIMA ZA DOSTIZANJE CILJEVA ODRŽIVOG RAZVOJA UJEDINJENIH NACIJA U BOSNI I HERCEGOVINI

Abstract

In terms of communal service provision, Bosnia and Herzegovina is characterized by significant differences between urban and rural areas. Water supply in rural areas is among the main issues needing attention. Whereas certain improvements were introduced in the legislative and institutional frameworks in recent years, there are still significant problems related to the citizens' access to safe and affordable water services. According to the entity strategies on water management, 40% of country's population does not have access to controlled water supply. This is a considerable challenge in the context of meeting the Sustainable Development Goal 6 (SDG6) which imposes the task of reducing the inequality in water service provision for all people.

Objectives of this paper are to identify the types of water operators in rural areas, analyze their performance and explore outcomes in terms of population coverage, service quality and efficiency, with special attention paid to the affordability issue. The primary data collection was conducted by screening the rural water supply situation in 48 local governments and studying 20 selected cases using structured interviews with local governments, service operators and 600 households. Local governments are legally responsible for water supply, but they operate negligible number of water

schemes; public utilities operate 13%, while informal citizen groups operate 74% of water schemes. Due to informal character of the predominant operator, water delivered to rural citizens is of questionable quality.

Findings of this research contribute to the empirical base for understanding of how water operators work and how citizens perceive services. Local governments are recommended to design innovative approaches for improved rural water supply, which will contribute to realization of SDG6.

Keywords: rural water supply, water quality, water operator, performance indicator, affordability

JEL: H70, I30, O2

Sažetak

U oblasti komunalnih usluga, u Bosni i Hercegovini postoje značajne razlike između urbanih i ruralnih područja. Vodosnabdijevanje u ruralnim područjima zahtijeva posebnu pažnju. Iako su u posljednjih nekoliko godina realizovana određena poboljšanja u pravnom i institucionalnom okviru, i dalje su prisutni značajni problemi vezani za pristup svih građana sigurnoj vodi za piće, po priuštivim cijenama. Prema entitetskim strategijama za upravljanje vodama, 40% stanovništva u zemlji nema pristup vodi za piće kontrolisanog kvaliteta. Ovo predstavlja veliki izazov u kontekstu dostizanja Cilja održivog razvoja 6, koji nameće zadatak za smanjenjem nejednakosti u pružanju usluge vodosnabdijevanja za sve građane.

Ciljevi ovog rada su identificirati vrste operatera vodovodnih sistema u ruralnim područjima, analizirati njihove performance i ispitati efekte u smislu pokrivenosti stanovništva uslugom, kvaliteta i efikasnosti usluga, uz. posebnu pažnju poklonjenu priuštivosti. Prikupljanje primarnih podataka provedeno je snimanjem stanja vodosnabdijevanja u ruralnim područjima u 48 jedinica lokalne samouprave i analizom 20 odabranih slučajeva putem struktuiranih intervjua sa predstavnicima lokalne uprave, operatera i 600 domaćinstava. Jedinice lokalne samouprave imaju izvornu nadležnost za osiguranje usluge vodosnabdijevanja, ali organi uprave pojavljuju se u ulozi operatera u zanemarivom broju vodovodnih sistema u ruralnim područjima; javna komunalna preduzeća su operateri u 13% sistema, a neformalne grupe građana u 74% sistema. Zbog neformalnog karaktera najvećeg broja operatera, voda isporučena domaćinstvima je upitnog kvaliteta.

Nalazi ovog istraživanja doprinose povećanju baze empirijskih podataka o načinima upravljanja operatera vodosnabdijevanja i percepciji kvaliteta usluga među građanima. Lokalnim vlastima preporučuje se razvijanje inovativnih pristupa za poboljšano vodosnabdijevanje u ruralnim područjima, kako bi se doprinijelo dostizanju Cilja održivog razvoja 6.

1. Introduction

In September 2015, the United Nations General Assembly formally adopted the universal and integrated 2030 Agenda for Sustainable Development, along with a set of 17 Sustainable Development Goals (SDGs) (UN, 2015). The ultimate aim of the 2030 Agenda is to end all forms of poverty and ensure prosperity for all citizens, while protecting the planet. For SDGs to be reached, various stakeholders need to contribute with own resources: governments, the private sector, civil society and individuals.

The SDG 6 addresses the realization of the human right to water and sanitation. It requests to *Ensure access to water and sanitation for all*. This Goal responds to the global estimate that by 2050 at least one in four persons is likely to live in a country affected by chronic or recurring shortages of fresh water, if current practices of bad economics and poor infrastructure persist. Even though the SDGs are not legally binding, the countries are expected to strengthen equitable, participatory and accountable water governance. Localization of SDG 6 in BiH means translating the target for *universal and equitable access to safe and affordable drinking water for all* into responsibilities and actions of relevant actors, while taking into account the country's context.

In terms of communal service provision and infrastructure development, the area of Bosnia and Herzegovina is characterized by significant differences between urban and rural areas. Water supply and sanitation in rural areas is among the main issues needing attention. According to the Second Periodic Report of Bosnia and Herzegovina on International Covenant on Economic, Social and Cultural Rights, published in June 2010 (MoHRR, 2010, p. 32), the country has been making efforts to "*ensure access to safe drinking water within, or in the immediate vicinity, of each household*". Data in this Report indicated that in the Federation of BiH about 60% (1,179,900 inhabitants) of total population was covered by the public water supply systems (the same data can be found in the Water Management Strategy of Federation of BiH 2010-2022). In the urban areas the population coverage by water supply was up to 94% and in the rural areas it was only about 20%.

In Republika Srpska (RS) 46% of the total population (736,000) was covered by the public water supply services in urban areas, while 54% of the total population (864,000) relied on small-scale water supply systems, private wells and sources of surface water. Total number of such local water supply systems in the RS was estimated to 9,800. RS Integrated Water Management Strategy for 2015-2024 period, adopted in February 2016, revised these numbers and wrote that around 741,400 (48%) people are connected to municipal central public water supply systems, 183,700 (12%) are connected to water supply systems run by the local communities ("mjesne zajednice"), and 624,900 (40%) are supplied from individual wells or water sources, that probably include small rural water supply systems not considered as providing organized and safe water supply.

Data from the Census 2013 show somewhat higher figures regarding access to controlled water sources for BiH population. According to this Census, about 65% of BiH households are connected to the public water supply systems where drinking water is regularly controlled. About 20% of households use water from rural water supply systems, while the remaining 15% of households rely on various individual systems. Water quality in the rural water supply and individual systems is not regularly checked, sometimes not at all or even advised as "technical" water, meaning not to be used for drinking. This is a considerable challenge in the context of meeting the SDG 6 target which imposes the task of reducing the inequality in water service provision for all people. BiH has the responsibility for follow-up and review of the progress made in implementing the SDG 6, which will require quality, accessible and timely data collection.

Objectives of this paper are to identify the types of water operators in rural areas, analyze their performance and explore outcomes in terms of population coverage, service quality and efficiency, and to provide relevant recommendations for improvements.

To meet these objectives, the paper is structured into five sections. Section 2 presents the contemporary literature review on the performance indicators for the rural water supply operators and legal framework for provision of water services in rural areas of BiH. Research methods for data collection and analysis are described in Section 3. Then, Section 4 outlines the evaluations of selected key performance indicators for rural water supply systems in BiH and discusses the results. In this Section, specific attention is paid to the affordability issue,

both from the perspective of lower income in rural areas, and from potentials for introducing new operating modalities that may increase the costs. Section 5 draws conclusions and recommendations that should help relevant authorities in BiH to monitor the progress in implementation of SDG 6.

2. Theoretical background and literature review

Numerous projects and research papers addressed rural water supply systems. Considerable investments have been made in these systems – as example, just the World Bank has lent around US$ 1.5 billion in 25 years (from 1978 to 2003) for springs protection, drilling wells, construction of water pipelines. Still rural water supply population coverage lags behind the urban water supply and majority of the people without access to safe water supply live in rural areas (RWSN, 2009, p. 2).

International support and aid institutions often led researches in this area. At the end of 20th century UNDP – World Bank Water and Sanitation Program prepared a study on sustainability of rural water supply systems, with the objective to evaluate the impact of different project rules (eligibility criteria, technology and level of service options, financial policy, ownership rights, procedures for project implementation, operations and maintenance) and the applications of these rules on sustainability. Aim was also to define improved sets of rules for future projects for rural water supply systems supported by the World Bank or other international financing institutions. Study concluded that there are four key factors affecting the sustainability of rural water supply systems and these are (i) demand-responsiveness at the household level, (ii) training at the household level, (iii) the existence of organization to manage the water system, and (iv) the quality of system construction (Katz & Sara, 2005, p. 45).

Banikowski (2005, p. 35) recommends for rural water supply systems to utilize innovative policy techniques and to build on experiences of public utilities in order to achieve both sustainability and affordability. There is no general solution for all and policymakers should carefully evaluate the costs and affordability for each of the system options case by case and community by community basis.
Affordability is one of the main issues in securing sustainable provision of water supply and wastewater services. Affordability of rural water supply in developing countries is often in focus of international financing/aid institutions. Since in rural areas the costs of centralized water services are highest while affordability is lowest, separate solutions to this challenge need

to be decided. As an effective way of dealing with this OECD report propose using higher payments by better-off urban people to subsidize costs for the rural poor population (OECD, 2007).

The African Development Bank addressed this important issue in the Guidelines for User Fees and Cost Recovery for Rural, Non-Networked, Water and Sanitation Delivery, published in 2010, in order to assist Regional Member Countries, service providers and investors working in project formulation and appraisal, sector and policy analysis in the water supply and sanitation, but also irrigation and related agricultural projects. These Guidelines are based on accepted position that the water is both a social and economic good, and aims at delivery of sustainable services for all consumers and users of water, taking into account affordability of rural population (AfDB, 2010, p. 33).

Determining the affordability for the water and wastewater services for local community households the "affordability ratio" needs to be evaluated, which is presented with the ratio of a household average annual cost of water and wastewater services and their income, *e.g.* MHI (median household income). Combined average annual water and wastewater bill less than 4.5% (2.5% for water and 2.0% for wastewater services) of the local area MHI could be considered to be affordable according to EPA Affordability Guidance, even though the MHI is not fully accurate indicator of the local community well-being (Cuppett *et al.,* 2016).

The International Benchmarking Network for Water and Sanitation Utilities (IBNET) provides the most comprehensive list of performance indicators on water and sanitation utilities, including the affordability, with their IBNET blue book (Danilenko *et al.,* 2014, pp. 8-21), while Stephen accentuates the need to select specific and measurable indicators for rural water systems (Stephen, 2000, p. 360).

At the same time research on rural water supply systems in Bosnia and Herzegovina is extremely limited. *Analysis of the Legal and Institutional Framework for Local Community Water Supply* (Vučijak, 2013, pp. 11-20) found that in accordance to the entity and cantonal laws on local self-governance and the laws on communal affairs, the local self-governance units (municipalities and cities) are responsible for water supply services for local population in the whole municipal territory. However, in practice this responsibility is generally exercised well in urban and sub-urban areas

and poorly in rural areas. Very few municipalities have attempted to improve water supply in rural areas by introducing management rules for rural water schemes. Largely, the management of these schemes is not under control of local self-governance units and they often operate in informal realm.

A recent policy study *Water Supply in Rural Areas of Bosnia and Herzegovina: Key Issues and Recommendations for Improvements* (Mišić Mihajlović *et al*., 2017, p. 66) identified five types of management models in the rural water supply provision.

The five operators are: (i) public utility company; (ii) local community board; (iii) private company; (iv) group of citizens; and (v) public administration body. The study defined a set of recommendations for all levels of government promoting a more systematic approach to rural water supply funding and supervision.

This paper builds upon the existing research results, analyzing the data on BiH rural water supply operators and proposing a set of key performance indicators for consistent monitoring of the outcomes of all efforts invested in improved rural water services.

3. Research methodology

Data on rural water supply are not systematically collected in BiH. Hence, this research started with conducting the initial screening of data available in local administrations (The research was conducted within the project "Right to safe and affordable drinking water for all" supported by European Union and project "Serving those beyond utility reach in the Danube Region" supported by the World Bank).

A questionnaire with basic questions about water supply characteristics (such as the population coverage with urban and rural schemes, local acts that regulate the service provision, administrative resources allocated to the water supply sector) was sent to even 73 local administrations, what is about 50% of the total local administrations in the country, taking care of the representation of municipalities and cities of different size and different location in the geographic and administrative parts of BiH. In total, 48 local administrations filled in the questionnaire, which is 33% of the total number of local administrations in BiH, what makes this sample representative for both BiH entities. The population size within the sample is 1,640,905, which

makes 43% of the total population in the country (according to the Census 2013 data). The questionnaires contained the data about 119 rural water supply systems which provide water for 302,621 inhabitants.

In order to make an in-depth analysis of the operation, decision-making and outcomes of the water supply services, 20 cases were selected out of the 119 systems, on the basis of the following criteria: size of the system (number of connected households), age of the system, transparency in the tariff setting, and accountability of the water supply operator towards the local authority or a community body (upward or downward accountability). The multicriteria scoring system, where each criterion was scored on the scale 0-100, is presented in the Table 1.

Primary data collection was conducted by screening the 20 selected rural water supply systems using structured interviews with local governments, service operators and 600 households. For the household survey, 30 households were randomly selected in each location.

Table 1. *Criteria and scoring system for case study selection*

Criterion	Description	Scoring system (0 to 100)
Size of the system/ number of connected households	Scoring is defined under assumption that bigger systems require more complex management structures	< 1000 households : Score = number of connections / 10; > 1000 households: Score = 100.
Age of the system	Based on longer tradition, older systems are more likely to function successfully at least in one management aspect	Age difference between the youngest (2015) and oldest system (1884) is 132 years. Score = number of years of the system x 100/132
Transparency in the tariff setting	A transparent way of tariff-setting, based on adopted Act, is a feature of responsible management	Score = 100 if there is the Act; Score = 0 if there is no Act
Accountability of the water supply operator (upward or downward accountability)	Water schemes which show upward accountability are subject to a more rigorous oversight, they function in a more sustainable way and provide better services	Score = 100 if there is oversight by the local authority; Score = 50 scores if there is oversight by a community body; Score =0 if there is no oversight at all

Source: Authors' research

Collected data were triangulated to identify the set of indicators for monitoring of the rural water services performance. The quantitative data from the operator and household surveys were stratified by five types of operators and analyzed using descriptive statistics. Then, the quantitative survey data were analyzed against the secondary data collected through desk review in order to gain understanding on the most applicable set of performance indicators for rural water supply systems in the BiH context.

The main limitation of the analysis was the lack of former measurements, *i.e.* lack of the consistently measured data on operation of the rural water supply systems in BiH, so no historical comparison was possible. To date, data were collected only once, which can be considered as a baseline state. In future, progress tracking, comparisons between different systems and adaptations of the selected performance indicators will be possible only on the basis of the time series data.

4. Research findings and discussion

4.1. Performance indicators of the rural water supply systems

In accordance with categorization of performance indicators for rural water supply systems proposed by Stephen (2000), this paper describes a set of indicators collected for the 20 case studies.

The proposed list of indicators comprises of the relatively small number of parameters, which should be easily understood and measurable within existing human and financial resources in administrations. In order to introduce the simple and effective reporting system, the eleven proposed performance indicators, grouped into the following three categories, are proposed:
A. *Service performance indicators:*
- Population coverage by water services (%) = (number of the inhabitants connected / total number of inhabitants in the area within reach of the water supply system) x100
- Water supply reliability (%) = (average number of hours of water availability per day /24 hours) x100
- Water quality (#) = average values of selected water quality determinants in the water quality tests (in this research the most characteristic were results for E. Coli) , # = number
- Water quality perception (#) = average grade of water quality given by surveyed households

- Total operational expenses per connection (BAM/connection)
- Minor repair expenses per connection (BAM/connection)
- Replacement of assets expenses per connection (BAM/connection)
- Affordability of the water tariff (%) = (water invoice / total household income) x 100

C. Accountability indicators:

- Frequency of the operators' reporting (#/year) = number of operational reports that operators submit to the local or higher level authorities
- Frequency of the financial reporting (#/year) = number of financial reports in the last fiscal year submitted either towards the relevant authorities or towards the users
- Transparent financial reporting (%) = number of financial reports made public / total number of financial reports made in the last fiscal year x 100

In terms of *service performance*, the baseline data for 20 cases show that 6 operators cover all, while the others cover 49%-97% of the households in their areas. In 3 cases it was not possible to measure the population coverage since operators do not keep track of the population size.

Related to reliability, operators do not experience major problems that cause long service downtimes; only 2 cases reported water supply reliability lower than 100%. The biggest problem in this category is regarding the water quality tests where only 6 operators could show recent micro-biological testing results. The others do not perform water tests at all or they did it long time ago. Operators did not report any action in cases when water quality does not meet the standards. Despite this, the households' perception of the water quality is relatively high; the grades fall in range 2.53 – 4.88 (mean: 4.05). This finding implies low expectations of citizens for the drinking water quality.

The measurements for *financial health indicators* are problematic due to the lack of any financial records (in 4 cases) or due to non-standardized book-keeping (remaining 16 cases). *E.g.* in the systems managed by public utility companies, the total operational expenses for a particular rural system could not be calculated separately from the rest of the system.

Therefore, these indicators show unrealistic values. The biggest problem in financial data is related to the lack of data for replacement of assets expenses

(only 3 operators reported the data). Affordability is the indicator that requires special attention and it is elaborated in detail in chapter 4.2.

Accountability indicators show that majority of operators (11 cases) submit only one operational report per year, while 2 of them do not report at all. Data in the reports vary significantly from case to case; water quality and financial data are not regularly reported upon. Annual financial reports for the last fiscal year were made by 15 operators and 14 of them publicized the reports.

4.2. Affordability of water services in rural areas of Bosnia and Herzegovina

Very relevant indicator for assessment of sustainability of water services provisions is affordability for these services. Affordability relates to population capacity to pay intended or existing level of water invoices. The most convenient method for measuring this indicator is to compare (evaluate ratio of the) monthly invoice for a family with their total monthly income from all sources.

In BiH practice most often it is considered that the value of this indicator should not be higher than 4%, thus the participation of water supply and sewerage costs are limited to 4% of the family income. The other approach presented in the literature (*e.g.* in IBNET blue book, Danilenko *et al.,* 2014, pp. 19-20) is to calculate total income per user served as proportion of Gross National Income per capita (GNI). It is not easy to get information on all sources and levels of income for average family, while GNI records are available per municipality, thus the other option is often used.

Table 2. Baseline measurements of the key performance indicators in 20 case studies

No.	Managed by	Service performance indicators				Financial health indicators			Accountability indicators		
		Population coverage (%)	Water supply reliability (%)	Water quality (results for E. Coli) (#)	Water quality perception (#)	Total operational expenses per connect. (BAM)	Minor repair expenses per connect. (BAM)	Replacement of assets expenses per connection (BAM)	Frequency of operators' reporting (#/ year)	Frequency of financial reporting (#/ year)	Transparent financial reporting (#/ year)
1	Public utility company	100.00%	100.00%	2	4.41	93.75	9.38	n/a	1	1	100.00%
2		80.05%	100.00%	2	3.83	3522.27	22.05	n/a	12	1	100.00%
3		n/a	100.00%	n/a	4.39	2673.13	22.94	n/a	12	1	100.00%
4		88.50%	100.00%	n/a	3.89	1.50	1.50	n/a	3	0	0.00%
5	Local community board	100.00%	100.00%	n/a	3.36	17.78	17.78	n/a	1	1	100.00%
6		88.49%	100.00%	n/a	4.43	78.06	13.01	14.45	1	1	100.00%
7		48.89%	100.00%	n/a	3.81	35.96	13.48	n/a	1	0	0.00%
8	Private company	n/a	100.00%	n/a	3.97	163.93	8.20	n/a	12	1	100.00%
9		66.25%	100.00%	n/a	4.16	n/a	n/a	1.89	3	1	100.00%
10		100.00%	100.00%	n/a	4.68	95.24	3.17	23.59	1	1	100.00%
11		100.00%	100.00%	n/a	4.48	15.66	n/a	n/a	0	1	100.00%
12		96.97%	100.00%	n/a	4.13	62.50	n/a	n/a	1	1	100.00%
13	Group of citizens	67.23%	100.00%	n/a	2.53	11.50	2.50	n/a	1	1	0.00%
14		83.85%	83.33%	2	4.30	166.58	8.60	n/a	1	1	100.00%
15		57.89%	100.00%	n/a	4.30	n/a	n/a	n/a	0	0	0.00%
16		80.77%	100.00%	1	4.88	39.52	0.20	n/a	6	1	100.00%
17		100.00%	75.00%	n/a	3.01	n/a	n/a	n/a	1	1	100.00%
18		n/a	100.00%	n/a	3.58	10.00	2.50	n/a	1	1	100.00%
19	Public administration body	90.88%	100.00%	2	4.43	n/a	n/a	n/a	1	0	0.00%
20		100.00%	100.00%	1	4.46	n/a	0.71	n/a	3	0	0.00%

Source: Authors' research

The absence of actual, and truly needed research of the payment abilities within the rural areas and particularly identification of population categories in real need for support to pay their utility bills in BiH has been replaced in practice by a general attitude in local communities, even for the public water supply services in central areas, that the overall population is poor and thereby cannot afford to pay higher bills. For rural areas it sometimes leads to only occasional and irregular payments for damage repairs (and eventually for electricity costs, where the system is not based on gravity), but without long-term financing availability for investment maintenance, leading to deterioration of the systems. Real affordability assessment and adjustments of the water supply system to the results of this assessment, accompanied with the subsidy system for those in real need, would make much more sense in securing long-term sustainability of these services provision.

This research included collection of data on average family income and average monthly invoice. Even though it is not known to what level of consumption such invoice relates (could be excessive), so as responses were often lacking on either income or invoice, below table 3 could be developed. Affordability was evaluated based on only those responses with given data on both income and invoice level, average of both is calculated where at least four responses were given, after that affordability is evaluated as ratio of average invoice and average income. It is notable that in 3 cases reported level of monthly invoice is quite high and could be related to more than just water supply service, what makes it completely unaffordable. For other cases affordability rate is between 0.84% and 4.78%, average of 2.80% only for those other cases is relatively high compared to public water utilities in central municipal zones (average for all cases would be very high with 5.65%).

Table 3. *Baseline evaluations of the affordability indicator in 20 case studies*

No.	Aver. income (BAM)	Aver. invoice (BAM)	Afford-ability	Sample size	No.	Aver. income (BAM)	Aver. invoice (BAM)	Afford-ability	Sample size
1	827.44	26.13	3.16%	16	11	n/a	n/a	n/a	1
2	602.61	21.91	3.64%	23	12	525.00	13.31	2.54%	16
3	802.08	26.96	3.36%	24	13	571.67	97.06	16.98%	18
4	n/a	n/a	n/a	0	14	1,290.91	10.82	0.84%	11
5	508.00	97.00	19.09%	5	15	755.71	18.14	2.40%	21
6	1,262.22	29.56	2.34%	18	16	n/a	n/a	n/a	0

7	821.33	30.20	3.68%	15	17	567.37	85.00	14.98%	19
8	978.57	22.57	2.31%	7	18	1,275.00	22.50	1.76%	4
9	n/a	n/a	n/a	1	19	482.31	23.08	4.78%	13
10	n/a	n/a	n/a	0	20	672.31	19.08	2.84%	13

Source: Authors' research

5. Conclusions

The research findings indicate that the performance of BiH rural water supply does need attention. In accordance to the valid laws, the operators are subject to monitoring and regulation by public bodies (local authorities, inspections or water agencies). But, neither the oversight function is consistently exercised by the responsible bodies, nor the aspects reported by operators are standardized. Important information is often missing in the reports, *e.g.* the population coverage or the water quality, and financial data are not presented in all operators' reports. Monitoring and the oversight are particularly patchy in the systems managed by citizen groups and local communities.

In terms of service performance of the rural water supply systems, the water quality indicator appears to be the biggest problem. Irregular water testing by majority of operators is accompanied with lack of proper action in cases when drinking water does not meet the standards. Financial health of the observed systems was not assessable due to the lack of or incomplete financial records. Evaluated affordability shows high participation of water supply invoices in the possible monthly expenditures (income), leaving quite limited space for introducing proper waste water services too.

Local authorities are recommended to create databases of all rural water supply systems in their territories and to standardize the reporting requirements using at least the performance indicators suggested with this paper. The presented set of key performance indicators is considered to be the most appropriate for both, operators and local authorities, to monitor the quality of water services in rural areas and to guide needed improvements. At the same time, the defined indicators should improve monitoring of the country's progress in achievement of the SDG 6 target.

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REVEALED COMPARATIVE ADVANTAGE AND COMPETITIVENESS: EVIDENCE FOR MACEDONIA VIS-À-VIS THE EUROPEAN UNION

OTKRIVENA KOMPARATIVNA PREDNOST I KONKURENTNOST: MAKEDONIJA VIS-À-VIS EUROPSKE UNIJE

Abstract

Trade integration is an essential component of Macedonia's economic development and the role of the European Union (EU) in supporting such process is crucial, given the importance of the EU member states for the country's foreign trade. The EU has encouraged this deepening through an active trade policy, including the Stabilization and Association Agreement (SAA) that provides for the creation of a free trade area between the Union and Macedonia. The latter was granted candidate status for EU membership in 2005. The relative competitiveness will therefore play a key role in determining changes in trade patterns and flows between the country and the member states. There is no doubt that the candidate countries will not be able to exploit the benefits of integration unless they have products and companies to withstand the market competition. Hence, the external competitiveness per se has become a more salient issue than ever before, while improving competitiveness is important in terms of EU accession.

This paper aims to discover whether Macedonia is in the process of extending the products in which it has trade potentials, as opposed to a situation in which the number of products that can be competitively exported is static. More specifically, it examines the sectoral specialization and competitiveness of the country, in relation to that of the EU/28, using four indices of revealed comparative advantage over the years 2000-2015.

The statistical findings (mean and coefficient of variation) for the four indices indicate that comparative advantage are mainly achieved in primary products and few manufactures, which corresponds to the level of economic development, the availability of natural resources and the price of production factors (labour). In other words, change in the composition of exports remain slow, with limited progress towards higher value added products over the last few years.

Sažetak

Trgovinska integracija je bitna sastavnica gospodarskog razvoja Makedonije, dok je uloga Europske Unije (EU) u podržavanju takvog procesa ključna s obzirom na važnost država članica EU za vanjsku trgovinu zemlje. EU je potakla to produbljivanje kroz aktivnu trgovinsku politiku, uključujući Sporazum o stabilizaciji i pridruživanju (SSP), koji predviđa stvaranje područja slobodne trgovine između Unije i Makedonije. Potonja je dobila status kandidata za članstvo u EU u 2005. Stoga će relativna konkurentnost igrati ključnu ulogu u određivanju promjena strukture i tokova trgovine između zemlje i država članica. Nema sumnje da zemlje kandidatkinje neće moći iskoristiti prednosti integracije, osim ako imaju proizvode i tvrtke sposobne izdržati tržišno natjecanje. Dakle, vanjska konkurentnost je, sama po sebi, postala značajnija više nego ikada prije, dok je poboljšanje konkurentnosti važno u pogledu ulaska u EU.
Ovaj rad ima za cilj otkriti je li Makedonija u procesu proširenja proizvoda u kojima ima trgovinske potencijale, za razliku od situacije u kojoj je broj proizvoda koji se mogu konkurentno izvesti statičan. Konkretnije, rad razmatra sektorsku specijalizaciju i konkurentnost zemlje u odnosu na EU/28, koristeći četiri indeksa otkrivene komparativne prednosti u razdoblju 2000-2015.
Statistički pokazatelji (srednja vrijednost i koeficijent varijacije) za četiri indeksa pokazuju da se komparativna prednost uglavnom postiže u primarnim proizvodima i nekoliko industrijskih proizvoda, što odgovara razini gospodarskog razvoja, dostupnosti prirodnih resursa i cijeni faktora proizvodnje (radne snage). Drugim riječima, promjena u sastavu izvoza i dalje je spora, s ograničenim napretkom prema proizvodima s većom dodanom vrijednošću tijekom posljednjih nekoliko godina.

1. Introduction

How to predict international trade flows is one of the most important issues in economic theory. Traditional trade theory (Ricardo, Heckscher-Ohlin) describes trade specialization patterns by focusing on distinctive characteristics of each country, which give rise to relative cost differences, termed 'comparative advantage'. In this context, Ricardo's model finds that international differences in labour productivity are the only reason for cross-country differences in comparative production costs. On the other hand, the Heckscher-Ohlin theory explains the trade specialization patterns based on differences in factor endowments and intensities. Although the advent of the 'new trade theory' in the 1980s ascribed comparative advantage and economies of scale equal importance as explanations of why countries trade, "as far as trade flows prediction between similar and different (in factor endowments or technology) countries is concerned, comparative advantage is still the main theoretical explanation" (De Benedictis & Tamberi, 2001, p. 3). Countries will essentially specialize in and become net exporters of goods in which they have a comparative advantage.

The theoretical ground for detecting the good or industry in which a country has a comparative advantage has been provided by observing the sign of the difference between autarkic and free trade relative prices (Deardorff, 1980). The main problem arises when we move from theory to measurement of comparative advantage since the relative autarkic prices are not observable variables. To overcome this obstacle, it has become an empirical convention to measure comparative advantage using available post-trade data and analyse specialization patterns of countries by Revealed Comparative Advantage (RCA) measures.

Balassa (1965) outlined this problem as follows: "Comparative advantages appear to be the outcome of a number of factors, some measurable, others not, some easily pinned down, others less so. One wonders, therefore, whether more could not be gained if, instead of enunciating general principles and trying to apply these to explain actual trade flows, one took the observed pattern of trade as a point of departure". Although several efforts have been made to connect RCA to the theory of comparative advantage, the typical approach is to compare national sectoral shares with their international equivalents and to identify the underlying pattern of comparative advantage by examining the actual output and/or trade flows. The implication of this

approach is that there can be as many RCA indices as there are combinations and transformations of the variables (production, trade sectoral data) used to infer comparative advantage (Vollrath, 1991).

De Benedictis and Tamberi (2004) have additionally raised the independence issue of measurement from theory by referring to the literature on overlapping-generations (Galor, 1992; Mountford, 1998) and oligopoly theory (Cordella, 1998). The findings suggest that even if autarkic relative prices were observable they might not predict true comparative advantage. Moreover, it is "demonstrated by Deardorff (1980) that there is a negative correlation between net exports and relative autarkic prices under relatively general conditions" (Sanidas & Shin, 2010, p. 10), which leads to the conclusion that, while comparative advantage cannot be precisely measurable, indices based on post-trade observations may 'reveal' much more about the patterns of comparative advantage (Ballance, Forstner & Murray, 1987).

Considering the aforementioned, this paper attempts to examine Macedonia's relative competitiveness and compare the structure of the country's trade specialisation vis-à-vis the EU. To that end, several alternative specifications of revealed comparative advantage (RCA) will be included in the analysis conducted here. Since this manuscript is focused on assessing Macedonia's competitiveness within the European context, we have opted for computing RCAs with the EU as comparator, but taking into account the total, instead of bilateral trade flows. Macedonia has filed its candidature to become an EU member state.

Preparing the country for accession will require addressing its specific competitiveness weaknesses, providing a sense of the challenges it currently faces and evaluating the extent to which the country will likely contribute to overall European competitiveness. The evidence shows that transition economies, including all the 'new' EU member states and the Western Balkan candidates have met the first Copenhagen economic sub-criterion of being functioning market economies. Nevertheless, there are much larger differences among them around the second economic sub-criterion, *i.e.* the capacity to cope with the competitive pressures of the single EU market.

Macedonia is therefore less troubled by transforming the country into a functioning market economy, but will have considerably more problems making its economy fit for the effective competition on the enlarged EU market (MoFRM, 2009). Hence, this work aims to contribute new knowledge

in different ways both to the recent literature and policy discussions on measures for attaining export expansion and steady convergence of the Macedonian economy.

The rest of the paper is organized as follows. Section 2 provides a selective review of the literature on the topic being discussed. Section 3 outlines our approaches to measuring revealed comparative advantage. Results for Macedonia are discussed in section 4. Section 5 concludes and recommends.

2. Selected literature review

The prior discussion may be applied in exploring the real cases, in view of some notable studies which have employed the concept of revealed comparative advantage.

Yue (2001) uses the revealed comparative advantage indices to demonstrate that China has changed the export strategy to coincide with the law of comparative advantage. The author also points to the distinct differences in export patterns between the coastal- and the interior region. Additionally, Bender and Li (2002) investigate the structural performance and shift of exports, as well as the revealed comparative advantage of Asian and Latin American regions over the selected time period.

The authors perform a two-sided analysis both to examine the existence of related changes in export pattern among different regions and, using RCA indices, to verify if those changes are related to shifts in comparative advantage between regions.

Kaitila (2001) examines trade between Central and Eastern European (CEE) countries and the EU for the period of 1993-1998. Among the other methods, the author calculate the revealed comparative advantage of CEE countries in the EU internal market and estimates the results in a two-dimensional space showing relative labour-skills and capital-intensity. The results point to quite diverse developments of the comparative advantage among various CEE countries.

Fertö and Hubbard (2003) investigate the competitiveness of Hungarian agriculture in relation to that of the EU by employing four indices of revealed comparative advantage, for the period 1992 to 1998. The consistency test of the indices as cardinal measures is based on the correlation coefficient

between paired indices in each of the seven years, and suggests that they are useful in identifying the demarcation between comparative advantage and comparative disadvantage.

Despite the fact that they are not consistent as cardinal measures of comparative advantage, RCA indices provide a useful guide to underlying comparative advantage and offer a further insight into the competitiveness and the implications for trade.

Recently, we have witnessed a renewed interest in empirical work of comparative advantage. Amighini, Leone and Rabellotti (2011) examine the evolution of specialization patterns for the Italian provinces by investigating dynamics of the sectoral distribution in the Balassa RCA index. The findings point to a stable international specialisation patterns just for few provinces, whilst majorities reveal the evidence of decreased specialisation. There is also a higher average degree of persistence for what they define as district provinces, but no systematic differences exist between provinces with or without industrial districts.

Bojnec and Fertö (2015) explore the competitiveness of agri-food exports of the EU countries on global markets using the revealed comparative advantage index over the period 2000-2011. Panel unit root tests, mobility index and the Kaplan-Meier survival rates of the index are employed. The authors conclude that the majority of agri-food products in the EU27 countries exhibit a comparative disadvantage on global markets. Most of the old EU15 Member States enjoyed a greater number of agri-food products having an extended duration of revealed comparative advantage than most of the new EU12 Member States.

Finally, Sawyer, Tochkov and Wenting (2017) use data from input-output tables to assess the comparative advantage of Chinese provinces in the three main economic sectors over the period 1992-2007. The authors construct not only indices of RCA for overall trade, but also bilateral indices for interprovincial trade. The results show that West and Central China have a comparative advantage in agriculture/mining, coastal provinces in manufacturing, and metropolitan provinces in services. Nonetheless, interprovincial trade exhibits a more complex pattern. Regression analysis recognizes labor endowments as the key determinant of comparative advantage in total trade, while physical capital is the driving force behind domestic trade.

3. Methodology for measuring the revealed comparative advantage

The concept of revealed comparative advantage (RCA) is a commonly used approach to identify a country's weak and strong sectors. As previously stated, there can be as many RCA indices as there are transformations and combinations of the variables used to infer the existence of comparative advantage from actual data (Vollrath, 1991). In fact, the independence of measurement issues from underlying theory provides a certain degree of freedom in the selection of a specific RCA index to be used in applied research, but it also entails a higher awareness of the implications related to the concrete selection.

Although Liesner (1958) was the first to contribute the empirical research of RCA, the advanced and most frequently employed measure of RCA, as already emphasized, was the one popularized by Balassa (1965). Given the reference area, the Balassa RCA index essentially estimates the normalized export shares, such that normalization concerns the exports of the same commodity (or industry) in the reference area.

Thus, if X represents exports, i is a country, j is a commodity (or industry), t is a set of commodities (or industries) and n is reference area (set of countries), then the country i's Balassa index of RCA (B), for a commodity (or industry) j, equals:

$$B = (X_{ij} / X_{it}) / (X_{nj} / X_{nt}) = (X_{ij} / X_{nj}) / (X_{it} / X_{nt}) \qquad (1)$$

If $B >$, the country i is said to 'reveal' a comparative advantage in commodity (or industry) j, since the particular commodity/industry is more important for the country i's exports than for exports of the reference area. On the contrary, if $B \leq 1$, the country is considered to have a comparative disadvantage in the commodity (or industry).

While the above formula provides some insights into a country's international competitiveness, the Balassa index is biased as it fails to capture the demand side by considering imports especially when the country-size effect is significant (Greenaway & Milner 1993).

Therefore, it implies possible over- or under-estimation of any underlying comparative advantage or disadvantage. Vollrath (1991) has attempted to advance the application of revealed comparative advantage through the

development of three alternative measures. The first specification, commonly known as the relative trade advantage (*RTA*), accounts for the import side of trade flows along with exports. It is expressed as a difference between relative export advantage (*RXA*), which equals the original Balassa index (*B*), and the relative import advantage, (*RMA*):

$$RTA = RXA - RMA \tag{2}$$

where

$$RXA = B = (X_{ij}/X_{it})/(X_{nj}/X_{nt}) = (X_{ij}/X_{nj})/(X_{it}/X_{nt}) \tag{3}$$

while

$$RMA = (M_{ij}/M_{it})/(M_{nj}/M_{nt})] \tag{4}$$

where *M* stands for imports. Hence,

$$RTA = \left[(X_{ij}/X_{it})/(X_{nj}/X_{nt})\right] - \left[(M_{ij}/M_{it})/(M_{nj}/M_{nt})\right] \tag{5}$$

It should be noted that Vollrath's *RXA* differs from Balassa index, *B*, in that (a) it prevents from the possible double-counting (the country's or commodity's/industry's); and (b) it is predominantly global in nature, viz. it accounts for all traded goods and all countries, instead of subsets. Given that we are interested in the competitiveness of Macedonia within the European context, the indices computed in this paper have a combined structure, in that the set of commodities (or industries), *t*, refers to all trade, but the reference area, *n*, is restricted to the EU as the comparator. Double-counting is not avoided, but does not incite a problem mainly for two reasons, that is (a) the reasonably low level of commodity aggregation used here; and (b) the fact that Macedonia has not yet become an EU member state.

The second RCA measure (ln *RXA*) of Vollrath stands for a logarithm of the relative export advantage:

$$\ln RXA = \ln B \tag{6}$$

The third, more comprehensive indicator, developed by Vollrath, is the revealed competitiveness, *RC*, defined as:

$$RC = \ln RXA - \ln RMA \tag{7}$$

Symmetry about the origin (in a Cartesian coordinate system) is a clear advantage of the indices presented in logarithmic forms. If Vollrath's three measures (*RTA*, ln*RXA*, *RC*) exceed 0, the country *i* is said to have a comparative/competitive advantage in commodity (or industry) *j*.

When it comes to employing these and similar RCA indices based on observed trade patterns, government interventions (*e.g.* import restrictions, export subsidies, *etc.*) may impose problems for interpreting the underlying comparative advantage. Fertö and Hubbard (2003) use nominal assistance coefficients (NACs) for Hungary and the EU as a measure of government support to agriculture estimated by OECD (1999).

Greenaway and Milner (1993) recommend the advantage of a price-based measure of RCA termed 'implicit revealed comparative advantage' (IRCA) to take away the distortions triggered by the post-policy intervention. Although, problems with trade-distorting effects of government interventions may not be completely mitigated, the four RCA indices, when interpreted with caution, are still considered to be a valuable instrument for identifying the comparative and competitive advantage of a certain country.

As a matter of fact, Vollrath's (1989) research points to the fact that "the most competitive agricultural exporters are often the least protected… Protection in the form of government intervention may enhance competitiveness in the short run… The EC-10, the United States, Brazil, Australia, and Canada were used to compare revealed agricultural competitiveness and agricultural producer subsidy equivalents…. The EC-10 has the highest level of government intervention, and it alone among the major agricultural exporters operates with a revealed competitive disadvantage in agriculture". This may indicate the potentials for increased competitiveness of the product groups that already have a comparative advantage should the markets become further liberalised.

4. Data and empirical findings

Given the above detailed explanation about the contribution of Balassa and Vollrath, as well as the usefulness of RCA indicators in giving a proper information with regard to comparative advantage, we employ the four indices both for getting an insight into international competitiveness of the Macedonian economy and assessing the possible implications for trade when the country is scheduled to become an EU member state.

With the aim of calculating the indices, we have used annual two-digit Standard International Trade Classification (SITC) Rev. 3 data (63 product groups). In fact, the need is to select an appropriate level of aggregation for estimating patterns and evolution of RCA indices.

Higher level of dis-aggregation is not suitable in all cases, as it would result in separating the products that essentially belong to the same industry and thus, we may run the risk of losing the economic meaning of the groups employed. Hence, we have opted for two-digit level of aggregation to calculate RCA measures as it appears the most appropriate for answering the research issues, *i.e.*: 1) to characterize and establish the trends and patterns of specialization; 2) to discover whether the country has managed to gradually shift towards higher value-added categories, and not if it has diversified the production base within already established sectors, which certainly requires the higher level of disaggregation.

Since the coefficients are mostly dependent upon the percentage share of the particular product group in the total exports or imports, we have opted to exclude the products pertaining to the 9th sector (commodities and transactions not classified elsewhere in the SITC) in order to obtain a more accurate estimates. The analysis covers a sixteen-year period (2000-2015; 2016 data is missing for EU/28) and includes data for exports and imports of Macedonia and EU/28 obtained from the country's National Bank and the UN Comtrade (a total of 63x16x2x2 = 4,032 records).

The statistical findings (mean and coefficient of variation) for the four indices exhibit similar patterns, and according to their common characteristics, they point to revealed comparative advantage for 10 product groups: vegetables and fruit; beverages; tobacco and tobacco manufactures; hides, skins and furskins, raw; oil-seeds and oleaginous fruits; crude fertilizers, other than those of division 56, and crude minerals (excluding coal, petroleum and precious stones); metalliferous ores and metal scrap; iron and steel; articles of apparel and clothing accessories; and footwear (Table 1).

The results also suggest that there is relationship between RCA values and the shares of product groups in total exports. In other words, the product groups that reveal comparative advantage are generally found among the leading export sectors of Macedonia – they account for an average 58.11% of total exports during the period taken into consideration (2000-2015).

Since we are interested in competitiveness of Macedonia with respect to EU as a comparator, we aim at making additional research to examine how harmoniously the country performs relative to EU/28. Hence, we make an analysis for the shares in total exports of the ten product groups revealing

a comparative advantage, which, on average, account for 58.11% of total Macedonian exports during the sixteen-year period. Additionally, we make a comparison with the particular product groups share in total exports of EU/28 (Figure 1).

The results show that Macedonia's production is not focused on product groups which dominate the European exports. Additionally, Macedonia's shares in total exports are higher in those product groups that reveal much lower shares in EU/28 exports. This certainly points to somewhat poor near-term export prospects for the Republic of Macedonia.

In order to look at differences across sectors, evaluate the quality of trade and link specialization developments to most prominent sources of comparative advantage we will further consider a classification of products according to factor intensity compiled by Hinloopen and van Marrewijk. This is based on UNCTAD/WTO classification using SITC Rev. 2 codes and distinguishes between the five main groups of sectors at the 3-digit level (Hinloopen & Van Marrewijk 2008).

Table 1. *Revealed comparative advantage of Macedonia vs. EU/28,*
by product group and index, 2000-2015

Commodity code + Commodity		Mean				Coefficient of Variation			
		B	RTA	ln RXA	RC	B	RTA	ln RXA	RC
Revealed comparative advantage if:		> 1	> 0	> 0	> 0				
05	Vegetables and fruit (primary products)	6.37	5.51	1.83	1.98	18.84	22.07	10.81	11.66
11	Beverages (primary products)	1.92	0.34	0.59	0.16	32.26	255.73	64.22	344.16
12	Tobacco, tobacco manuf. (primary products)	17.53	14.76	2.83	1.84	26.29	30.66	9.69	17.75
21	Hides, skins, furskins, raw (primary products)	2.14	0.84	0.56	0.39	69.14	171.50	113.05	148.05
22	Oil seed, oleaginus fruit (primary products)	1.64	1.17	0.40	1.18	49.94	69.13	114.06	43.39
27	Crude fertilizer, mineral (primary products)	4.27	3.28	1.43	1.47	20.26	26.52	13.75	19.15
28	Metalliferous ore, scrap (primary products)	4.09	3.02	1.30	1.53	40.77	41.82	41.45	48.96
67	Iron and steel (human-capital intensive products)	8.45	5.01	2.12	0.92	17.41	28.74	8.04	26.88
84	Clothing and accessories (unskilled labor-intensive products)	13.43	13.17	2.57	3.97	23.42	23.80	9.53	8.90
85	Footwear (unskilled labor-intensive products)	4.72	4.14	1.53	2.08	21.90	24.48	15.01	10.93

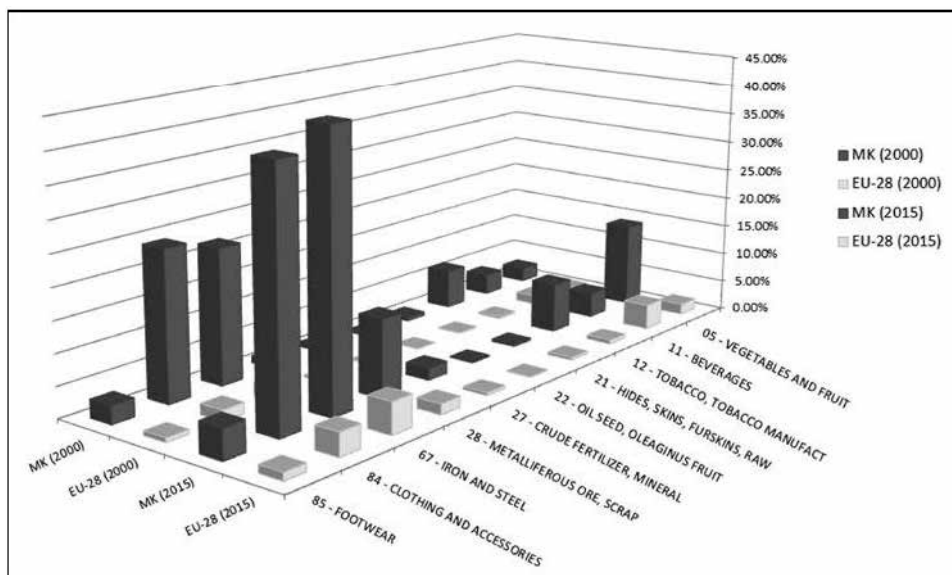Source: Authors' calculations based on SITC data at two-digit level

Figure 1. *How "harmonious" are the Macedonian and the EU/28 exports? Shares in total exports (product groups with RCA)*

Generally, the SITC has been developed by the United Nations with the intention of classifying traded products not only on the basis of their physical and material properties, but also according to stage of processing and their economic functions in order to ease the economic analyses. It is therefore a preferred classification for the analysis of comparative advantage by factor intensity. Nevertheless, the switch from SITC Rev. 2 to our Rev. 3, 3-digit codes led to the creation of many new industry categories. To maintain a consistent set of SITC industries over the sample period, we aggregate industries from the three-digit to two-digit level.

By following this approach, we have actually supported the mentioned need to exclude the 9th section from the analysis as the difference of four articles between the two revisions at 2-digit level refers only to this section.

The results show that comparative advantage are achieved predominantly in primary products and few manufactures (human-capital intensive and unskilled labour-intensive products), which corresponds to the level of economic development, the availability of natural resources and the price of production factors (labour). The export structure based on these product

groups is not a long-term solution. The prices of primary products can be relatively unstable and also exhibit a long-term downward trend. The mineral resources can be exhausted and agricultural production is most heavily affected by the climatic factors.

The comparative advantage here can get easily lost: the ore stocks are limited, while the costs of exploitation determine the price competitiveness; finally, the exports of textile and apparel industry are highly dominated by imports for further processing, accounting for about 93% of the apparel production (Agency for Foreign Investment and Export Promotion of Macedonia 2014).

Thus, the Republic of Macedonia, even with certain restructuring in the overall composition of trade over the last years, mainly on account of foreign investment[1], is moving very slowly away from products requiring unskilled labour, low technology and significant resources (including primary products) (Orszaghova, Savelin & Schudel, 2013).

In other words, the majority of exports are still generated by products of low complexity (Kostoska & Mitrevski, 2016). This may certainly impose limitations to further growth taking into account the competition from Asia and some other low-wage regions.

5. Conclusions and recommendations

In a globalized economy, maintaining and improving competitiveness has become an increasing concern to countries around the world. This applies especially to EU candidate countries (*e.g.* Macedonia) whose potential to enhance competitiveness is significant in terms of EU accession, improved convergence and sustainable growth. This paper provides a comprehensive analysis of Macedonia's competitiveness with EU/28 as a comparator, using four indices of revealed comparative advantage (RCA) in the period 2000-2015. All four indices point to revealed comparative advantage for 10 out of 63 two-digit SITC product groups.

The findings also suggest that RCA product groups are generally found among the leading export sectors of Macedonia. In order to look at differences across sectors, estimate the quality of trade and link specialization patterns to most prominent sources of comparative advantage, we have also considered a classification of products according to factor intensity.

The findings suggest that comparative advantage are achieved mainly in primary products and few manufactures (human-capital intensive and unskilled labour-intensive products), which corresponds to the level of economic development, the availability of natural resources and the price of production factors (labour). In other words, change in the structure of exports remain slow, with limited progress towards higher value added products over the last few years, *i.e.* the share of iron and steel products, as well as of clothing in total exports have fallen somewhat, while chemicals and machinery and transport equipment became more important, mainly on account of foreign investors.

As to the future, the impact of EU accession on trade may be observed in two ways, such as: immediate impact happening around the EU entry and long-term implications starting before accession and continuing long afterwards. The immediate effects, reflected in greater foreign trade volume, are expected to be limited for Macedonia and mostly focused on agriculture.

This is quite important for the country taking into account the relevance of this sector for the country's economy and international trade. Hence, Macedonia has to make investment in food-processing and increase the quality of agricultural products to meet the EU standards. It will permit the country to generate higher value added by translating the agricultural commodities into competitive foodstuffs. Yet, one should emphasize that the benefits of EU accession are going to be distributed over a longer period of time beginning before accession and lasting long afterwards. This effect is mostly influenced by FDI inflows. However, it is exceptionally hard to precisely measure such effects since they are taking place progressively. Meanwhile, RCA indices, despite the limits, provide a useful indication both for the comparative advantage, the international competitiveness of the Macedonian economy and the possible implications for trade upon EU accession – all with the aim of propelling the stall into a tangible transition.

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Endnote

1   With foreign investors increasing production, the structure of exports has shifted somewhat towards the higher value added products, *i.e.* the export of spare parts for the car industry (within the seventh category - machinery and transport equipment) has actually boosted the growth of total exports. Machinery and transport equipment exports accounted for 24.7% and 6.3% of the total in 2015 and 2000, respectively.

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ECONOMIC DIPLOMACY IN CROATIA: MYTH OR NEED

GOSPODARSKA DIPLOMACIJA U HRVATSKOJ: MIT ILI POTREBA

Abstract

The aim of this paper is to analyze the system and model of economic diplomacy in Croatia, as well as recommendations for a more effective model and wider involvement of all interested groups. The authors that are studying economic diplomacy have refrained from defining the very term and emphasize that it is a discipline that is constantly changing and evolving. There is no universal solution or a unique model of economic diplomacy, but there are several frameworks through which the system is usually carried out.

The analysis presented in this paper was made using the desktop method. Relevant available documents, studies, books and scientific papers were analyzed and interviews were conducted with a dozen of major Croatian businessmen and their qualitative assessments of economic diplomacy in Croatia are summarized. The following theoretical models of economic diplomacy have been analyzed: a unified model, a partially unified model, a third agency model, a model of competition and a model of resignation. These models are presented through a comparative analysis on the case of Croatia, and in the concluding reviews and recommendations it is pointed to the key challenges ahead of Croatian diplomacy connected with economic breakthroughs in the future.

The results of the analysis indicate that there is still no consensus in Croatia on which body would be best suited to promote economic interests, whether commercial diplomats from the Ministries of Foreign and European Affairs and other ministries, county offices, cities and municipalities, the Croatian Chamber of Economy and the Croatian Employers' Association, commercial diplomats from other states and

associations. The overall conclusion is that in spite of the fact that entrepreneurs recognize the need for services provided by Croatian economic diplomacy, it is clear there is a need for stronger coordination of different bodies, especially when it comes to harmonizing domestic policies that could enhance the competitiveness of entrepreneurs on the foreign market.

Keywords*: economic diplomacy, models of economic diplomacy, entrepreneurs*

JEL: F5, F55, L26

Sažetak

Cilj ovoga rada je analiza sustava i modela gospodarske diplomacije u Hrvatskoj te preporuke za učinkovitiji model i širu uključenost svih zainteresirani skupina. Naime, autori koji se bave gospodarskom diplomacijom suzdržani su u definiranju samog pojama i naglašavaju da je to disciplina koja se neprestano mijenja i razvija. Ne postoji univerzalno rješenje odnosno jedinstveni model gospodarske diplomacije već postoji nekoliko okvira kroz kojih se sustav uobičajeno provlači.
Analiza prikazana u ovom radu izrađena je desk top metodom. Analizirani su relevantni raspoloživi dokumenti, studije, knjige i znanstveni radovi te su obavljeni razgovori sa desetak značajnijih hrvatskih gospodarstvenika i sažete njihove kvalitativne ocjene o gospodarskoj diplomaciji u hrvatskoj. Analizirani su slijedeći teorijski modeli gospodarske diplomacije: unificirani model, djelomično unificirani model, model treće agencije, model natjecanja i model prepuštanja. Ovi modeli su prikazani kroz komparativnu analizu na slučaju Hrvatske, te su u zaključnim razmatranjima i preporukama ukazano na ključne izazove koji će biti pred Hrvatskom diplomacijom a vezano za gospodarske iskorake u budućnosti.
Rezultati analize ukazuju da u Hrvatskoj još uvijek ne postoji konsenzus o tome koje bi tijelo bilo najprikladnije za promicanje gospodarskih interesa, da li komercijalni diplomati Ministarstva vanjskih i europskih poslova i ostalih ministarstava, uredi županija, gradovi i općine, Hrvatska gospodarska komora i Hrvatska udruga poslodavaca, komercijalni diplomati drugih država i udruge.
Opći je zaključak da je unatoč svemu od strane poduzetnika prepoznata potreba za uslugama koje im može pružiti hrvatska gospodarska diplomacija, no jasna je za jačom koordinacijom različitih tijela, osobito kad je riječ o usklađivanju domaćih politika koje bi mogle pojačati konkurentnost poduzetnika na inozemnom tržištu.

Ključne riječi*: gospodarska diplomacija, modeli gospodarske diplomacije, poduzetnici*

JEL: F5, F55, L26

1. Introduction

Economic diplomacy has been present since the very beginning of organizing social communities in political subjects (cities-states, kingdoms, empires, *etc*.), as a practical skill aimed at achieving the improvement of a particular society by negotiating on the conditions of trade in international trade. It has been scientifically studied more intensely in the last ten years. It consists of the following terms: economy and diplomacy, and by combining these two terms and with its synergy, it reveals a complex term that includes skilful international communication and negotiation (diplomacy), with the protection and promotion of its own economic interests (Žirovčić, 2012, p. 90).

Economic or trade affairs have always been an integral part of the diplomatic service, and trade was the main reason for crossing state borders and the conclusion of trade agreements between states. Historical sources confirm the existence of intense trade regulated by trade agreements between the civilizations of ancient Egypt and Western Asia in the 14th century BC. The European colonization of Asia and the discovery of the rich South American coastline have led to the flourishing trade in goods between the Old and the New World. It follows from these examples that trade was the cause of the first interstate relations and the conclusion of international agreements. Economic diplomacy gained special significance after the fall of the Berlin Wall, marking the end of the 'Cold War' during which, due to the situation on the world political scene and dividing east and west, economic diplomacy wasn't in the focus. Upon completion of 'Cold War', the conclusion of trade agreements became the main mechanism for strengthening political relations and creating security ties between the states.

Today, diplomatic practice is equally paying attention to both political and economic issues. Under the conditions of economic interdependence of countries, the economy in international relations imposes the direction, content and intensity of political relations between states. The main reasons why economic diplomacy has become more significant in the last fifteen years are:
- In most developed countries foreign trade and foreign investment, especially after II. World War, are increasing constantly in the share of the national GDP structure in relation to the share of domestic production;
- Adoption of economic reforms in the development processes of market-oriented economies of developing countries as well as growth-based development strategies have contributed to the accelerated integration of a large number of countries into global economic flows;

- Globalization of trade and business and the relocation of production and services have led to the need to activate regulatory and coordinating mechanisms on a multilateral level;
- Expansion of regional trade agreements aimed at removing barriers to international trade and investment (EU, CEFTA, Mercosur, NAFTA, *etc*.).

Authors that are studying economic diplomacy have refrained from defining the very term and emphasize that it is a discipline that is constantly changing and evolving. There is no universal solution or a unique model of economic diplomacy, but there are several frameworks through which the system is usually carried out.

The goal of this paper is to analyse the system and model of economic diplomacy in Croatia, as well as recommendations for a more effective model and wider involvement of all interested groups. The main research hypothesis of this work is that Croatian entrepreneurs found out that the economic diplomacy could play the important role in the development of the Croatian economy, but current involvement of the key institutions are still not recognised as relevant. The goals of the analysis are to review relevant scientific research related to economic diplomacy and to evaluate the type of institutions in Croatia which would be best suited to promote Croatian economic interests. The responsibilities and work of commercial diplomats from the Ministry of Foreign and European Affairs and other ministries, county offices, cities and municipalities, the Croatian Chamber of Economy and the Croatian Employers' Association, commercial diplomats from other states and associations were analysed. The results of the analysis can be used as guidelines for future policy makers in this respective field.

2. Previous research

According to the traditional definition, diplomacy implies activities among countries (Berković, 2006, p. 13) or official channels of communication used by employees of state institutions. It follows that diplomacy is a relationship between sovereign states established between officials both at home and abroad. Officials abroad are career or contracted diplomats (Berridge & James, 2003, p. 207). Economic diplomacy is a narrow term and has a narrower scope of action, it is a mean of economic foreign policy, and in its implementation both state (diplomacy, state officials and workers, *etc*.) and

non-state actors (multinational companies, NGOs, unions, business lobbies, *etc*.) are involved. In general, authors that are studying economic diplomacy have refrained from defining the very term and emphasize that it is a discipline that is constantly changing and evolving, just like the relations in international economy and international political relations which are changing rapidly. Economic diplomacy "is the way in which the state conducts its economic relations (at the beginning of the twenty-first century), decisions are made at national level and how to negotiate on the international scene (with other international subjects) and how these two processes are intertwined" (Bayne & Woolcock, 2007, pp. 61-62).

Although these authors put the state at the center of this process, they also speak about other non-state actors who are more influential throughout the process. (Saner & Yiu, 2003, p. 12) introduce the following terms: economic diplomacy and commercial diplomacy, which are within the competence of state actors, followed by a series of 'diplomatic' activities carried out by so-called post-modern, non-state actors: corporate diplomacy, business diplomacy, diplomacy of national nongovernmental organizations, diplomacy of transnational non-governmental organizations, *etc*.

Feltham (1996, p. 26) distinguishes the economic and commercial department of the diplomatic-consular mission, pointing out that promotion of trade relations with the recipient country (import and export) is an activity that should be carried out by the commercial department; helping and informing business people about business opportunities; consultations in the field of laws and regulations (relating to business, investment, customs and trade).

Professor Kishan Rana (Rana, 2002, pp. 12-13) carefully describes the following methods and methods used by commercial diplomacy in their daily work: analysis, creation of basic information materials, scope of work, teamwork, work of delegations and promotion of the country.

3. Research methodology

Along with the desktop analysis of available relevant literature on economic diplomacy through history and its development in Croatia, a comparative overview of different theoretical models was presented and recommendations for Croatian economic diplomacy were given. Also, research on the perception of (potential) users of economic diplomacy has also been carried out, clarifying

the findings from the theoretical part of the research. The perception and needs of the beneficiaries were collected through the method of semi structured interviews with twenty prominent businessmen and the changes they made in their views on two occasions – in 2009 and 2015.

4. Comparative analysis of model of economic diplomacy

Although there is no single approach, there are two dominant models of economic diplomacy: the countries that recruit the person who deals with economic issues in diplomatic missions and consular missions from the ministries of foreign affairs and affairs (for example, Croatia), and those recruited by the Ministry of Economy, Chambers of commerce, other economic institutions or the private sector (Poland, Austria). Other models are variations of these two basic models that rely on one or the other approach. Key differences are in the organization and coordination of jobs related to economic breakthroughs and in defining institutions and organizations that are crucial in this process:

Table 1. *Models of economic diplomacy*

MODEL	DESCRIPTION	CARRIER	EXECUTIONERS
Unified model	The diplomatic service carries out economic activities abroad	Ministry of Foreign Affairs	Representative offices abroad promote commercial interests
A partially unified model	Co-operation of key sector at the state level	Cooperation between ministries of foreign affairs and ministries of economy/trade	The departments responsible for economic diplomacy are within diplomatic representations
Third Agency Model	Establishment of new specialized bodies/ organizations	Independent bodies acting under the supervision of ministries in charge of the economy	Representatives of these organizations are located in diplomatic representations
Model of competition	Disagreement with objectives and activities of the relevant ministries	The tasks of the foreign affairs ministries and other ministries overlap, without a clear division of tasks	Separate work of individual departments without coordination in the field
Model of resignation	The Ministry of Foreign Affairs does not do anything about trade issues	Ministry of Economy and other ministries or agencies	Independent appearance of agencies/ state bodies in the field

Source: Adapted from (Rana, 2000, p. 311)

Regardless of the model there are five basic activities of economic diplomacy: promotion of trade, promotion of foreign direct investment, cooperation in science and technology, including research and development, promotion of tourism and advocacy of the national business community's interest (Potter, 2004, pp. 55-60). Support activities that enable basic activities are also defined. These support activities include business intelligence, intelligence, networking and public relations, including engagement in branding and image creation, negotiation support and contracts implementation and problem solving.

Promoting trade is a fundamental area of economic diplomacy. Promoting trade involves creating opportunities to increase exports to existing markets and identify new potential markets. Traditionally, foreign ministries were dealing with that. Now, depending on the institutional structure of the state, it is done by ministries of foreign affairs, but also by ministries of foreign affairs with other ministries (ministry of commerce, economy ministry), or third agency. For example, in the United Kingdom, the Ministry of Trade and Industry, together with the Ministry of Foreign Affairs, established two special trade and investment departments. In Singapore, the Ministry of Trade and Industry oversees two special units (the Singapore Trade Board and the Singapore Economic Development Board), which are fully in charge of promoting trade (Rana, 2000, p. 206). The second activity of economic diplomacy is to encourage foreign direct investments. Abroad this task is usually carried out within embassies. Employees of ministries or agencies responsible for trade and foreign investments are the executioners of this tasks. In the sending country, usually special agencies are established in order to attract investments, and their work is based on a developed investment strategy that includes priorities and projects. Collaboration in science and technology, including research and development, enables the strengthening of the technical capacity of the business sector and competitiveness in the international market. The Ministry of Science often coordinates this type of economic diplomacy activity.

The Ministry of Tourism and/or the National Tourist Board is usually responsible for promoting tourism. Embassies usually have promotional material about their homeland. These materials are prepared by the Ministry of Foreign Affairs, the Ministry of Tourism or jointly by several institutions. For a country that relies on tourism as one of its core revenues, such as Croatia, tourism promotion is a very important activity of economic diplomacy that allows rebalancing the balance of payments and can contribute to attracting foreign investment. While these activities are mainly carried out by state bodies, non-governmental

bodies (*e.g.* chambers of commerce, trade unions and other civil organizations - farmers' associations, consumers, *etc.*) usually advocate the business sector. In some countries, the business sector advocates special commissions within ministries or other state bodies.

Advocating the business sector is a more significant activity of economic diplomacy, and sometimes it is difficult to determine the differences between economic diplomacy (which should help in the realization of the interests of the state and the business community) and lobbying (primarily focussed on one stakeholder group). While business advocacy is very popular and well developed in developed countries, in less developed countries advocating business interests are often linked to corruption (Narray, 2005).

The chosen model of economic diplomacy should therefore correspond to the needs of an individual economy. Regardless of the model of economic diplomacy, it is crucial to ensure a high level of knowledge and skills that an economic diplomat must have, especially in the following areas (Naray, 2005):
• Preparing a review of the needs of potential market and its regular updating;
• Knowledge of sectorial features, including complex ones, such as biotechnology or information technology;
• Establishing a network of contacts;
• Knowledge of local rules, institutions, economic reports;
• Seeking potential new business areas;
• Attracting investment;
• To promote positive image of corporations and countries.

More diverse factors, both international and domestic, affect the development of economic diplomacy. At the international level, the most important are processes of trade liberalization, strengthening of competition and globalization. Decentralization is among the leading factors at the national level that encourage the development of economic diplomacy.

Globalization has created a more complex and interconnected world, new relationships between individuals and institutions that are not territorially determined. For example, multinational and transnational companies strive to lobby in order to influence the development of domestic and international policies in accordance with their interests. On the other hand, non-governmental organizations can advocate protecting the local population and small companies from the harsh competition of multinational companies.

Countries with similar economic orientations align their negotiating standpoints in order to strengthen their negotiating position and influence on the formation of rules globally.

5. Model of economy diplomacy in the Republic of Croatia

The recognition and the view of the role, importance and the need for economic diplomacy change from year 2009 to 2015. In 2009, entrepreneurs felt that there were opportunities and room for profitable investments in the Croatian economy. Along with quality, highly educated employees, the European level of performance, communication and willingness to communicate between state institutions is assessed as a key factor of progress.

The framework for progress of that time was linked to the need to further improve the efficiency of court work, *i.e.* cadastre, reducing tax burden, ensuring more effective market surveillance, transparency of public administration, easier and more open communication with relevant services, and adapting the legal framework to modern standards of European economies which would make the Croatian market more attractive to American companies. Economic diplomacy in 2009 was not at the centre of interest nor was the need of Croatian businessmen.

And the results of the survey in 2015 show that there is still no prevailing opinion that economic diplomacy is necessary for the Croatian economy and that the activities of individual bodies involved in the implementation of economic diplomacy are in fact useful. The share of respondents who fully or to a large extent consider that the activities of individual bodies useful is 10 percent, regardless of the institution. Added those who partially recognize the purpose of the activities carried out by bodies of economic diplomacy, the share ranges from 19 (other ministries), over 30 percent (Office of the President and Government, MVEP and the diplomatic network, county office, city, municipalities) to 45 percent (HGK and HUP).

As mentioned above, respondents are quite critical to the justification of certain activities and the results show negative bias. That is, total score of usefulness is less beneficial to individual actors, primarily HGK and HUP.

About half (46%) of the respondents conduct their own activities which they consider economic diplomacy, and they rate them very successfully. There is a significant correlation (r = 0.42) between the evaluation of their own activities and their specific benefits in terms of business contacts, trade

increase or investment based on their own activities. There is a prevalent opinion (63 percent of those who carry out their own activities) that the activities of particular societies accomplish wider benefits, not only for the society that conducts it, but also for the Croatian economy.

It is interesting that those who are not familiar with the activities of certain actors of economic diplomacy agree with the view that these bodies do not perform functions of specific benefit to the Croatian economy.

Today, the main actors of economic diplomacy in the Republic of Croatia are the President of the Republic of Croatia, the Government of the Republic of Croatia, the Ministry of Foreign Affairs and European Affairs, the Ministry of Economy, the Ministry of Entrepreneurship and Crafts, the Ministry of Tourism, the Ministry of Science, Education and Sports, the Ministry of Finance, the Croatian Bank for Reconstruction and Development (HBOR), State Office for Trade Policy, Croatian national Tourist Board, Croatian Chamber of Trades and Crafts (HOK), Croatian Exporters, Croatian Employers' Association, the National Competitiveness Council, and the cities and counties promote their economic development interests.

Regardless of a number of potentially interested parties/actors, Croatia is implementing a unified model. Currently, the Ministry of Foreign Affairs and European Affairs has the key role and despite the incentives to engage and involve other bodies and to educate future economic diplomats - this approach never took place.

The key challenges of Croatian economic diplomacy are to provide the knowledge and skills of economic diplomats to work in this area, to provide political support to Croatian entrepreneurs in concluding specific larger foreign affairs and to synergistically coordinate and mutually coordinate the actions of different actors. It is also important to make the transition from the classic dominant trade framework of international cooperation to a capital and entrepreneurial approach, with Croatia's capital exports and direct investments by Croatian entrepreneurs. This model of economic diplomacy needs to be systematically developed, especially by institutional linkage.

6. Conclusions

The full and complete model of economic diplomacy does not really exist, neither in larger nor in smaller countries. There are differences between

successful and less successful patterns, where the key is to find the appropriate balance, guided by the interests to dynamize export and foreign investment.

Economic diplomacy should have a significant role to assist Croatian exporters in positioning on the international market, protecting the interests of Croatian companies abroad and attracting foreign investment (Tišma, Boromis & Raditya-Ležaić, 2012, pp. 56-62). Economic diplomats should be trained for competent action in accordance with special and often separated interests and opportunities at different levels, *i.e.* internationally, nationally, sub regionally and locally, as well as at sectoral and business levels. In the domain of strategic political and business decision-making, however, the question remains whether to prioritize traditional or new markets, exchanges or investments.

The active and continuous cooperation of the Ministry of Foreign Affairs and European Integration and other relevant ministries and institutions as well as the business community plays an important role in the further development and positioning of the Croatian economy on the international market. Croatia, as a small country, with a limited number of diplomatic staff is unable to organize its economic diplomacy, such as larger, more developed countries.

Therefore, a carefully designed human resources policy that implies efficiency control and employee rewarding system plays a crucial role in creating effective economic diplomacy, and the specific knowledge and skills of diplomats must meet the specific needs arising from a relationship with a particular country. Since the success of the job depends primarily on the people who do them, to build a positive image of the country and to promote Croatian economic interests, it is most important to engage professional, innovative and hardworking people who will in every possible way promote both Croatian products and the entire economy. Today, the economy is taking a leading role in international relations and it is on the Republic of Croatia to engage faster and better in the globalization processes.

The study found that entrepreneurs believe economic diplomacy is necessary for the Croatian economy. They are sceptical about the benefits to the companies they work in, and few of them use economic diplomacy. Those who use economic diplomacy often use different channels, including commercial diplomats from MVEP and other ministries, county offices, cities and municipalities, HGK and HUP services, commercial diplomats from other states and associations. A large number of entrepreneurs independently carry out activities that they consider to be economic diplomacy.

Today, there is no consensus as to which body would be most appropriate to promote economic interests. Entrepreneurs mostly evaluate their own activities more useful than the activities of professional commercial diplomats. This data points to the conclusion that targeted activities are key to success. On the other hand, the largest share thinks that MVEP should coordinate activities that help businesspeople, including those dealing with domestic policies.

Some of the developmental breakthroughs in the work of economic diplomacy could go in the direction of taking over these jobs from the Croatian Chamber of Commerce and its representations around the world. An active economic policy would enable an independent institution that would, through intensive co-operation with other stakeholders, with clear activities and concrete obligations, enable well-trained experts to represent the economic interests of the Republic of Croatia in the world, in a way that in certain countries within the embassy or the general consulate, together with other diplomats or consular personnel, work HGK employees who will be required to have a diplomatic status as well as full independence in performing all tasks related to the activities in economic diplomacy.

A good example is Austria, whose traditional model and organization of the Chambers of Commerce is one of the possible ways that Croatian economic diplomacy should strive for. In this way, it would move from a unified model to the third generation model, in which the foreign representative offices of the Croatian Chamber of Commerce would act as trade offices of embassies in the world. This approach would ensure the availability of specialist with specific knowledge to support traditional diplomats. This applies in particular to the skills of advertising on foreign markets, attracting investment, knowledge of specific sectoral and/or local conditions. Given that the Croatian Chamber of Commerce is making efforts to strengthen its foreign representations - it has been strengthening capacity and increasing the number of offices in the world - it is possible that this kind of action will be imposed in practice. It's a fact that the costs would be justified and would not require further budget loads.

For the promotion of economic interests to be successful, several stakeholders, including state and other bodies, must be involved. A greater number of stakeholders make it possible to combine general and specific knowledge and skills, as well as knowledge of the entrepreneurs needs. This requires good coordination of the activities of various stakeholders, including fieldwork with entrepreneurs, domestic market activities to create

strategic conditions for economic growth, export market activities and attracting investment. Successful implementation depends primarily on the competences and motivation of economic diplomats, which should be strengthened. Entrepreneurs are mostly not familiar with the activities that individual institutions carry out in the field of economic diplomacy.

Opinions are divided among entrepreneurs on whether the actors of economic diplomacy provide relevant information for the business of exporters. Entrepreneurs are generally satisfied with professionalism and correctness in communicating with representatives of economic diplomacy, but not with the quality and relevance of information and advice provided. This suggests that relevant information for the export business are not (only) those provided by the actors of economic diplomacy.

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MEASURING SOCIAL INCLUSION OF YOUTH IN THE FEDERATION OF BOSNIA AND HERZEGOVINA[1]

MJERENJE SOCIJALNE INKLUZIJE MLADIH U FEDERACIJI BOSNE I HERCEGOVINE

Abstract

From a youth perspective, social inclusion is commonly defined as the process of individual's self-realisation within a society and recognition by the society of one's potential and contribution (manifested through study, volunteering and other forms of participation). Since social inclusion is a multidimensional concept, establishing appropriate measure needs to be approached from various angles.
The purpose of this study is to explain determining factors of social inclusion of youth in the Federation of Bosnia and Herzegovina (FBiH).
This is a quantitative study, where we use an established Social Inclusion Scale (SIS) developed by Secker et al. (2009) to measure social inclusion of youth in the FBiH. Therefore, the study also aims to validate the SIS in a sample of graduate students where we use non-probability sampling methods. To gain better understanding of the factors that determine the most the social inclusion of youth in the FBiH we use descriptive statistics, Cronbach's Alpha and partial confirmatory factor analysis.
Implications of this study suggest that social inclusion of youth in the FBiH is affected by their level of social isolation, social relations and social acceptance. The results of this study could be a solid starting point for government decision makers in the FBiH in the process of creation economic and social policies.

Sažetak

Socijalna inkluzija se, iz perspektive mladih, obično definiše kao proces individualnog samoostvarenje unutar društva te društvenog prepoznavanja potencijala i doprinosa pojedinaca. Pomenuti doprinosi manifestuju se kroz studiranje, volontiranje i ostale oblike participacija.
Cilj ovog istraživanja je da objasni determinirajuće faktore socijalne inkluzije mladih u Federaciji Bosne i Hercegovine (FBiH).
S obzirom da se radi se o kvantitativnom istraživanju u kojem se, za mjerenje socijalne inkluzije mladih u FBiH, koristi skala razvijena od strane Secker et al. (2009), jedan od ciljeva je i da se ispita njena validnost na namjernom uzorku studenata završnih godina. Da bi se steklo što bolje razumijevanje faktora koji determinišu socijalnu inkluziju mladih u FBiH, korištene su metode deskriptivne statističke analize, Kronbahova alfa te parcijalna konfirmatorna faktorska analiza.
Implikacije istraživanja sugeriraju da je socijalna inkluzija mladih u FBiH determinisana socijalnom izolacijom, socijalnim odnosima i socijalnim prihvatanjem. Dobijeni rezultati mogu da posluže kao dobra polazna osnova svim nivoima vlasti u FBiH prilikom koncipiranje ekonomskih i socijalnih politika

Ključne riječi: socijalna inkluzija, skala za mjerenje socijalne inkluzije, interna konzistenost, parcijalna konfirmatorna faktorska analiza, mladi

JEL: C83, C38, I39

1. Introduction

In 2009, the Member States adopted the EU youth strategy that acknowledges young people as both a most vulnerable group and a precious resource in an ageing Europe (European Commission, 2012). The strategy has following two main objectives (Commission of the European Communities, 2009): to provide more and equal opportunities for young people in education and the job market and to encourage young people to actively participate in society. According to the Commission of the European Communities (2009), education, employment, social inclusion, and health have been identified as topping the list of young people's concerns across Europe. In this paper we will focus on their social inclusion. From a youth perspective social inclusion

is the process of individual's self-realisation within a society, acceptance and recognition of one's potential by social institutions, integration (through study, employment, volunteer work or other forms of participation) in the web of social relations in a community (Kovacheva, 2014). In the UNDP youth strategy 2014-2017, term "youth" refers to young women and men, in all their diversity of experiences and contexts, taking into consideration the existing definitions of youth used at the country and/or regional level(s). UNDP (2014) proposes to focus principally on young women and men ages 15-24, but also to extend that youth group to include young men and women ranging from ages 25-30 (and even beyond through age 35), based on contextual realities and regional and national youth policy directives.

This research should result in response to the following question: What factors determine the social inclusion of youth in the Federation of Bosnia and Herzegovina (FBiH)? Just like in the European Union (EU), young people in Bosnia and Herzegovina (BiH) are one of the most vulnerable group, mainly due to high youth unemployment rate. According to World Bank indicators, in 2015 there were 27.7% of young persons in BiH that were not in education, employment or training which is much higher in comparison to 12.1% in the euro area and 11.9% in the EU (World Bank, 2017).

The main goal of this paper is to identify and explain determining factors of social inclusion of youth in the FBiH. Having in mind the above said, the central research hypothesis shall be as follows: Social inclusion of youth in the FBiH is affected by their level of social isolation, social relations and social acceptance. The results of this study could be a solid starting point for government decision makers in the FBiH in the process of creation economic and social policies.

The paper is organized as follows. After the introduction, part two gives a short overview of theoretical framework of some recent literature that is relevant to the main objective of the paper. Part three outlines the data and research methodology. Part four is the centre of the paper and contains analysis and discussion of the original empirical results. The last part contains some final remarks and conclusions.

2. Theoretical framework and literature review

So far, a significant number of scientific research has been conducted on the social inclusion in general. However, the theoretical point of reference of this

research will have its central foundation in preceding studies on social inclusion measuring. Since it is a multidimensional concept, establishing appropriate measure needs to be approached from various angles. Measurement of social inclusion is context-specific and depends on various variables such as place, gender, time, age, ethnicity, *etc*. Therefore, given its multidimensional nature, it is difficult to measure social inclusion with a single indicator.

As discussed by Oxoby (2009) the absence of a formal definition of the concept of inclusion poses significant problems to research in this area. In their recent study, Cordier *et al*. (2016) even claimed that the term social inclusion has been used interchangeably at times with concepts such as social and cultural capital. Cobigo *et al*. (2012) define social inclusion as the result of complex interactions between personal and environmental factors which increases an individual's opportunities to contribute to society. Atkinson and Marlier (2010) define social inclusion as the process by which societies combat poverty and social exclusion. Silver (2015) claims that social inclusion may refer to a process encouraging social interaction between people with different socially relevant attributes or an impersonal institutional mechanism of opening up access to participation in all spheres of social life.

In defining social inclusion there is even no consensus among relevant institutions, such as, The World Bank, European Commission, UNESCO, World Health Organization, *etc*. Overview of their definitions of the social inclusion is given in following table.

Table 1. *Overview of some relevant definitions of social inclusion*

Source	Definition
The World Bank Group (2017a)	Social inclusion is the process of improving the terms for individuals and groups to take part in society, and the process of improving the ability, opportunity, and dignity of those disadvantaged on the basis of their identity to take part in society.
European Commission (2010)	The EU defines social inclusion as a process which ensures that those at risk of poverty and social exclusion gain the opportunities and resources necessary to participate fully in the economic, social and cultural life and to enjoy a standard of living and well-being that is considered normal in the society in which they live. Social inclusion also ensures that vulnerable groups and persons have greater participation in decision making which affects their lives and that they can access their fundamental rights.

UNESCO (2017)	Social rights bring together numerous rights that must be dealt with at the local level: rights to housing, education, clean water and health care emphasize the role of local authorities as a welfare provider and social provision as a duty which lies within city halls and councils
World Health Organization (2017)	Social exclusion consists of dynamic, multidimensional processes driven by unequal power relationships interacting across four main dimensions – economic, political, social and cultural – and at different levels including individual, household, group, community, country and global. It results in a continuum of inclusion/exclusion characterized by unequal access to resources, capabilities and rights, which leads to health inequities.

Source: Authors' creation

Social inclusion is, as Silver (2015) has pointed out, context specific concept. However, from the perspective of a young person, social inclusion can be understood as a process of realising one's potential within society and recognition by the society of that potential and the contribution that young people make (Eurofond, 2015). Despite the fact that social inclusion has been defined in many different and complex ways, in this research, following the work of Secker et al. (2009) and Wilson and Secker (2015), we will refer to the concept of social inclusion as to the combination of three dimensions, i.e.: social isolation, social relations and social acceptance. This theoretical concept is presented in the following figure.
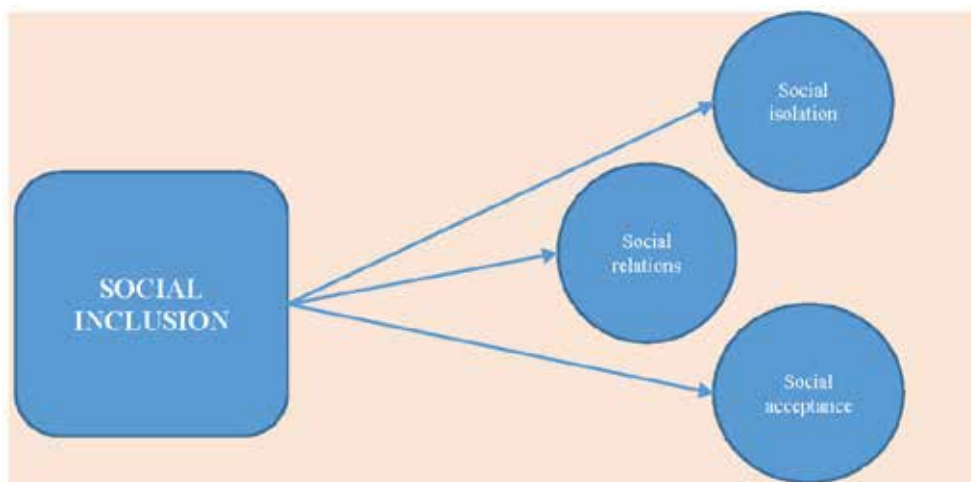

Figure 1. *The theoretical concept*

Source: Authors' creation based on (Secker *et al.*, 2009)

According to Wilson and Secker (2015) *social isolation* refers to the amount of contact an individual has with people and society; *social acceptance* refers to a person's sense of being accepted within their social contexts; and *social relations* refers to relationships between people.

3. Data and methodology

Our research builds on existing knowledge in the fields of measuring social inclusion. Due to lack of consensus on definition and conceptualisation, the operationalization and measurement of social inclusion has not been straightforward (Cordier *et al*., 2016, p. 2). This is a quantitative study, where we use an established Social Inclusion Scale (SIS) developed by Secker *et al*. (2009) to measure social inclusion of youth in the FBiH. As a representatives of youth, in this study we used graduate students. We conducted primary research in which data are collected by the method of written tests using a structured questionnaire. It was a convenience sample unit consisted of total 205 graduate students from University of Tuzla. The participation in the study was voluntary and anonymous. Research was conducted during the second quarter of 2017. Table 2 gives overview of some basic characteristics of the sample.

Table 2. *Basic sample characteristics*

Characteristics	Natural sciences		Engineering and technology		Medical and Health sciences		Agricultural sciences		Social sciences		Humanities		Total	
	n	(%*)	n	(%*)	n	(%*)	n	(%*)	n	(%*)	n	(%*)	n	(%*)
Sex														
Male	6	3.0	20	10.0	1	0.5	N/A	N/A	36	17.9	1	0.5	64	31.8
Female	18	9.0	17	8.5	5	2.5	N/A	N/A	95	47.3	2	1.0	137	68.2
Place of residence														
Urban	14	6.9	26	12.9	3	1.5	0	0.0	88	43.6	2	1.0	133	65.8
Rural	10	5.0	11	5.4	3	1.5	1	0.5	43	21.3	1	0.5	69	34.2
Education financing														
My parents finance me	15	7.4	29	14.2	4	2.0	0	0.0	92	45.1	2	1.0	142	69.6
I have scholarship	3	1.5	1	0.5	0	0.0	0	0.0	2	1.0	0	0.0	6	2.9
I do casual jobs	0	0.0	5	2.5	0	0.0	0	0.0	2	1.0	0	0.0	7	3.4

Other	0	0.0	0	0.0	0	0.0	0	0.0	1	0.5	0	0.0	1	0.5
My parents finance me and I have scholarship	5	2.5	2	1.0	1	0.5	1	0.5	18	8.8	1	0.5	28	13.7
My parents finance me and I do causal jobs	1	0.5	1	0.5	1	0.5	0	0.0	11	5.4	0	0.0	14	6.9
I have scholarship and I do causal jobs	0	0.0	0	0.0	0	0.0	0	0.0	2	1.0	0	0.0	2	1.0
My parents finance me, I have scholarship and I do causal jobs	0	0.0	0	0.0	0	0.0	0	0.0	4	2.0	0	0.0	4	2.0
Being a social person – self assessment														
Yes	24	11.8	37	18.1	6	2.9	1	0.5	127	62.3	3	1.5	198	97.1
No	0	0.0	1	0.5	0	0.0	0	0.0	5	2.5	0	0.0	6	2.9

Note: * of Total

Source: Authors' research

The youngest graduate student from our sample is 22 years old, and the oldest is 31 year old. Average age is 23.73 years with standard deviation of 1.54. In development of the SIS, Secker *et al.* (2009) derived following initial concepts of social inclusion: *bonding and bridging social capital* (Putnam, 1995); *social acceptance, neighbourhood cohesion and engagement in leisure and cultural activity* (Gallie & Paugham, 2002); *citizenship* (Matarasso, 1997); and *perceived security of housing tenure* (Bates, 2005). The initial SIS had 22 items and three subscales: *social isolation*, *social relations* and *social acceptance*. However, this research is focused on measuring social inclusion of students and, therefore, as previously proposed by Wilson and Secker (2015), one question had to be removed from the original SIS ("My social life has been mainly related to mental health, or people who use mental health services."). SIS items and subscales are presented in the following table.

Table 3. *SIS items and subscales*

Subscale	Item
Social Isolation	I have felt terribly alone and isolated
	I have felt accepted by my friends
	I have been out socially with friends
	I have felt I am playing a useful part in society*
	I have friends I see or talk to every week*
Social Relations	I have felt I am playing a useful part in society*
	I have felt what I do is valued by others
	I have been to new places

Social Relations	I have learnt something about other cultures
	I have been involved in a group not just for my university studies
	I have done some cultural activity
	I have felt some people look down on me because of how I am
	I have felt unsafe to walk alone in my neighbourhood in daylight
Social Acceptance	I have friends I see or talk to every week*
	I have felt accepted by my neighbours
	I have felt accepted by my family
	I have felt clear about my rights
	I have felt free to express my beliefs
Individual Items	I have felt insecure about where I live
	I have done a sport, game or physical activity
	I have helped out at a charity or local group

Note: * Items in more than one subscale

Source: Secker *et al*., 2009, p. 69 and Wilson & Secker, 2015, p. 54

According to Secker et al. (2009) individual items shown in Table 3 did not correlate well with any of the three scales but had good correlations with the measure as a whole. These items were therefore excluded from the subscales but included as separate items within the SIS because the literature indicated that they constituted important elements of social inclusion.

The SIS consists of statements in which participants choose the option on a Likert scale ("Not at all", "Not particularly", "Yes a bit" and "Yes definitely") that best describes their relationships with other people over the last month. We coded responses using a numerical scale of 1-4 (4 most positive, 1 least positive). The scale also includes four negatively-keyed items ("I have felt terribly alone and isolated", "I have felt some people look down on me because of how I am", "I have felt unsafe to walk alone in my neighbourhood in daylight" and "I have felt insecure about where I live"). These items were had to be reverse-scored before conducting reliability analysis.

Similar to Wilson and Secker (2015) we are hypothesising that Cronbach's alpha for the SIS as a whole, its three subscales, would be >0.70 demonstrating good internal consistency. However, here it should be mentioned that, there is no universal minimally acceptable reliability value. An acceptable reliability value depends on the type of application, and furthermore, the focus should be on the population reliability value and not on the sample reliability value (Bonetti & Wright, 2015, p. 15). To conduct a partial confirmatory factor

analysis (PCFA), the unrestricted factor model solution must be estimated by maximum likelihood estimation method – MLE. PCFA, as pointed out by Gignac (2009), may be considered to lie between conventional exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) on the spectrum of evaluating the plausibility of a model. An analysis may be referred to as PCFA when the number of factors is expected to be known but the specific pattern of loadings may not be. For model fit evaluation, and according to the research of Gignac (2009), we calculated the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993), the normed fit index (NFI; Bentler & Bonnett, 1980), the Tucker–Lewis Index (TLI; Tucker & Lewis, 1973) and the Comparative Fit Index (CFI; Bentler, 1990), as follows:

$$RMSEA = \sqrt{\frac{\chi^2_{Implied} - df_{Implied}}{(N-1)*df_{Implied}}}, \tag{1}$$

$$NFI = \frac{\chi^2_{Null} - \chi^2_{Implied}}{\chi^2_{Null}}, \tag{2}$$

$$TLI = \frac{\left(\chi^2_{Null}/df_{Null}\right) - \left(\chi^2_{Implied}/df_{Implied}\right)}{\left[\left(\chi^2_{Null}/df_{Null}\right) - 1\right]}, \tag{3}$$

$$CFI = 1 - \frac{\chi^2_{Implied} - df_{Implied}}{\chi^2_{Null} - df_{Null}}. \tag{4}$$

4. Empirical results and discussion

4.1. Internal consistency

Cronbach's alpha was calculated for the full scale (SIS total) and for three subscales. Cronbach's alpha was also calculated using "scale if item deleted" to assess whether the SIS subscales would have greater internal consistency if any items were deleted. See Table 4 for internal consistency statistics for each questionnaire measure.

Table 4. *Cronbach's alpha using "scale if item deleted"*

Measure	Scale Mean	Scale Std. Dev.	Cronbach's alpha	Cronbach's alpha if item deleted
SIS Total (19 items)				-
Item 1 (I have felt terribly alone and isolated) deleted				0.776
Item 2 (I have felt accepted by my friends)deleted				0.777
Item 3 (I have been out socially with friends) deleted				0.771
Item 4 (I have felt I am playing a useful part in society*) deleted				0.770
Item 5 (I have friends I see or talk to every week*) deleted				0.776
Item 6 (I have felt what I do is valued by others) deleted				0.776
Item 7 (I have been to new places) deleted				0.774
Item 8 (I have learnt something about other cultures) deleted				0.778
Item 9 (I have been involved in a group not just for my university studies) deleted				0.794**
Item 10 (I have done some cultural activity) deleted	64.103	6.717	0.789*	0.779
Item 11 (I have felt some people look down on me because of how I am) deleted				0.791**
Item 12 (I have felt unsafe to walk alone in my neighbourhood in daylight) deleted				0.782
Item 13 (I have felt accepted by my neighbours) deleted				0.771
Item 14 (I have felt accepted by my family) deleted				0.778
Item 15 (I have felt clear about my rights) deleted				0.777
Item 16 (I have felt free to express my beliefs) deleted				0.770
Item 17 (I have felt insecure about where I live) deleted				0.792**
Item 18 (I have done a sport, game or physical activity) deleted				0.793**
Item 19 (I have helped out at a charity or local group) deleted				0.783
Social Isolation Total (5 items)				-
Item 1 (I have felt terribly alone and isolated) deleted				0.699
Item 2 (I have felt accepted by my friends) deleted				0.682
Item 3 (I have been out socially with friends) deleted	18.293	2.171	0.738*	0.667
Item 4 (I have felt I am playing a useful part in society) deleted				0.750**
Item 5 (I have friends I see or talk to every week) deleted				0.666
Social Relations Total (8 items)				-
Item 1 (I have felt I am playing a useful part in society) deleted				0.532
Item 2 (I have felt what I do is valued by others) deleted				0.557
Item 3 (I have been to new places) deleted				0.532
Item 4 (I have learnt something about other cultures) deleted	25.356	3.535	0.599	0.547
Item 5 (I have been involved in a group not just for my university studies) deleted				0.599
Item 6 (I have done some cultural activity) deleted				0.532
Item 7 (I have felt some people look down on me because of how I am) deleted				0.635**

Item 8 (I have felt unsafe to walk alone in my neighbourhood in daylight) deleted				0.588
Social Acceptance Total (5 items)				-
Item 1 (I have friends I see or talk to every week) deleted	18.65	1.863	0.702*	0.702
Item 2 (I have felt accepted by my neighbours) deleted				0.659
Item 3 (I have felt accepted by my family) deleted				0.638
Item 4 (I have felt clear about my rights) deleted				0.629
Item 5 (I have felt free to express my beliefs) deleted				0.633

Note: * >0.70, ** improved internal consistency when removed

Source: Authors' research

As expected, the SIS as whole (Cronbach's alpha = 0.789), the Social Isolation subscale (Cronbach's alpha = 0.738) and the Social Acceptance (Cronbach's alpha = 0.702) subscale demonstrated high internal consistency. The Social Relations subscale (Cronbach's alpha = 0.599) did not demonstrate acceptable internal consistency. This subscale did demonstrate improved internal consistency (0.635) with one item ("I have felt some people look down on me because of how I am") deleted. Similar to the conclusion of Wilson and Secker (2015) we recommend complete removal of the three items which did not fit into the three subscales in previously reported analysis (Secker *et al*., 2009). We found out that the internal consistency of the SIS remained unchanged upon the removal of these three items. We should keep in mind, as pointed out by Huxley (2015) and Wilson and Secker (2015), that there is currently no gold standard measure of social inclusion, nor is there exact agreement upon the indicators of social inclusion.

4.2. Partial confirmatory factor analysis

Prior to conducting PCFA we examined scree plot to determine how many factors should be considered. We removed from the further analysis three items which did not fit into the three subscales in previously reported results. Figure 2 represents scree plot.
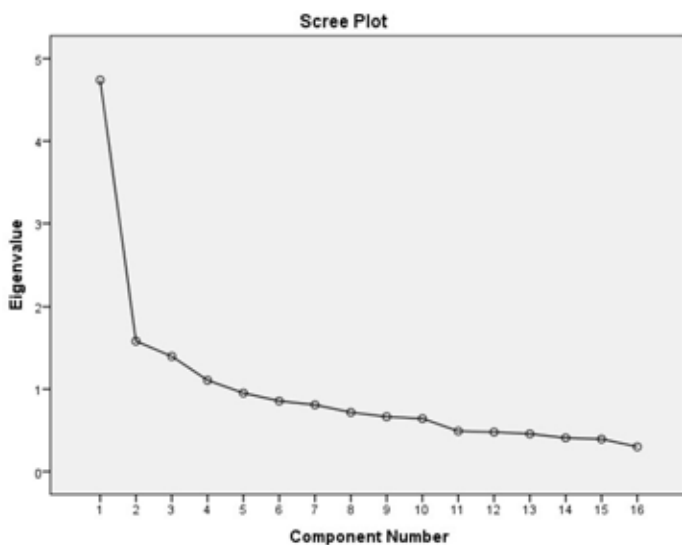
Figure 2. *Scree plot*

Source: Authors' research

Scree plot implies probable three factors in the data, and that is consistent with the nature of our variables, and our theoretical concept. Next step was to perform factor analysis with VARIMAX rotation where we fixed number of factors to extract to three. We got approximately 48.26%. of explained variance singled out of three factors. The rotated factor matrix is presented in Table 5.

Table 5. *Rotated factor matrix*

Item	Factor		
	Social acceptance	Social isolation	Social relations
I have felt accepted by my neighbours*	**0.662**	0.151	0.156
I have felt accepted by my family*	0.653	0.280	0.066
I have felt what I do is valued by others**	**0.598**	0.095	0.152
I have felt clear about my rights*	**0.569**	0.148	0.177
I have felt free to express my beliefs*	**0.472**	0.259	0.257
I have felt I am playing a useful part in society**	**0.458**	0.218	0.292
I have felt some people look down on me because of how I am**	0.314	0.150	-0.003
I have friends I see or talk to every week*	0.090	**0.821**	0.190

I have been out socially with friends*	0.248	**0.602**	0.289
I have felt accepted by my friends*	0.337	**0.561**	0.039
I have felt terribly alone and isolated*	0.253	**0.494**	0.075
I have felt unsafe to walk alone in my neighbourhood in daylight**	0.118	**0.309**	0.099
I have been to new places*	0.185	0.053	**0.685**
I have learnt something about other cultures*	0.073	0.139	**0.619**
I have done some cultural activity*	0.107	0.116	**0.528**
I have been involved in a group not just for my university studies*	0.072	0.084	**0.299**

Note: *   Item tap the same factor as proposed by the SIS

      ** Item did not tap the same factor as proposed by the SIS

Source: Authors' research

Table 6. *Overview of model fit statistics*

				RMSEA	SRMR	NFI	TLI	CFI
108.005	75	783.978	120	0.0468	0.0436	0.8622	0.9205	0.9503

Source: Authors' research

Results of RMSEA and CFI are indicating good model fit. According to Hu and Bentler (1999) smaller values of RMSEA are indicative of a progressively better fitting model, with values approximating 0.08 to 0.06 or less indicative of an acceptable level of model fit; larger values of NFI, TLI and CFI are indicative of a progressively better fitting model, with values approximating 0.950 or larger indicative of an acceptable level of model fit.

5. Conclusion

As there is currently no gold standard measure of social inclusion, this research - which was conducted at the level of the FBiH, tried to contribute to measurement of social inclusion of youth. The results revealed that social inclusion of youth in the FBiH is affected by their social isolation, social relations and social acceptance. On the policy level, the real implications of the study could be a solid starting point for government decision makers in the FBiH in the process of creation economic and social policies. These policies should include tools to decrease social isolation and to increase and intensify social relations and acceptance. It is very important to take

steps on accelerating economic development, which increases employment opportunities; increase participation in social events; enable participation in distribution of social wealth; increase inclusive education, promote social innovations, *etc*. Hence, in order to obtain reliable and more relevant data regarding the social inclusion of youth in the BiH, future research should include a larger number of respondents. Also, this research suggests a need for more in depth analysis of the effect of socio-economic and demographic variables on the social inclusion of youth.

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Endnote

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STATISTICAL QUALITY CONTROL IN THE FUNCTION OF INCREASING PRODUCTION PROCESSES IN THE FOOD INDUSTRY OF BOSNIA AND HERZEGOVINA

STATISTIČKA KONTROLA KVALITETA U FUNKCIJI POVEĆANJA EFIKASNOSTI PROIZVODNIH PROCESA U PREHRAMBENOJ INDUSTRIJI BOSNE I HERCEGOVINE

Abstract

Developed food processing industry is of great importance for every country, and it is the same when it comes to Bosnia and Herzegovina (BiH). In fact, it is a branch of industry considered to be not only strategic branch of industry but also an incentive factor for better development of primary agricultural production that brings greater chances for employment. When it comes to the food processing industry of BiH, the crucial thing to be mentioned is that inadequate systems of statistical quality control in BiH companies represent a limited factor in their business. As the result of that state, companies are faced with long-term consequences manifested in the reduction of production processes as well as in competitive position and business profitability. According to everything mentioned previously, the aim of this study is focused on the research of the statistical quality control on the efficiency of production processes in BiH food processing industry. The research will include a sample of 30 BiH food industry companies. Not only primary, but also secondary research concerned with

conceptual definition of quality control, production processes, statistical process control (SPC), as well as the most important statistical methods for quality control. The results of the research will show the level of implementation of statistical quality control and its impact on increasing the efficiency of production processes in BiH food industry companies.

Keywords: quality control, statistical quality control, food processing industry, production processes, Bosnia and Herzegovina

JEL: L66

Sažetak

Razvijena prehrambena industrija ima višestruki značaj za svaku zemlju, pa i za Bosnu i Hercegovinu. Naime, radi se o industrijskoj grani koja se u većini zemalja smatra strateškom privrednom granom i koja predstavlja poticajni faktor za brži razvoj primarne poljoprivredne proizvodnje i veće zapošljavanje. Kada je riječ o prehrambenoj industriji BiH, treba istaći da neadekvatni sistemi statističke kontrole kvaliteta u bh. preduzećima predstavljaju ograničavajući faktor u njihovom poslovanju. Takvo stanje u sistemu kontrole dugoročno implicira mnogobrojne štetne posljedice koje se manifestuju kroz smanjenje efikasnosti proizvodnih procesa, a samim tim i konkurentnosti i profitabilnosti poslovanja. U vezi sa navedenim, postavljen je cilj rada koji se odnosi na istraživanje uticaja statističke kontrole kvaliteta na efikasnost proizvodnih procesa u prehrambenoj industriji BiH. Istraživanje će obuhvatiti uzorak od oko 30 bosanskohercegovačkih preduzeća prehrambene industrije. Osim primarnog, u radu će se realizovati i detaljno sekundarno istraživanje koje se tiče pojmovnog određenja kontrole kvaliteta, proizvodnih procesa, statističke kontrole procesa (SPC), kao i najznačajnijih statističkih metoda za kontrolu kvaliteta. Rezultati istraživanja trebali bi pokazati nivo primjene statističke kontrole kvaliteta i njen uticaj na povećanje efikasnosti proizvodnih procesa u preduzećima prehrambene industrije BiH.

Ključne riječi: kontrola kvaliteta, statistička kontrola kvaliteta, prehrambena industrija, proizvodni proces, Bosna i Hercegovina

JEL: L66

1. Introduction

The food industry, in terms of its production and real trade tax, is one of the most important leading economic branches of the world economy. It is well known that in the capacities of the agro-industrial complex it absorbs about 1/3 of the labor contingent of the total population of middle-developed countries, and achieves about 1/4 of the social product of the industry. The food industry is a specific branch of every national economy and it can be considered one of the strategic industrial branches of the economy. When it comes to the effects of BiH's food industry in gross added value, data show that in the last decade (from the year 2005 to 2014) there was BAM 4.6 billion of gross domestic product in this industry, which is 17.8% of GDP while manufacturing industry during the same period achieved 25.9 billion BAM, or 1.9% of GDP of the total economy, which is 242.3 billion BAM. There are remarkable differences in the intensity of gross domestic product growth in the last two terms. Namely, in the first term (from the year 2005 to 2010), the gross domestic product in the *Food Production* grew at a rate of 9.9%, and in the second term (from the year 2010 to 2014) it grew at a rate of only 1%. This drastic reduction of the gross domestic product rate is due to the major changes in the conditions of the economy in the last term.

Existing agricultural potentials within the territory of BiH have been very little utilized. However, the needs of the processing capacities that have been built and sustainable needs of the population (for food) represent important stronghold in the expected turn related to development of the agro-industrial capacities. The market of BiH has the needs and opportunities for improving the production of food products. The needs are particularly noticeable in the import and export of agricultural and food products for BiH, which in the post-war period reached the ratio of 1:69 in favor of imports. When it comes to the effects of the food industry of BiH in foreign trade, data show that during the period from the year 2012 till 2015 this industry achieved a foreign trade of BAM 96.3 billion, out of which BAM 63.4 billion or 65.8% is related to the import of products while BAM 33.8 billion or 34.2% is related to export of products.

Bearing in mind the above mentioned, the food industry in BiH has great potential for substitution of imported food products as well as the possibility of exporting ecologically clean, safe and healthy food. In order to achieve these possibilities, it is necessary to stimulate the introduction of modern

technological and managerial concepts that will enable progressive reduction of production costs on the basis of higher productivity. In this way it will be possible to increase the utilization of existing production capacity. It should be noted here that inadequate systems of statistical quality control in BiH companies represent a limiting factor in their business. This condition in the system of control in the long-term implies a number of harmful consequences that are manifested through the reduction of production process efficiency, and thus competitiveness and profitability of the business. The aim of this study is to explore the impact of the statistical quality control on the efficiency of production processes in BiH food processing industry.

2. A research review about statistical quality control

Taking into consideration the fact that competition in global markets is increasing more and more therefore quality control is imposed as an inevitable process in all companies. Quality control represents a very important function of all business processes, especially for the process of production characterized by uncertainty, risky and continuous variability. Bearing in mind the fact that the subject of statistical variability in the values of the characteristics of explored phenomena and processes (production process), then it can be said that there is a need for usage of statistical methods in controlling the production process (Fazlović & Kozarević, 2001). It should be pointed out that the statistical methods of quality control in the past did not play a significant role in the business of the company.

Over time, managers have been able to identify the potential and strength of these methods, and thus become irreplaceable tool in decision-making and management. Quality control begins with a complete analysis of the production process with the aim of identifying all the factors that affect its normal functioning. It is essential that production control is a continuous process and that it is achieved both in the input phase (preventive control), in the phase of transformation and in the phase of the results (corrective feedback control). Evolution of quality can be seen through changes in quality control, which has so far gone through several phases (Žmuk, 2010, p. 244).

The first phase in the quality control development refers to the control and inspection of finished products as well as the separation of good products from bad ones (quality inspection, QI). This stage is related to the end of the 19th and beginning of the 20 century and outbreak of industrial production.

In this phase, quality control is carried out by a manufacturer and there is no special control function.

The second stage of development implies a technical aspect of quality control (QC), which covers a period from the late 1930s to the late 1950s of the twenty century.

The third phase is known as a quality assurance (QA) and refers to the period of the 1960s and the beginning of the 1970s. An important change that characterizes this stage is the aspiration towards preventing of errors, instead of recent detection of errors during production (Jašarević, 2010, p. 73).

In the year 1987, ISO 9000 was formed, that represents a set of international standards for quality, which initiated the fourth stage of quality development, known as quality management (QM). Quality care was a management thing that was transferred to all departments and employees in the organization. The fifth phase is linked to the concept of total quality management TQM, which implies continuous improvement of work at all levels and functions of the organization.

The last, sixth phase of development is characterized by the approach towards Business Excellence, which many consider to be a fundamental strategic goal.

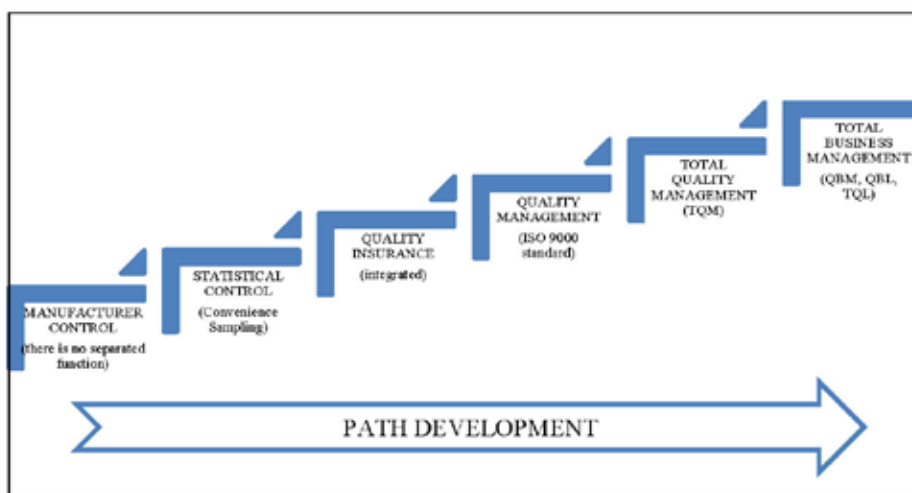The following figure shows the development of statistical quality control through 6 phases.

Figure 1. *Phases of the statistical quality control development*

Source: Radovanović & Đekić, 2011, pp. 1-3

Today's perception of quality is the result of the interaction between learning and philosophy of the quality guru, which marked the quality movement since 1930s of the last century (Lazibat, 2009, p. 15).

Although a significant number of researchers devoted their life to quality, in the period from World War II to the present day, three groups have been specially in focus: (1) so-called *Early Americans*, who influenced a development of thoughts about quality in Japan (W.A. Shewhart, W.E. Deming, J. Juran and A. Feigenbaum), (2) *Japanese*, who developed the concept of quality on the basis of learning of the so-called *Early Americans* (K. Ishikawa, G. Taguchi and Š. Šingo) and (3) the *New Western Wave,* who raised the level of quality awareness in Western Europe (F. Crosby, T. Peters and K. Meler).

Statistical quality control was the subject of many authors' research in the world and in our country. In the following text, only one part of the research in this area will be presented, which are considerably larger than the above mentioned.

Montgomery (2009) in his paper did a research about the importance of using modern statistical methods for controlling and improving quality. In this regard, it particularly emphasizes the importance of control charts that enable: (1) reduction of process variability, (2) monitoring and supervision process, and (3) process parameter estimation.

In his doctoral dissertation titled "Statistical Methods and Models for Quality Control and Production Process Enhancement", Resić (2009) has explored the influence of statistical control on the success of a company and strengthened its competitive advantages. The results of this research have shown that a more developed quality management system has a positive impact on the growth of business performance, and that quality care should be shared by all those involved in business operations. Also, the author points out that processes and product quality control methods and products are a very important factor in the success of every business.

It is also important to point out the research by Janković - Milić and Krstić (2002) who pointed out that statistical control of the process contributes to obtaining better results while reducing at the same time spending of the raw material and energy consumption. Quality control costs and error-correction costs are reduced because errors are detected on time. The authors emphasize the importance of statistical control in terms of increasing the overall efficiency of the process, and thus of the company as a whole.

3. Research methodology

Empirical research was conducted by the survey method. The structured questionnaire used in the research was created in accordance with the set research objective, which is to gain answers on question about the effects of statistical quality control in the food industry of BiH. Closed and open questions were used when selecting a type of question. The questionnaire was developed on the basis of relevant literature in the field of statistical quality control and production management, and using results of previous researches as well as scientific methods.

Register of Business Entities was used as data source for defining the framework of a representative sample. This Register is available on the web pages of the Foreign Trade Chamber of BiH.

The target population of the basic group for research was consisted of legal entities from the food industry sector operating in the territory of BiH. Random sample was used during selection of companies within the mentioned stratums, taking into account the territorial representation, and involvement of the different production groups within the food industry and the size of the company, in order to obtain a complete picture of the current state of the food industry in BiH.

Questionnaires were distributed by e - mail or personal contact to addresses of 50 companies. During the research period (from June 2016 to December 2016) 32 completed questionnaires (or 64%) were returned with answers, which is satisfactory for the purpose of this research. Descriptive and inferential statistics were used during the data analysis, and the data obtained was processed in Statistical Package for Social Science (SPSS) 20.0 for Windows.

4. Analysis and discussion of the research results

The conducted survey is based on a questionnaire for quality or production managers in the food processing companies of BiH.

As part of the descriptive statistical analysis, the most important characteristics of the companies involved in the research (place and year of establishment, legal status, ownership structure, company size, *etc*.) have been analyzed

in detail. In the following paper, the results of the descriptive analysis are presented on the basis of the data collected from the companies covered by the survey, according to the order of the questions in the questionnaire.

As far as the geographic representation of the company is concerned, according to the results of the research it can be concluded that the structure of the company is heterogeneous, given that companies of the Federation of Bosnia and Herzegovina (26 or 81%), Republic of Srpska (4 companies or 13%) and the Brčko District (2 companies or 6%).
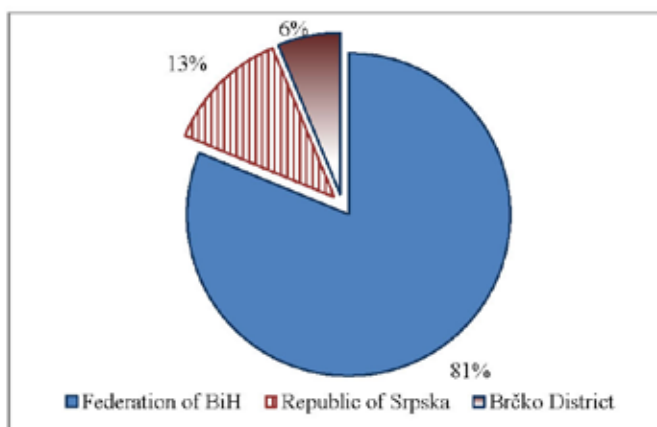

Figure 2. *Structure of the companies according to the geographic representation*

According to the food industry, the largest number of surveyed companies was in the group "Production of other food products", which refers to the production of sugar, chocolate, tea, coffee, spices and other food products (7 companies or 21.9%). After that, there are production groups related to meat processing and production of meat products, dairy production and beverage production (5 companies or 15.6%). Four companies produce bakery products, flour and pastry products, three companies are related to processing and preserving of fruits and vegetables, two companies with mill products, while only one company is engaged in the production of vegetable and animal oils and fats.
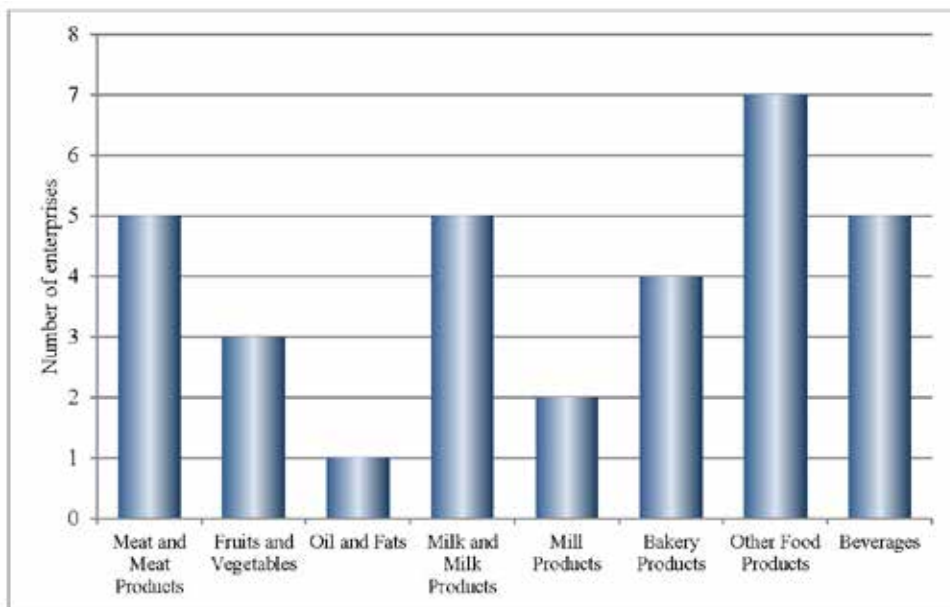
Figure 3. *Structure of the company according to the classification of the company*

When it comes to ownership structure, it should be noted that all surveyed companies (32) are privately owned. According to the data collected in the questionnaires, it is apparent that in the structure of the company, regarding the size of the company, medium company are mostly represented (15 companies or 46.88%), then small company (13 companies or 40.62%), and large (4 companies or 12.50%). When it comes to possession of quality certificates, 25 companies answered that they have the appropriate quality certificate, while four companies are in the process of acquiring one, while two companies (one founded in 2016) have no quality certificate.
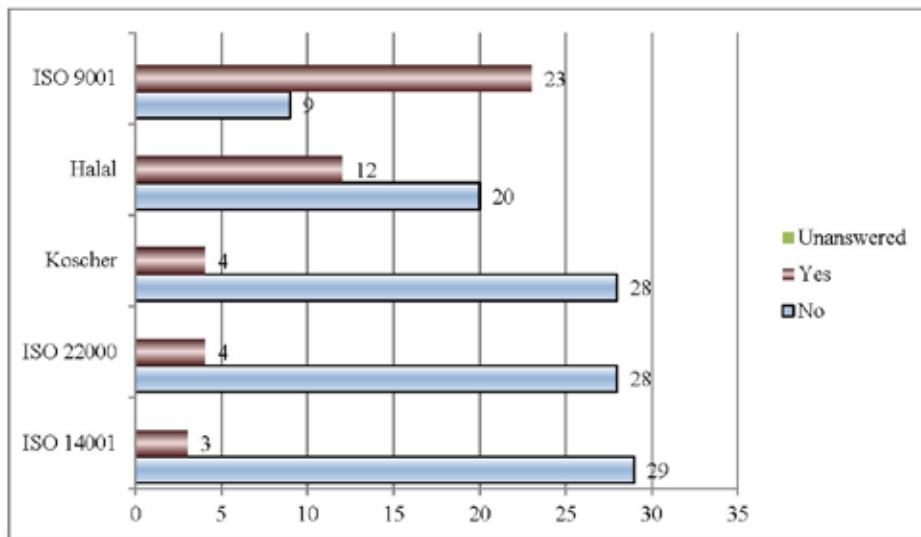
Figure 4. *Certification of surveyed companies*

Source: Authors' research

According to type of quality certificate, it can be noted that the largest number of analyzed companies possesses the ISO 9001 certificate (23 companies or 71.88%), while 9 of them do not own (or are in the process of acquiring) the specified certificate. Also, a significant number of companies have a HALAL certificate (12 companies or 37.5%), while Koscher (4 companies), ISO 22000 (4 companies) and ISO 14001 (3 companies) certificates own very small portion of companies.

Multiple regression analysis was used to check the main research hypothesis about the influence of the production process. Using multiple regression analysis, the power of each independent variable is evaluated, *i.e.* it is measured how much it would improve a model that is consisted of a series of independent variables. It actually shows how much of the variable variance varies depending on the variation of independent variables.

Dependent variable in the model is the efficiency of the production process while independent variables are: application of statistical quality control methods (x_1), application of control charts in production process (x_2), significance of Quality Management Service according to companies assessment (x_3), significance of control records production process (x_4) and production process control (x_5). Prior to the testing of the research hypothesis, a reliability measurement of the

scale was performed, showing the degree of its resistance to random errors. It is a special feature of the scientific method that allows the repetition of the research process, regardless of whether the same researcher or another is carrying out this process. This means that in repeated research we come to similar results, which confirms the knowledge we obtained so far.

There are a number of models that measure the reliability of the measure scales, and among the most commonly used is the Cronbach's alpha model. This model is based on the determination of internal consistency between the characteristics that make up the construction of the mentioned generic instrument for measuring the observed variables. The higher value of the alpha coefficient indicates greater reliability, *i.e.* it shows that attributes of the same factor measure the same phenomenon. It is preferred that a Cronbach's alpha coefficient is greater than 0.7.

The Cronbach's Alpha coefficient for the "production process efficiency" indicator is 0.919, which shows very good reliability and internal consistency for this sample. In addition, the value of the standardized item alpha is almost equal and it is 0.920, which further confirms the reliability of the measuring scale. When it comes to the reliability of the independent variables related to statistical quality control, it should be noted that this scale is also reliable, since the value of the Cronbach's coefficient is 0.966. The following table shows descriptive statistics for independent variables.

Table 1. *Descriptive statistics for independent variables*

	Mean	Standard deviation	Mode	Median	Minimum	Maximum
Application of statistical quality control methods	3.53	1.20	3	3.5	1	5
The degree of application of control cards in the production process	3.11	1.39	3	3	1	5
The significance of the Quality Management Service	4.14	1.20	4	4	3	5
The significance of the records about control of the production process	3.97	1.16	5	4	1	5
Control of the production process	4.29	0.85	5	4.5	2	5

Source: Authors' research

When it comes to the dependent variable "production process efficiency", it should be noted that it is measured by a greater number of indicators. In order to measure the efficiency of the production process by only one number (result), the production process efficiency indicator (PPEI) was formed. This indicator was made in such a way that the respondents assessed the degree to which they are related to the issues related to the efficiency of the production process (the proportion of products with defect, the quantity of scrap in production, the number of accidents at work, the frequency of the equipment failure, the number of hours of interruption, corrective and preventive measures, number of complaints and appeals, process transparency, maintenance costs, and labor costs). We used one to five grades (1 - completely disagree, 5 - completely agree) in order to assess situation. Finally, the number of points for calculating production process efficiency indicators is calculated as the average value of all indicators. The table below shows descriptive statistics for the production process efficiency indicator.

Table 2. *Descriptive statistics for production process efficiency indicator*

	Mean	Standard deviation	Mode	Median	Minimum	Maximum
PPEI	4.03	0.616	5	4	3.09	5.00

Source: Authors' research

From the table we can notice that the average value of the production process efficiency indicator is 4.03, while the median value is 4. The average deviation of the PPEI value from the arithmetic mean in the analyzed sample is 0.616 and it ranges from 3.09 to 5.00 points, which is 1.91. In the following table are presented basic parameters of the multiple regression analysis models.

Table 3. *Representation of the basic regression – correlation models*

Model	R	R cquare	Adjusted R square	Std. error of the estimate
1	0.960	0.921	0.890	0.19908

Source: Authors' research

The table shows that the coefficient of multiple linear correlations is 0.96, which suggests that there is a very strong positive linear correlation between the observed variables. A specific indicator for the representation of the multiple regressions is a coefficient of multiple determinations that shows

the percentage of the variation of the dependent variable explained by the common influence of the independent variables included in the model. The values of this coefficient are in the interval between 0 and 1. It should be noted that the model is more representative as the coefficient is closer to the unit. Taking into account the size of the sample, as well as the fact that a certain number of surveyed companies submitted incomplete questionnaires, a correction coefficient of determination will be applied when interpreting the model. In this model, the coefficient is 0.89, which means that these independent variables determine 89% of the changes in the efficiency of the production process. The p-value of the ANOVA test is 0.000, meaning that the model is significant. The following table will show how much the variable in the model contributed to the prediction of the dependent variable based on the standardized beta coefficients. Standardized beta coefficients mean that variable values are converted to the same scale so that they can be compared, while multiple regression equations are used for non-standardized coefficients.

Table 4. *Evaluation of independent variables in the initial regression-correlation model*

	Unstandardized coefficients		Standardized coefficients	T	Sig
	B	Std. error	Beta		
(constant)	1.441	0.305		4.732	0.000
x_1	0.241	0.065	0.483	3.734	0.003
x_2	0.076	0.047	0.176	1.632	0.127
x_3	0.571	0.088	0.680	6.493	0.000
x_4	0.237	0.082	0.460	2.875	0.013
x_5	-0.420	0.138	-0.597	-3.042	0.009

Source: Authors' research

Based on the shown beta coefficients, it can be concluded that the highest value of the beta coefficient (0.68) has a variable x_3 ("significance of the Quality Management Service"). This means that this variable contributes mostly to the explanation of the dependent variable "production process efficiency". After that go variables x_1 - the application of statistical quality control methods (0.48) and x_4 - production process control records (0.46). Since the independent variable x_2 in the observed model has a p value greater than 0.05 (0.127), its influence on the dependent variable cannot be considered significant.

5. Conclusion

We came to the conclusion by doing this research about the food industry in BiH that there are evident opportunities related to the development of this branch of industry on the substitution of imported food products and the possibilities of exporting environmentally clean, safe and healthy foods. In order to achieve these development opportunities, it is necessary to stimulate the introduction of modern technological and managerial concepts that will enable progressive reduction of production costs on the basis of higher productivity. In this way, it would increase the level of utilization of existing production capacities. The research has also shown that, when it comes to monitoring the production process, the largest number of companies keeps records with the appropriate forms and tables, while the software application is considerably less represented.

This confirms the fact that our economy falls behind when it comes to the application of the modern technical solutions (software) in relation to developed countries. Multiple regression analysis was used to check the main research hypothesis. After the analysis, it was concluded that there is a very strong positive linear link between the observed variables, *i.e.* that the application of statistical quality control in the food industry of BiH has a statistically significant effect on the efficiency of the production process. When interpreting the results of the realized research it is necessary to consider certain limitations of the research. Most importantly, it is necessary to point out a used instrument (questionnaire) which was filled in by the selected representatives of each company. Such an instrument of study itself refers to the possibility of a subjective assessment of the actual situation, since the use of the Likert scale and the questionnaire inevitably lead to a certain degree of subjectivity that cannot be avoided. There should be also pointed out a limitation on the availability of a significant number of official documents, reports and data related to the control of the production process by the surveyed companies.

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SOFTWARE SUPPORT TO RISK MANAGEMENT PROCESS

SOFTVERSKA POTPORA ZA PROCES UPRAVLJANJA RIZICIMA

Abstract

Risk management process should provide systematic recognition of risk in business in its early stage. It is based on risk analysis and assessment including recognition, quantification, and ranking of risks by overall organizational objectives and risk tolerance. Appropriate software support enables managers to take a proactive, risk-based approach in each step of risk management process: determining the relation of risk and objectives of the organization, identifying exposures to loss, measuring exposures, selecting alternatives, implementing a solution, and monitoring the results. Software support for risk management process is crucial for efficient risk evaluation and assessment, continuous monitoring, reporting and easier improvement of that process.

The authors conducted the empirical research in order to find if there are any differences in the importance of some functional characteristics of enterprise risk management software (ERM) related to the size of the company. The sample comprises of 92 companies (27 large, 26 medium and 39 small and micro companies) whose employees in charge of risk management fulfilled online questionnaire. The results of the research showed that there are significant differences related to the functional software characteristics requested by large, medium, and small and micro companies. For example, for larger companies, it is important that software

provides customization of the organization's hierarchy and working with multiple organizations, while those characteristics are less important for smaller companies. The research results showed that user requirements related to ERM software depend on the size of companies. ERM software vendors should consider offering full (for large and medium companies) and light (for small and micro companies) version of their software with the possibility for easy switch from light to full version as the company grows up.

Keywords: enterprise risk management software, ERM, functional ERM software characteristics, risk management process

JEL: L86, G31

Sažetak

Proces upravljanja rizicima trebao bi omogućiti sustavno prepoznavanje rizika u poslovanju i to u ranoj fazi. Temelji se na analizi i procjeni rizika, uključujući i prepoznavanje, kvantifikaciju i rangiranje rizika na osnovu sveukupnih organizacijskih ciljeva i razine tolerancije rizika. Odgovarajuća softverska potpora omogućava menadžerima proaktivni, na rizicima temeljen pristup u svakom koraku procesa upravljanja rizicima: utvrđivanju povezanosti rizika i ciljeva organizacije, identificiranju izloženosti gubitku, mjerenju izloženosti, odabiru alternativa, primjeni rješenja i praćenju rezultata. Softverska potpora procesu upravljanja rizicima je krucijalna za efikasnu evaluaciju i procjenu rizika, stalni nadzor, izvješćivanje i jednostavnije poboljšanje tog procesa.

Autori su proveli empirijsko istraživanje kako bi spoznali postoje li razlike u važnosti pojedinih funkcionalnih karakteristika softvera za upravljanje rizicima u poduzeću (ERM), s obzirom na veličinu poduzeća. Uzorak je obuhvatio 92 poduzeća (27 velikih, 26 srednjih i 39 mala i mikro poduzeća), čiji su djelatnici zaduženi za upravljanje rizicima popunili online upitnik. Rezultati istraživanja su pokazali da postoje značajne razlike u odnosu na funkcionalne softverske karakteristike koje zahtijevaju velika, srednja, mala i mikro poduzeća. Na primjer, za veće kompanije je bitno da softver omogućava prilagodbu organizacijskoj hijerarhiji i rad s više organizacija, dok su te karakteristike manje bitne za manja poduzeća.

Rezultati istraživanja su pokazali da korisnički zahtjevi u odnosu na ERM softver ovise o veličini kompanija. Proizvođači ERM softvera trebali bi razmotriti mogućnost nuđenja proširene (za velika i srednja poduzeća) i osnovne (za manja i mikro poduzeća) verzije svoga softvera, uz mogućnost jednostavnog prijelaza s jedne verzije na drugu kako poduzeće raste.

Ključne riječi: softver za upravljanje rizicima u poduzeću, ERM, funkcionalne karakteristike ERM softvera, proces upravljanja rizicima

JEL: L86, G31

1. Introduction

Long ago, financial institutions like banks and insurance companies recognized the necessity of risk management because their core business is highly risky. However, last two decades showed that business world is constantly changing, that it has become unpredictable, volatile and more complex every day. It is obvious, that such a world is by its very nature fraught with risk, meaning that today's organizations have to find a way how to manage and cope with different kinds of risks. In the past, businesses have viewed risk as a threat that should be minimized or mitigated whenever possible. In recent years, increased regulatory requirements have forced businesses to expend significant resources to address risk, and shareholders, in turn, have begun to scrutinize whether businesses had the right controls in place. In the current global economic environment, identifying, managing, and exploiting risk across an organization has become increasingly important to the success and longevity of any business (PW, 2008). During the time the definition of risk has changed from "the chance of something happening that will have an impact on objectives" to the ISO 31000 definition of risk as "the effect of uncertainty on objective" (AS/NZS, 2010, p. 1).

The ISO 31000 definition of risk shifts emphasis from past preoccupations with the possibility of an event (something happens) to the possibility of an effect and, in particular, an effect on objectives. Risk, therefore, is neither positive nor negative but the consequences the organization experiences may vary from loss and detriment to gain and benefit. When risk is defined like this, it reveals more clearly that managing risk is a process that achieves objectives more likely. Risk treatment is then concerned with changing the magnitude and likelihood of consequences, both positive and negative, to achieve a net increase in benefit (Purdy, 2010, p. 882). Risk management is a systematic approach for minimizing exposure to potential losses. It provides a disciplined environment for continuously assessing what could go wrong (*i.e.*, assessing risks) determining which risks to address (*i.e.*, setting mitigation priorities) implementing actions to address high-priority risks and bring those risks within tolerance (AS/NZS, 2010). ERM is not strictly a serial process, where one component affects only the next. It is a multidirectional, iterative process in which almost any component can and does influence another. Although ERM provides important benefits, open issues exist. Some of open issues that make the burden of risk management process are:
- The realities that human judgment in decision-making can be faulty (incorrect risk identification, incorrect risk assessment, weak monitoring, *etc*.).

- Decisions on responding to risk and establishing controls need to consider the relative costs and benefits.
- Breakdowns can occur because of human failures such as simple errors or mistakes.
- Controls can be circumvented by collusion of two or more people.
- Management can override ERM decisions.

In order to resolve those issues and ensure that process of risk management flows smoothly, be efficient and effective, it is necessary that organizations applied information technology.

Today's risk management tools and technology vary in maturity and capability. In fact, most organizations are struggling to identify the best way to acquire adequate software solution for risk management process. Vendor solutions purchased to support ERM are harder to categorize, because the market is in rapid transition, with little consensus among leading analysts on market segmentation. Several systems based on insurance risk management (RMIS) now offer ERM features, while others approach the ERM market from an operational risk management or compliance background. Some niche players offer standalone ERM systems.

How these markets intersect depends in part on how one defines the "risk" component in the term Governance, Risk and Compliance (GRC). If "risk" represents all aspects of risk, then traditional RMIS, ERM, operational risk and compliance systems could all be considered part of a broad GRC market. However, if "risk" is defined as more narrowly, as operational risk, then ERM software is distinguished from the GRC market by its strategic focus (Thoits, 2009, p. 10). Finding software that will fit organization's need can be difficult while changing the organization to fit the software overwhelming. Nevertheless, software solutions that provide the ability to customize can significantly reduce the implementation process. In addition, those solutions should fit the corresponding ERM processes. There are as many variations of ERM, at a detailed level, as there are organizations practicing ERM. On the other hand, the functionality of ERM technology solutions is far more consistent across the spectrum of ERM processes. This paper presents the results of empirical research that authors conducted in order to find if there are any differences in the importance of some functional characteristics of ERM software related to the size of the company.

2. Previous research on the topic

The research related to risk management software solutions were done mostly by risk management professional organizations and consulting firms. However, most of this research did not take into account the size of companies nor analyzed the influence of company size to required software characteristics. Technology Advisory Council (TAC) of Risk and Insurance Management Society (RIMS) undertook a survey of ERM technology users with the main goal to define the general functionality of ERM software tools. The participants of the survey were members of RIMS and the Risk Council of Manufacturers Alliance (MAPI). There were 651 participants in total; 49% of whom implemented ERM process. However, of those participants with active ERM, just 48% used ERM software (Thoits, 2009, p. 6). In companies were used 24 different ERM software products. The results of this research showed that companies with greater annual revenue (greater than \$1B) were primarily interested in following ERM software functionalities: dashboards, monitoring, and tracking relating risks and processes, integration with strategic goals and objectives, and analysis.

In 2014, Aon Risk Solutions made risk management software survey. It was analyzed what support was provided by 32 risk management software solutions to 26 different software functionalities proposed by Aon (Aon, 2014). Some of the proposed functionalities were: configurable hierarchies, governance and compliance function, organizational hierarchy, risk appetite reporting, user-defined configuration, audit logs, intelligence tools and so on (Aon, 2014, p. 14).

Research related to users' views about what features a risk management software should have was conducted in the Republic of Croatia and Bosnia and Herzegovina in May 2015 by the authors. The participants of risk seminars organized by "Oskar" – A center for development and quality, from Zagreb, were asked to take part in the research (Gašpar *et al.,* 2015, p. 311). After collecting the questionnaires, a logical and technical control, 41 were interpreted. The set of 29 functional risk management software functionalities (for example: enable integration of standard Key Performance Indicators (KPI) and Risk Indicators, contain standard risk definitions and process taxonomy, be in compliance with the ISO 31000 standard, enable working with multiple organizations, enable customization of organization's hierarchy, enable users to define rights for data access, enable follow-up of history of

events connected with activities and risk being assessed, enable definition of reporting and responsibilities, *etc*.) were offered to participants in order to range them according to their priority. The goal of this research was to find out which attributes are "obligatory" for risk management software. However, the results showed that in both cases (technical and functional characteristics) very small number of software attributes was evaluated as "no need at all", two technical and one functional (Gašpar *et al*., 2015, p. 315). In 2015 Risk. net made risk software survey of 44 risk software products, focused on speed, compliance, and valuation of each solution (Chambers, 2016).

In 2016, Chartis – the provider of global research and analysis for risk technology – published RiskTech100® report that ranking the top 100 risk technology providers in the world. This report only includes companies that develop and sell their own risk management software solutions (Chartis, 2016, p. 7).

The risk management software tools are ranked according to three categories: solution, industry and Chartis categories that include two aspects of functionality: depth of functionality (the level of sophistication and detailed features in the software product) and breadth of functionality (the range of risks covered by software solution).

The RiskTech100® report is result of conducted a market research of 50,000 risk and compliance technology buyers and end users globally (70% in financial services; 30% in non-financial services), completion of 1.500 surveys and interviews with risk technology buyers and end users, finally reviewed by 30 independent consultants and 110 risk technology buyers (Chartis, 2016, p. 29). The RiskTech100® report shows that leading risk software vendors are focusing, in their further development, to cloud-based risk and compliance as a service, 'Toolkit'-based solutions targeted at end users, 'Big Data' and artificial intelligence and machine learning (Chartis, 2016, p. 17).

In 2017 Deloitte, a global financial services industry group published the 10th edition of *Global risk management survey*. The survey was conducted from July to October 2016. It is based on the views of Chief Risk Officers (CROs) or their equivalents at 77 financial services institutions around the world (Deloitte, 2017, p. 4). Although Deloitte's survey was not primarily focused on risk management software solutions, it analysis the ability of technology to address the risks issues.

The survey results, interesting from the technology point of view, show that over the next two years the top priority for the most organizations (78%), related to risk management, will be enhancing risk information systems and technology infrastructure. It is related to the fact that respondents were very concerned about risk technology adaptability to changing regulatory requirements - 52%, legacy systems and antiquated architecture or end-of-life systems - 51%, inability to respond to time-sensitive and ad-hoc requests - 49%, lack of flexibility to extend the current systems - 48%, and lack of integration among systems – 44% (Deloitte, 2017, p. 56).

Additionally, there are web sites that offer a comparison of risk management software solutions from different vendors (Capterra, 2017; GetApp, 2017; SoftvareAdvice_BG, 2017; TechnologyAdvice, 2017), as well as software buyers guides (Quantivate, 2017; BARNOWL, 2017; SoftvareAdvice_BG, 2017). Some of these web sites use the size of the company as a criterion for evaluation and selection of appropriate risk management software solution (GetApp, 2017; SoftwareAdvice_BG, 2017).

3. Research methodology

3.1. Instrument

The survey questionnaire was prepared based on theoretical knowledge and practical experiences in software developing. It consisted of two major parts: a part related to companies (number of employees, income, information about the department for risk management) and a part related to expected functional characteristics of the risk management software. Set of these characteristics is presented in Table 1. The five-degree Likert scale was used to evaluate the characteristics of the risk management software (ratings: 1 – no need at all; 2 – not necessary; 3 – doesn't matter; 4 – preferable; 5 – a must have). Filling out the questionnaires took about 10 minutes.

Table 1. *A set of functional software characteristics*

Code	Software for risk management should …
f1	… enable integration of standard Key Performance Indicators (KPI) and Risk Indicators
f2	… contain standard risk definitions and process taxonomy

f3	... be in compliance with the ISO 31000 standard
f4	... be in compliance with COSO ERM framework
f5	... enable working with multiple organizations
f6	... enable customization of organization's hierarchy
f7	... enable users to define rights for data access
f8	... contain a register of risk management system users
f9	... enable categorization, establishing threat hierarchy
f10	... enable definition of criteria for risk assessment
f11	... enable definition of the risk matrix
f12	... enable definition of a structure for all activities in process or project
f13	... enable definition of the structure of all threats and threat sources that could arise in the structure of activities in project or process
f14	... enable identification of threats and threat sources
f15	... enable risk identification
f16	... enable binding documents with risk
f17	... enable connection of loss with risk
f18	... enable risk analysis
f19	... enable follow-up of the history of events connected with activities and risk being assessed
f20	... enable automatic evaluation and risk ranking
f21	... enable definition of Risk Treatment Plan
f22	... enable definition of reporting and responsibilities
f23	... enable definition of risk treatment rules on the basis of the defined level of risk tolerance
f24	... support the process of risk approval (*i.e.*, risk acceptance....)
f25	... enable risk quantification
f26	... enable qualitative risk assessment
f27	... enable quantitative risk assessment
f28	... enable definition of treat indicators
f29	... enable connection (treatment) of risk (control and action) that is the definition of measures to be taken in the process of risk treatment

Source: Gašpar *et al.*, 2015, p. 313

3.2. Sample

An empirical research based on the appropriate sample was carried out. A total of 278 questionnaires were sent by email. After collecting the questionnaires and a logical and technical control, a total of 92 were interpreted. The return rate is 33.09%. The sample (n=92) consisted of 27 (29.3%) large companies, 26 (28.3%) medium-sized companies, 39 (42.4%) small and micro companies from Bosnia and Herzegovina. Classification, according to the size of the company, is based on the income of the previous year and the number of employees. The most of the companies are domestic (85.9%) and operate in service sector 82.6%). Only 26.1% companies state they have a department for risk management; others negated the existence of that department. According to participants' statements regarding that department, the number of employees goes from 1 up to 6. Regarding the question "Does your company own a software for risk management?" 78.3% of the participants gave a negative response, while others participants gave a positive response (21.7%).

3.3. Data analysis

The characteristics of the company from the sample are expressed as absolute (f) and relative frequencies (%) while the results of the characteristics are expressed as ranks according to means. Microsoft Office Excel 2007 was used for data analysis.

4. Results

The means related to functional software characteristics requested by small and micro companies vary in the range 3.62 – 4.54; for medium-sized companies, they vary in the range 3.77 – 4.58; and for large companies, they vary in the range 4.15 – 4.93. Means of characteristics related to large, medium-sized, and small and micro companies are presented on Figure 1, while ranks of characteristics are presented in Table 1.
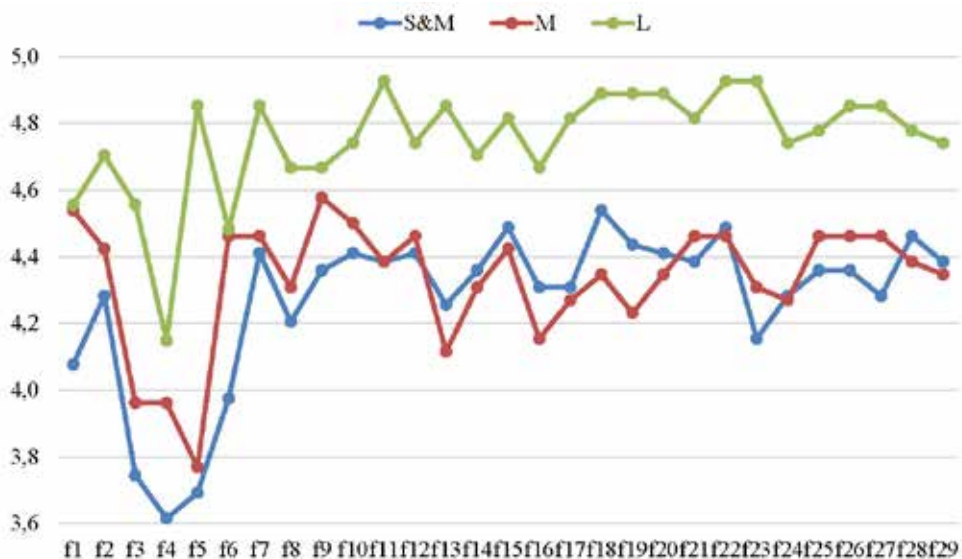
Figure 1. *Means of characteristics according to the size of company*

Source: Authors' research

Table 2. *Rank of characteristics according to the size of company*

Rank	S&M	M	L	Rank	S&M	M	L
1	f18	f9	f22	16	f9	f18	f28
2	f15	f1	f11	17	f16	f20	f10
3	f22	f10	f23	18	f17	f29	f12
4	f28	f22	f18	19	f2	f14	f29
5	f19	f12	f20	20	f24	f8	f24
6	f10	f7	f19	21	f27	f23	f2
7	f12	f21	f7	22	f13	f17	f14
8	f20	f25	f26	23	f8	f24	f9
9	f7	f26	f27	24	f23	f19	f8
10	f11	f27	f13	25	f1	f16	f16
11	f21	f6	f5	26	f6	f13	f1
12	f29	f15	f21	27	f3	f3	f3
13	f14	f2	f15	28	f5	f4	f6
14	f25	f28	f17	29	f4	f5	f4
15	f26	f11	f25				

Note: S&M – small and micro, M – medium, L – large company

Source: Authors' research

5. Discussion

The results of the conducted research show that all respondents, regardless of the size of their company, recognize the necessity of good ERM software in efficient risk management. This conclusion is based on the average grades for proposed functional characteristics of risk management software. All means are over 3.5 (grading scale 1-5), and it confirms the importance of the existence of proposed characteristics in quality and good ERM software.

However, the research shows that the importance of particular functional characteristics of ERM software is related to the size of the company. The highest rating functional software characteristics show that, for respondents from large companies, it is most important that ERM software *enable definition of reporting and responsibilities* (f22), *enable definition of risk matrix* (f11) and *enable definition of risk treatment rules on the basis of defined level of risk tolerance* (f23). Respondents from small and micro companies have results similar to respondents from large companies related to characteristic *enable definition of reporting and responsibilities* (f22). However, those respondents, as the most important characteristics of ERM software, specified *enable risk identification* (f15) and *enable risk analysis* (f18).

Respondents from medium-sized companies differ from the other two categories (large, and small and micro company) of respondents. According to them, three the most important functional characteristics of ERM software are *enabling categorization and establishing threat hierarchy* (f9), *integration of standard Key Performance Indicators (KPIs) with risk indicators* (f1) and *definition of criteria for risk assessment* (f10). All three categories of respondents have similar opinion considering the least important characteristics of ERM software. Thereby the characteristics like *be in compliance with the ISO 31000 standard* (f3) and *be in compliance with COSO ERM framework* (f4) are among the least important one. For respondents from both, small and micro, and medium-sized companies the characteristic *enable working with multiple organizations* (f5) is less important, while the same characteristic is on the considerably higher position (according to an average grade of importance it is in 11th place) in case of respondents from large companies.

In addition to prior explained characteristics, the importance of some other characteristics also varies with regard to the size of the company. So small and micro companies, as opposed to medium-sized and large companies,

specify the characteristic *enable connection (treatment) of risk (control and action) that is the definition of measures to be taken in the process of risk treatment* (f29) as a more important one. On the other hand, the characteristic *enables qualitative risk assessment* (f26) is more important to large and medium-sized companies, while characteristic *enable quantitative risk assessment* (f27) is more important to medium-sized than to large and small and micro companies. It is interesting that small and micro companies were better ranking characteristic *enable binding documents with risk* (f16) than larger companies. The characteristic *enables definition of criteria for risk assessment* (f10) is another one with interesting results. As it was previously explained, this characteristic is one of the three most important characteristics for medium-sized companies. At the same time, the participants from large companies put that characteristic in 17th place. The difference in ranking also exists for characteristic *enable definition of risk treatment rules on the basis of the defined level of risk tolerance* (f23). Namely, this characteristic is among top three functionalities according to participants from large companies, while participants from medium-sized companies put it in the 21st place, and participants from small and micro companies put it in 24th place. The participants from medium-sized companies saw characteristic *enable definition of threat indicators* (f28) as less important while the participants from small and micro companies put this characteristic very high, at 4th place.

The explanations for obtained results can be found in additional characteristics of companies (a type of business, type of product or services they offer, *etc.*) what can be subject to further research.

However, the comparison of this with similar research shows one substantial difference. Namely, that research (Aon, 2014; Chambers, 2016; Chartis, 2016) showed that compliance with standards and volatile regulatory requests are among the most desirable characteristics of risk management software, independently of the company size. The authors' research, conducted in Bosnia and Herzegovina, shows that all three categories of respondents (large, medium-sized, small and micro companies) as the least important characteristics of ERM software saw the characteristics *be in compliance with the ISO 31000 standard* (f3) and *be in compliance with COSO ERM framework* (f4). While the explanation for the characteristic f4 can lay in the fact that the companies in BiH are more oriented towards compliance with European regulations and ISO standard, the explanation for the characteristic f3 is less obvious. One of the reasons while companies in BiH did not see the

compliance with ISO 31000 standard as important one can lay in the fact that Bosnia and Herzegovina is still transition country that struggling to overcome the consequence of the last tragic war which devastated the whole country and its economy. So, most of the BiH companies are at the beginning of the process of ISO standardization and implementation of risk management.

6. Conclusion

Understanding and integrating of risk management as a key part of the business strategy is a crucial step forward both for the risk management and for the development of sustainable performance. The implementation of ERM must be staffed by people with the necessary facilitation, project management, and analytical skills along with knowledge of risk management leading practices. The risk owners ultimately bear responsibility for the assessed levels of risk and defining and implementing risk response plans to bring risks within tolerance. Nevertheless, people are not enough. To be efficient, they must be supported by the right technology. Fortunately, a large number of software vendors have entered the ERM space, and each year brings innovations and improved offerings. Existing software solutions can provide strong support for an ERM process. The organization's objectives and the key risks to achieving those objectives can be made clearly visible to management. Mitigation plans can be systemically approved and monitored. Combinational risks can become more easily identified and managed. Care must be taken, however, to ensure that technology solutions are user-friendly and flexible. Since most ERM processes change over time and technology must be flexible to accommodate those changes.

The research results showed that user requirements related to ERM software depend on the size of companies. The specific of this research is that all three categories of respondents (large, medium-sized, small and micro companies) as the least important characteristics of ERM software saw the characteristics *be in compliance with the ISO 31000 standard* (f3) and *be in compliance with COSO ERM framework* (f4). As explained, the reason for this can lay in the fact that the Bosnia and Herzegovina is still a country in transition, and at the beginning of the process of compliance with European and ISO 31000 standards.

However, this research can help existing and new ERM software vendors to consider offering full (for large and medium companies) and light (for small

and micro companies) version of their software with the possibility for easy switch from light to full version as the company grows up.

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STAGNATION OF THE INSURANCE MARKET OF THE SOUTH-EASTERN EUROPE

STAGNACIJA TRŽIŠTA OSIGURANJA JUGOISTOČNE EVROPE

Abstract

Many political, economical and demographic factors influenced the region of the South-Eastern Europe (SEE) in recent years, making an indirect influence on the insurance sector of the region. Following the other fields of economy, stagnation with slight increase of the insurance sector in most of the countries, except Greece where premium volume significantly decreased, made insurance market of the region still far behind the Western Europe level. The experience from the last decade is not providing much better expectation especially if we consider the process of legal and institutional reform which is very slow in some countries.

Based on official data, the paper shows a large difference of the agregate indicators of insurance development levels between the SEE region and countries that are members of European Insurers Association (Insurance Europe), but also among countries of the SEE depending on their macroeconomic environment and level of development of financial sector.

The analysis shows that, for the countries that recently joined the European Union, stagnation of the sector is more evident than in the non-member countries where the premium volume is increasing. It looks like the first group of countries reached the limits considering their economies, while the second group of countries still has potential for the market growth. Therefore, the reasons for such trendsshould be analysed considering some internal changes on the market or some other macroeconomic issues.

The long-term comparative analysis based on various criteria and data from the period 2006-2015 will be used in the paper with the aim to recognize the main obstacles for SEE markets development and the expectations for the markets in the following years.

Keywords: insurance market, South-Eastern Europe (SEE), comparative analysis

JEL: G22

Sažetak

Mnoge političke, ekonomske i demografske promjene utjecale su na Regiju Jugoistočne Evrope (JIE) posljednjih godinašto je indirektno utjecalo na sektor osiguranja u regiji. Prateći druga područja ekonomije, stagnacija sa blagim porastom sektora osiguranja u većini zemalja regije, izuzev Grčke gdje je obim premije značajno smanjen, dovela je do toga da sektor osiguranja još uvijek značajno zaostaje za Zapadnom Evropom. Iskustva iz posljednje dekade ne nude mnogo bolja očekivanja, naročito ako uvažimo proces zakonske i institucionalne reforme koji u nekim zemljama teče veoma sporo.
Korištenjem zvaničnih podataka, u radu je prikazana velika razlika u agregatnim pokazateljima za nivoe razvoja zemalja JIE i zemalja članica Evropske asocijacije osiguravatelja (Insurance Europe), ali i između zemalja JIE zavisno od njihovog makroekonomskog okruženja i nivoa razvoja finansijskog sektora.
Analiza pokazuje da je, za zemlje koje su se nedavno pridružile Evropskoj uniji, stagnacija sektora evidentnija nego kod zemalja koje nisu članice gdje je obim premije u porastu. Kao da je prva grupa zemalja dostigla limite s obzirom na svoje ekonomije, dok druga grupa zemalja još uvijek ima potencijala za rast tržišta. Zbog toga, razlozi za takve trendove trebaju biti analizirani uvažavajući neke interne promjene na tržištu ili neka druga makroekonomska pitanja.
U radu će biti provedena dugoročna komparativna analiza zasnovana na različitim kriterijima i podacima za period 2006-2015. godina, sa ciljem da se utvrde glavne prepreke za razvoj tržišta JIE i očekivanja za tržište za naredne godine.

Ključne riječi: tržište osiguranja, Jugoistočna Evropa (JIE), komparativna analiza

JEL: G22

1. Introduction

Most of the economies of the South-Eastern Europe (SEE) are still burdened with the transition process and process of integration to the European Union (EU). On the other side, Turkey is a positive example of a country with significant economic development but it suffers problems related to the wars on its eastern border, while Greece as the EU member is facing the largest economic problems.

The analysis of data about insurance markets of the SEE in 2006-2015, collected from official reports of relevant institutions as well as from the research conducted among the insurers associations, shows that the general trends in economies mostly reflect on the insurance sector, but some discrepancies are noticed. Since

development of insurance markets is greatly determined by macroeconomic and social conditions, the present situation in most of the countries, both on macroeconomic plan and insurance market, is still not at the desired level. Basic indicators of the insurance markets development are still bellow a satisfactory level, with small participation of insurance in the financial sector.

Following analysis shows the many obstacles that can be seen by low levels of GDP, high rates of unemployment as well as low standard of living. As consecquence of that, insurance premium growth is still followed by poor products' structure. Dominance of the Motor Third Party Liability (MTPL) insurance in the premium structure requires special attention to this type of product and its impact on the overall market. Legal and insitutional reform process needs to be continued and accelerated if the region wants to be a part of the developed European market.

2. Review of the previous research

There are plenty ofarticles and studies focused to the analysis of the insurance markets. Many authors conducted research on the various aspects of the insurance business in the countries of the SEE and EU (Šain & Taso, 2012, pp. 97-255; Selimović, 2017, pp. 93-176; Novović *et al*., 2014, pp. 31-43; Kjosevski, 2011, pp. 34-39). There are also various articles focused to the trends and specifities of particular insurance markets in the region and their comparation to the rest of the Europe (Kostić *et al*., 2013, pp. 395-418; Yildirim, 2015, pp. 1-16).

On the other side, there is only a few articles that are focused to analysis of agregate indicators for the SEE region (Kozarević *et al*., 2013, pp. 139-164). Most of the authors are focused to the Central and Eastern Europe (Pukala, 2014, pp. 95-110) and including only a few countries of the SEE (Kosmala, 2016, pp. 109-125). This research is unique because it includes twelve countries of the SEE and the last available data for the markets in order to recognize the last trends and changes.

3. Methodology and data analysis

Using available sources from EUROSTAT and World Bank databases, we will first make short analysis of macroeconomic environment for the region and after that we will present a comparative analysis of the main indicators of insurance sector.

In spite the fact that most of the countries of the SEE had continuity of the economic growth during last few years, dynamics of the EU integration process in thecountries, with some exceptions, is almost copied to the development of their economies as well as insurance markets. The following analysis will confirm this statement.

The effects of the financial crisis most affected Greece, which still does not show signs of recovery. The crisis caused a permanent loss of jobs followed by an increase of unemployment rates in almost all countries. Most of the countries focused on reduction of salaries in the public sector, without significant investment activities. High rate of unemployment is still one of the biggest problems for most countries.

Based on World Bank data Albania, BiH, Croatia, Greece, Kosovo, Macedonia, Montenegro, and Serbia are the countries with rate of unemployment above 15%. Similarly, only Greece and Slovenia have average saleries above EUR 1.000, and Croatia and Turkey above EUR 500, while the other countries have less than EUR 500. Unfavorable demography and emigration are the consequences of a significant decline in working-age population. These trends are expected to be even more present in the future as the EU labor market opens. Croatia, BiH and Serbia suffered natural catastrophe during 2014 that additionally endangered the state of their economies.

Despite of political instability and refugee crisis, the region still have positive prospects and the growth is expected in the next few years, depending of general changes in the EU economy. Considering EUROSTAT database (EUROSTAT, 2016), total population for the SEE countries in 2015 reached almost 144 million which is 28,2% compared to the EU population but data for Greece, Slovenia, Bulgaria, Romania and Croatia are included in both groups (SEE and EU). All countries, excepting Greece, had positive real GDP growth between 0,8-4,1% in 2015. The growth of 2,8% for the whole region in 2015 was the best result in the recent years. Similarly, real GDP growth in the EU countries in 2015 was 2,2%. A total GDP of the SEE countries in 2015 was EUR 1.181 billion or 8% of the EU total GDP (EUR 14.714 billion). GDP per capita in the SEE region in 2015 was EUR 8.224, and it 3,5 times lower than GDP per capita in the EU (EUR 28.900). The data about GDP per capita from Figure 1 shows the economic environment in the SEE countries in 2015 on the best way.
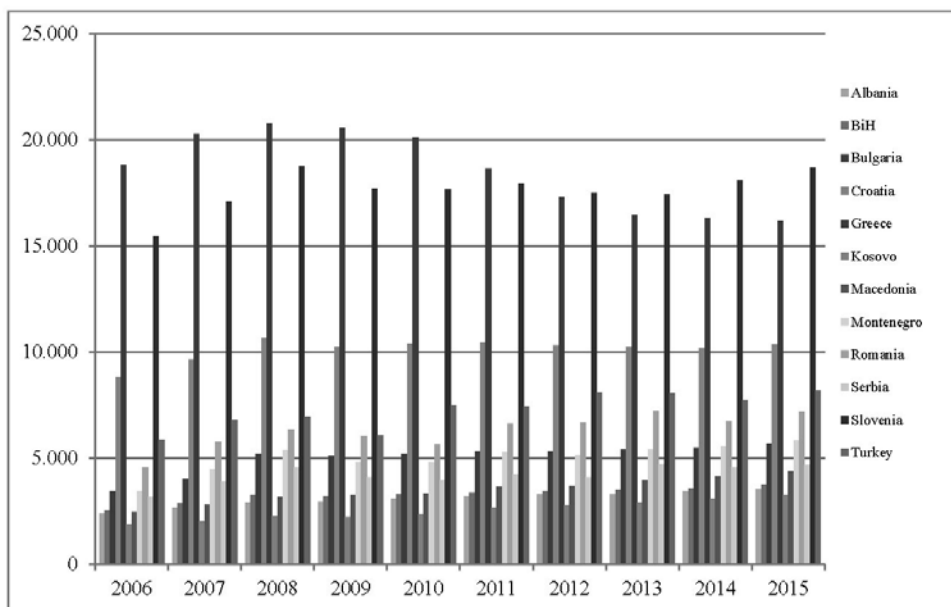
Figure 1. *GDP per capita in the period 2006-2015 (EUR)*

Insurance market regulations of the SEE countries can be observed in the context of adaptation to the new European insurers' regulations, Solvency II. Only a few countries, already EU members, followed the deadlines for implementation of Solvency II regime on the national regulatory framework. There are many reasons for this lag, but the key problem is still underdeveloped market followed by poor institutional infrastructure that can not follow the rules existing on the developed EU insurance market.

Most of regulation in the countries is not in accordance to Solvency II regime and some countries are still striving to fully implement Solvency I regime. There are some good examples, like Slovenia, Croatia and Greece that are supposed to follow EU standards, but most of the others are going to adapt to the new standards as they are approaching to the EU.

Most of changes in the legal environment were aimed to provide better regulation of MTPL insurance market and to raise capital standards in order to enhance level of confidence to insurance market and to provide better customer protection.

During the last ten years, the institutions necessary for market regulations are mostly completely created in all countries and that is very important condition necessary for implementation of the regulations. Supervision bodies are organized on different ways, as independent agencies, as a part of general supervisory bodies for the whole financial market or as special features within the central banks.

Since financial sectors in the region are mostly bankocentric and the share of the insurance in the total financial assets is very low, the activities of the governments in the recent years were mostly focused to provide better regulation of the banks. Insurers are still waiting to be recognized as important subject of interest of the governments' policies.

In the market review we will compare the indicators of the SEE with the values reached by the European insurance associations (Insurance Europe), considering the fact that many countries of the SEE are already members of the IE.

Total premium of the SEE insurance market in 2015 reached amount of EUR 21.018 million with decrease after 2008 and a slight increase during last five years in almost all countries, except Turkey that had significant growth of premium.

As Figure 2 shows, a decrease of the premium was noticed in the region most developed markets of Greece, Slovenia and Croatia and it was caused by financial crisis or by MTPL market liberalization in case of Croatia.

At the same time, the SEE market made only 1.8% of the total insurance premium of the IE members in 2015 which was EUR 1.199.714 million.
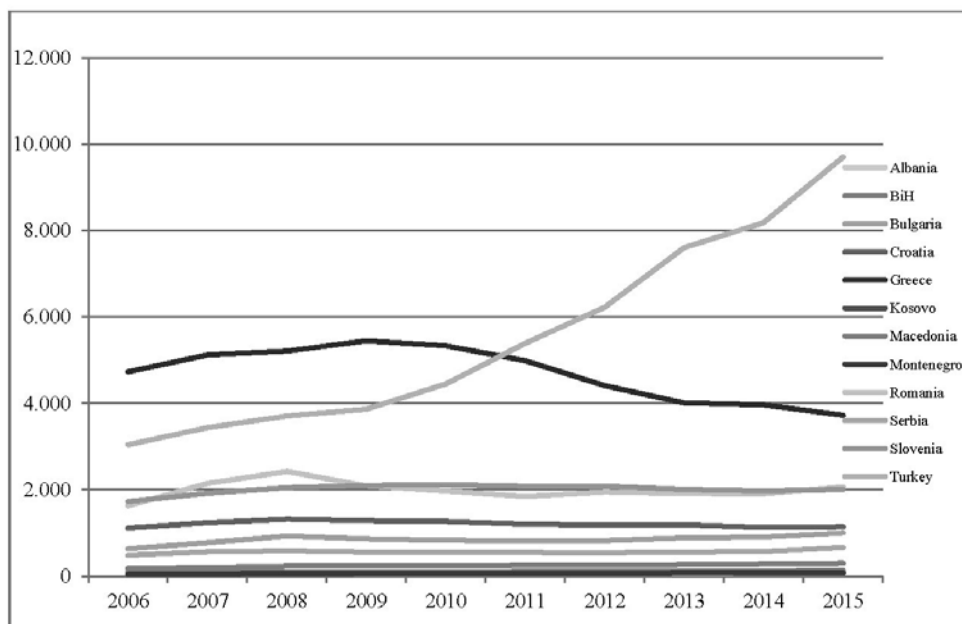
Figure 2. *Total premium in the period 2006-2015 EUR (millions)*

Source: Official reports of countries' supervisory institutions

Better view of the market development we can get if we look at data about market penetration (Figure 3) and market density (Figure 4).

Average share of the insurance premium in GDP for the SEE countries in 2015 was 1.78%, while average insurance premium per capita was EUR 146.35.

In the IE association members in 2015 insurance penetration was 7.4% and insurance density was EUR 2.010.

These indicators for the SEE region are critical with 4.2 times lower insurance penetration and 13.3 times lower insurance density level.

The indicators of insurance density for the SEE region would be much worse if we excluded Slovenia (EUR 975) and Greece (EUR 343), because out of the remaining countries only Croatia (EUR 271) had insurance density above EUR 200.

All the other countries in the region still have characteristics of poor insurance markets.
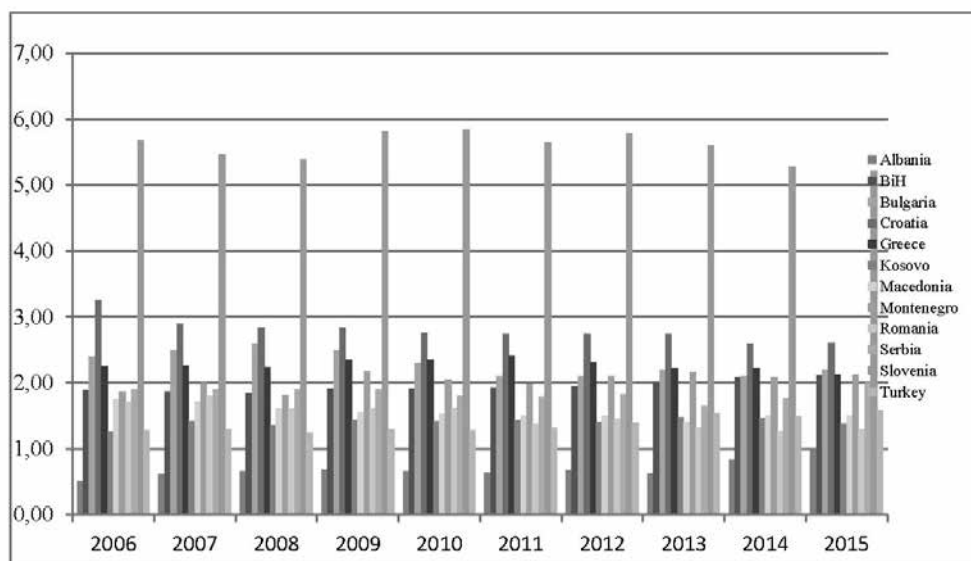
Figure 3. *Insurance penetration in the period 2006-2015 (% of GDP)*

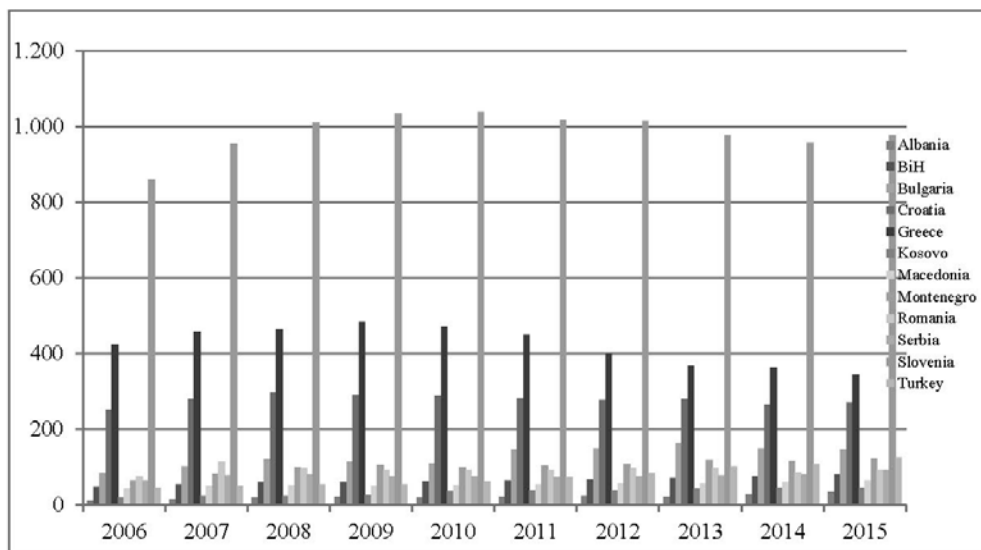Source: Official reports of countries' supervisory institutions

Figure 4. *Insurance density in the period 2006-2015 (EUR)*

Source: Official reports of countries' supervisory institutions

An indicator of poor insurance culture is low share of life insurance in total insurance premium. The average share of life insurance in the region in 2015

was 23.1%, while the average share in the IE members was 60.9%. That shows that insurance products offer in the region is still not developed enough to follow EU standards. On the other hand, because of low life standards in the countries, insured are still mostly interested only for the basic nonlife insurance products.

From Figure 5 we can see that only Greece, Croatia and Slovenia had share of life insurance above 25% in 2015. Simultaneously, MTPL, as an obligatory insurance product, is the most sold product in most of the countries.

Average market share of MTPL for selected eight countries shown on Figure 6 was 26.2% in 2015. Dominance of MTPL is the most evident in BiH, Macedonia and Montenegro, covering more than 40% of the total premium.
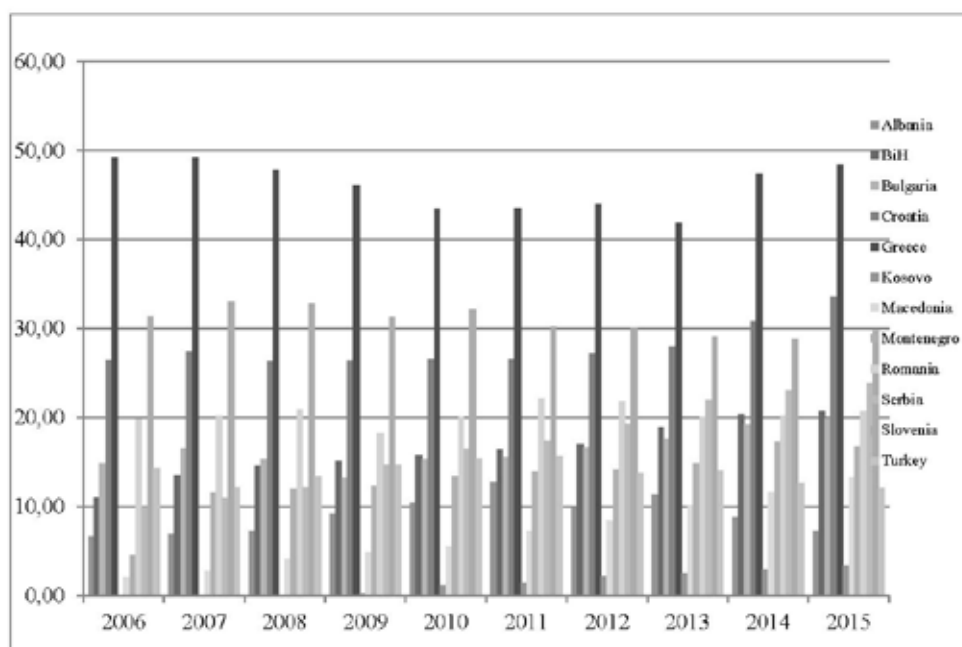

Figure 5. *Share of life insurance in total premium in the period 2006-2015 (%)*

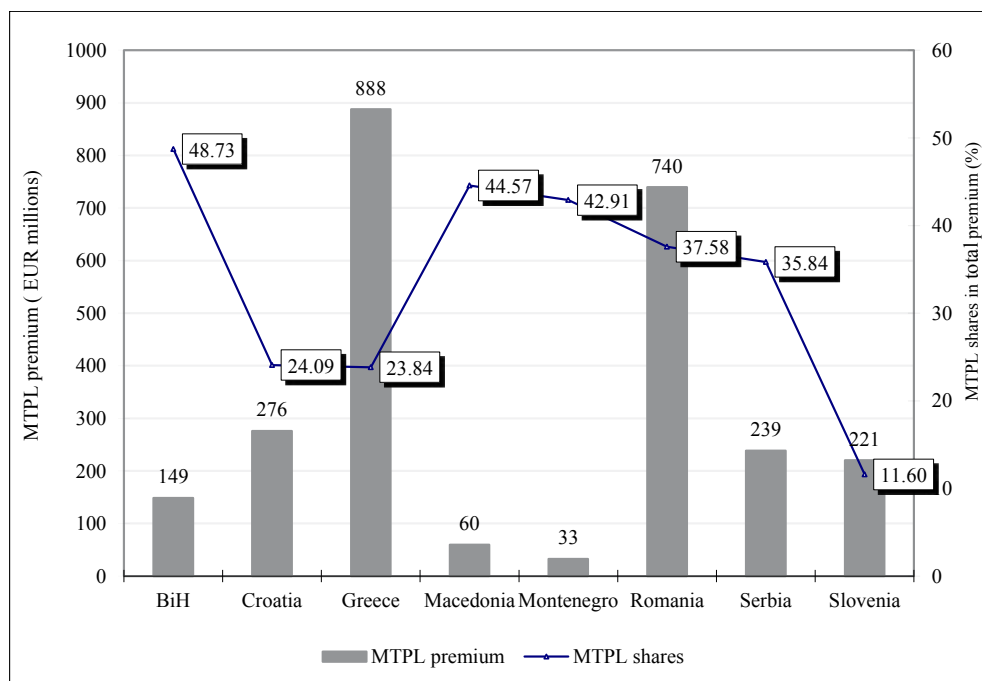Source: Official reports of countries' supervisory institutions

Figure 6. *MTPL shares in 2015*

Source: Official reports of countries' supervisory institutions

If we are looking at the market concentration, it is obvious that there are too many market players on the regional markets. A relation between premium volume and number of market players shows very low level of premium per company in the region. In some countries (BiH, Macedonia, Montenego), premium per company is below EUR 15 million, while even in Slovenia it is not above EUR 100 million. The market leaders are still companies that are successors of previous monopolistic state companies. On the other hand, there is large number of small companies covering less than 3% of market share. As the consequence of the changes in regulations, followed by mergers, acquisitions and bankruptcies, the number of small companies is decreasing in the recent years.

Insurers with majority of foreign ownership are covering most of the market in some countries, while in Slovenia, their share is 11.1%. There are also many insurers from one operating in the other SEE country what changes a complete picture about market concentration for the region. Generally, insurers coming from the EU countries are mostly oriented to life, while domestic insurers are focused to nonlife business.

5. Results and discussion

Previous data analysis for SEE insurance markets shows that there is still not appropriate macroeconomic environment for significant insurance market development. Underdeveloped economies in almost all countries are still burdened with numerous political problems that slow down implementation of economic reforms.

That is followed by high unemployment rate and poor spending capacity of the population. The SEE countries need much more intensive foreign direct investments to accelerate the growth. Their financial markets also need to be better regulated to be more attractive for insurers' reserves investment policies. The problems related to social insurance systems and changes in the structure of population cause a stagnation of the insurance sector additionally.

Role of insurance for the economy is not well recognized because of underdeveloped risk management and insurance culture by companies and individuals.

Previous state ownership system resulted that many public companies are still almost unprotected from the pure risks. Lack of education in risk management, leading to underdeveloped personal risk management and personal insurance culture, makes a large pressure to the current social security system that still offers a wide range of benefits, but with low quality of services.

In order to increase demand for insurance, insurers are still not enough active in promotion of insurance. They are more focused to increase their market shares and to get as much of very small "cake". There is stilllarge number of insurers concentrated on relatively small and undeveloped market. Some of them behave unprofessionally what significantly complicates the work of supervisors and slow down market development.

They are mostly focused only on the basic products (auto insurance) without investing in new products (small share of life and other nonlife products). Different ways of unfair competitionleads to the low level of cooperation between insurers in field of solving present problems on the market.

Introduction of new regulatory framework is late in many countries. Insufficient activities of supervisory bodies and insurers associations in most

of the SEE countries lead to many irregularities on the MTPL markets which aggrevate their development. These irregularities include unfair competition, uninsured driving and insurance frauds. In the countries where liberalization still is not introduced, tariffs are proposed by authorized institutions, but market players often do not respect them.

6. Conclusions

A comparative analysis of data for 2015 shows that the SEE insurance market is significantly behind the developed European markets. Generally, Slovenia is the closest to the IE average, but there is a lot of variety for the other countries. On the other side, common for all countries is a high potential for the market growth. There are expected mergers and acquisitions, especially because of the new regulatory standards that are coming in following years. More discipline of insurers will provide higher level of confidence in the sector.Prospects and challenges for the market can be also seen in the EU integration process that will lead to the increasing competitiveness of insurers.

Better market regulations followed by development of risk management and insurance culture will provide better environment for market development. Capacity of the supervisory authorities is improving by the strengthening of their personnel and implementation of new laws. Role of pure risk management is getting recognized as the countries approach to the EU. Demand for insurance will additionally increase by reform of pension and health social insurance system. The new regime Solvency II is a new challenge to regulatory and supervisory institutions, but only a few countries of the SEE region make serious preparations for this regime. Finally, we can expect higher growth of insurance sector than in other sectors of the economy of the SEE what can be interesting topic for future research in the field.

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EFFECTIVENESS OF MONTE CARLO SIMULATION AND ARIMA MODEL IN PREDICTING STOCK PRICES

EFEKTIVNOST MONTE CARLO SIMULACIJE I ARIMA MODELA U PREDVIĐANJU CIJENA DIONICA

Abstract

The efficient market hypothesis states that stock prices are a reflection of information and rational expectations, and all new information about the issuer are almost immediately reflected in the current stock price. Stock prices should not be accurately predicted by looking at the historical prices. Stock prices could be described by statistical process called "random walk", i.e. single day's deviations from the central value are random and unpredictable.
The aim of this research is to test the effectiveness of Monte Carlo simulation model and Autoregressive Integrated Moving Average model (ARIMA) in predicting stock prices. Selected methods use different input data in predicting stock prices, including different time horizons; ARIMA model uses time series data to predict future prices, while Monte Carlo simulation uses random walk component. We compare daily predictions of stock prices estimated by both methods for five companies from Dow Jones Industrial Average (DJIA) index. Predictions have been generated for one month period, from 10th March 2016 until 10th April 2016. For the purpose of evaluation of prediction models we use Mean Absolute Error (MAE), Mean Absolute Percent Error (MAPE), Mean Square Error (MSE) and Root Mean Square Error (RMSE) methods.
We came to the conclusion that there is a slight advantage in accuracy of predictions of ARIMA model for shorter periods (5 days), while Monte Carlo simulation has undoubted advantage for longer periods (21 days). Also, we noticed linkages between

single stock's predictions for periods of 5, 10 and 15 days for both models. Our results show that in shorter periods stock prices have elements of predictability, what questions the level of efficiency of the world leading stock exchange. In longer periods (21 days) results indicate market efficiency, i.e. model with random walk component (Monte Carlo simulation) has advantage compared to the model based on historical prices (ARIMA).

Sažetak

Hipotezom o efikasnosti tržišta tvrdi se da su cijene dionica odraz informacija i racionalnih očekivanja, te da se sve nove informacije o emitentu gotovo odmah bivaju uključene u trenutnu cijenu dionice. Cijene dionica se ne bi trebale moći precizno predvidjeti na bazi historijskih cijena. Drugim riječima, cijene dionica se mogu opisati putem statističkog procesa nazvanog "slučajni hod", tj. pojedinačna dnevna odstupanja od srednje vrijednosti su slučajna i nepredvidiva.
Cilj ovog istraživanja je testiranje efektivnosti Monte Carlo simulacije i ARIMA modela u predviđanju cijena dionica. Odabrane metode koriste različite ulazne podatke u predviđanju cijena dionica, uključujući različite vremenske intervale; ARIMA model koristi vremensku seriju podataka u predviđanju budućih cijena, dok Monte Carlo simulacija koristi element slučajnog hoda. Mi poredimo dnevna predviđanja cijena dionica procijenjena na bazi obje metode za pet dionica iz indeksa Dow Jones Industrial Average (DJIA). Predviđanja su generirana za jednomjesečni period, od 10. marta 2016. do 10. aprila 2016. godine. U svrhu procjene koji model predviđanja daje bolje rezultate koristimo metode Mean Absolute Error (MAE), Mean Absolute Percent Error (MAPE), Mean Square Error (MSE) i Root Mean Square Error (RMSE).
Došli smo do zaključka da je blaga prednost u tačnosti predviđanja na strani ARIMA modela za kraće periode (5 dana), dok Monte Carlo simulacija ima nedvojbenu prednost kada se radi o dužim periodima predviđanja (21 dan). Također, uočili smo povezanost između predviđanja za pojedinačne dionice za periode od 5, 10 i 15 dana kod oba modela. Naši rezultati pokazuju da cijene dionica imaju elemente predvidivosti u kraćim periodima, što dovodi u pitanje nivo efikasnosti vodeće berze u svijetu. U dužim periodima (21 dan) rezultati upućuju na tržišnu efikasnost, tj. model s komponentom slučajnog hoda (Monte Carlo simulacija) ima prednost u odnosu na model baziran na historijskim cijenama (ARIMA).

1. Introduction

Interest in the topic of predicting the movements of stock prices experienced its expansion in 1930's, when world's stock exchanges started its faster development. Since then, this issue is studied intensively and as a result a large number of different models that attempt to predict the future path of movement of stock prices have been developed. Some of these models are neural networks, fuzzy inference systems and machine learning techniques, various ARIMA models, Monte Carlo simulation and GARCH model.

The aim of this research is to test the effectiveness of Monte Carlo (MC) simulation model and autoregressive integrated moving average model (ARIMA) in predicting stock prices. Selected methods use different input data in predicting stock prices, including different time horizons; ARIMA model uses time series data to predict future prices, while Monte Carlo simulation uses random walk component. Monte Carlo simulation model is being used for valuation of options, while due to high volatility it is not widely accepted for stock prices predictions. The aim of our research is to test whether the MC model can be competitive to one of widely used models for short-term forecasting of stock prices, namely ARIMA model. The basic idea of this research is to compare different models; the sample selection, we think, doesn't diminish the importance of the research.

We carried out analysis of comparison of the predicting power of two models on five companies from Dow Jones Industrial Average (DJIA) listed on the New York Stock Exchange: Pfizer, Coca-Cola, General Electric, Exxon and 3M.

For an initial insight into the dynamics of stock prices, daily prices for all five companies are used in the period from March 2006 till March 2016. In the next step, we forecasted stock prices by both models for one month period from 10th March till 10thApril 2016, *i.e.* 21 active trading days on NYSE. Individual forecasted prices are compared with actual prices, and then forecasted prices by both models are compared to each other.

For comparison were used statistical tools for evaluating the accuracy of forecasting models (mean absolute error, mean absolute percentage error and root mean square error).Vertical analysis is done for deriving conclusions regarding the forecasting power of two models for time horizons of 5, 10, 15 and 21 days. The paper is divided into five parts. Section 2 Literature review

provides an overview of theoretical background of the research on efficient markets and forecasting models, and shows the results on previously conducted researches. Section 3 explains the methodology and data used for the analysis. Section 4 gives the results of ARIMA and MC forecasting process. Finally, brief summary and concluding remarks are given in Section 5.

2. Literature review

Efficient market hypothesis (EMH) states that asset's prices fully reflect all available information in the market, so it is not possible to beat the market, since prices change only due to new information or changes in investors' required rates of return (Malkiel & Fama, 1970). An implication of EMH is that stocks are always in equilibrium, *i.e.* stocks trade at their fair value. It is impossible to gain excessive returns or to outperform the market through fundamental or technical analysis and market timing. Above average returns are connected with investments in riskier securities.

Random walk theory is stock market theory that stats that stock price changes are random, *i.e.* next price changes are random from previous price. According to this theory stock price changes have the same distribution and they are independent from each other, meaning that past movements of stock prices or direction of stock prices cannot be used to predict future prices. The idea is that information flow unhindered and all new information are immediately embedded in stock price, so tomorrow's stock price changes will reflect only tomorrow's information, independent from today's price change. The idea is also referred to as the weak form of efficient market hypothesis. Dupernex (2007) on the other hand states that random walk theory does not imply that stock market is efficient with rational investors, as efficient market theory stats.

Dai and Zhang (2013) find US stock market semi-strong efficient, meaning that all publicly available information is included in the current price. They used machine learning theory to confirm the semi-strong efficiency; prediction of 3M stock next day price had low accuracy of 50%, while the accuracy increased to 79% when authors tried to predict long-term trend.

Xu and Berkely (2012) used information from Yahoo Finance and Google Trend to simplify the process of evaluation of online news. The author analyses Apple Inc. and combines the conventional time series analysis technique (ARMA - autoregressive moving average) with the information

from the Internet to predict weekly changes in stock price. Important news related to a selected stock over a five-year period are recorded and the weekly Google trend index values on this stock are used to provide a measure of the magnitude of these events. The result of this experiment has shown significant correlation between the changes in weekly stock prices and the values of important news computed from the Google trend website. Author concludes that algorithm proposed in this study can potentially outperform the conventional time series analysis in stock price forecasting.

Autoregressive integrated moving average (ARIMA) is generalization of an autoregressive moving average (ARMA) model fitted to time series data for their better understanding or forecasting future values (Box & Jenkins, 1970). This model is one of the best methods in financial forecasting, and different studies have shown its' efficient ability of short-term forecasting (Ariyo, Adewumi & Ayo, 2014). ARIMA model is more robust and more efficient in time series forecasting even then popular Artificial Neural Networks technic (Kyungjoo, Sehwan & John, 2007; Merh, Saxena & Pardasani, 2010; Sterba & Hilovska, 2010).

Mondal, Shit and Goswami (2014) conducted a test of ARIMA model on sample of 56 stocks from seven sectors listed at the National Stock Exchange in India. The accuracy of predictions was above 85% for all sectors, with the best accuracy in consumer goods sector.

Monte Carlo (MC) simulation is a quantitative technic developed from John von Neumann during the World War II (Eckhardt, 1987). The basic idea is using randomness to solve problems that might be deterministic in principle. Monte Carlo simulation finds its application in much wider areas then financial forecasting. Some examples we can see in papers from Tadeu *et al.* (2012), Whiteside (2008), Hoesli, Jani and Bender (2005) as well as Borkar, Cevher and McClellan (2007).

Boyle (1976) shows that MC simulation is useful for option pricing when underlying stock returns are generated as join of continues as well as sudden processes, and that it can be used for numerical forecasting of European stock call options that pay dividends. Jabbour and Liu (2005) find that the accuracy of MC simulation is increased by larger number of attempts in simulations.

Clewlow and Strickland (1998) and Hull (2012) state that MC is computer inadequate because of the high generated variances. Landauskas (2011) in his

paper compares standard MC simulation with Markov chain MC simulation (MCMC). After 300 executed trajectories, average stock price after 50 trades was very similar in both methods ($ 18.08 and $ 18.10). Author also states that larger number of intervals used in model development leads to higher accuracy, but also demands more time to get result.

3. Methodology and data

ARIMA model as one of the most prominent models for financial forecasting can be described as follows:

$$Y_t = \varphi_0 + \varphi_1 Y_{t-1} + \varphi_2 Y_{t-2} + ... + \varphi_p Y_{t-p} + \varepsilon_t - \theta_1 \varepsilon_{t-1} - \theta_2 \varepsilon_{t-2} - \theta_q \varepsilon_{t-q}, \tag{1}$$

Where symbols represent:
- Y_t – forecasted stock price in period t (day, month, year or similar);
- Y_{t-p} – real stock price in period t–p ;
- φ_p and θ_q – coefficients;
- p and q – order of autoregressive component and moving average, respectively.

The main task of time series analysis is discovering of model that will appropriately describe the process that is being generated by time series. Box-Jenkins approach to model selection is one of the most often used methods for time-series analysis. This approach is characterized by four stages: identification stage, estimation stage, diagnostic checking stage and forecasting stage (Bahovec & Erjavec, 2009). The application of the ARIMA methodology for time series analysis is due to Box and Jenkins (1970).

The general statistical methodology of ARIMA model can be presented as follows:
Step 1 - The model is identified for the observed data.
Step 2 - The model parameters are estimated.
Step 3 - If the hypotheses of the model are validated, go to Step 4, otherwise go to Step 1 to refine the model.
Step 4 - The model is ready for forecasting.

The main idea of MC simulation is to perform an experiment by simulation with probabilistic components of system, whereby random numbers are being generated in order to assign values to the components of system (Render, Stair & Hanna, 2012).

According to Crnjac-Milić and Masle (2013) MC simulation was found useful when stock returns have been generated from continuous and discrete returns. MC simulation model is being derived from Markov process, Wiener process and Brownian motion. If we analyze discrete time period, model can be presented as follows:

$$\Delta S = \mu S \Delta t + \sigma S \epsilon \sqrt{\Delta t} \qquad\qquad (2)$$

Where symbols represent
- ΔS – change in stock price;
- μ – stock return;
- Δt – time in which stock price is being observed (day, month, year or similar);
- S – initial stock price or price from the last observed period;
- σ – standard deviation and
- ϵ – random component.

In equation (2), $\mu \Delta t$ is expected return, while $\sigma \epsilon \sqrt{\Delta t}$ is a stochastic component of return (Hull, 2012). Random component ϵ simulates Markov process, meaning that selected samples of ϵ should be independent from each other.

For the comparison of the forecasts obtained through the Monte Carlo simulation and ARIMA model, price movements for next five companies are analyzed: Pfizer, Coca-Cola, General Electric, Exxon and 3M. These companies are part of Dow Jones Industrial Average (DJIA) index and they are also quoted on the New York Stock Exchange (NYSE). The historical prices of all five companies are analyzed in the period from March 2006 to March 2016. The aim is to test how the results of the ARIMA model and Monte Carlo simulation are changed if the actual stock prices of companies vary in different ways, regardless of the industry to which the company belongs. For each model, a set of steps is implemented by using Eviews 9 SV and MS Excel 2010. The prices are forecasted at the daily level for the period from 10 March to 10 April 2016, or 21 days of active trading. The observation period is divided into four parts: 5, 10, 15 and 21 trading days. First, the individual forecasted prices for both models are compared with the actual ones. Then, forecasted prices by both models are compared with each other. To help with the comparison, statistics are used to evaluate the accuracy of prognostic models: mean absolute error (MAE), mean absolute percentage error (MAPE) and root of a mean square error (RMSE).

4. Results

The subsections below describe the processes of ARIMA model development for Pfizer Inc.

4.1. ARIMA model for Pfizer Inc.

Pfizer stock data used in this study cover the period from March 2006 to March 2016 having a total number of 2507 observations. Figure 1 shows the original pattern of the series and gives a general overview whether the time series is stationary or not. From the graph below we can see that the time series have random walk pattern.
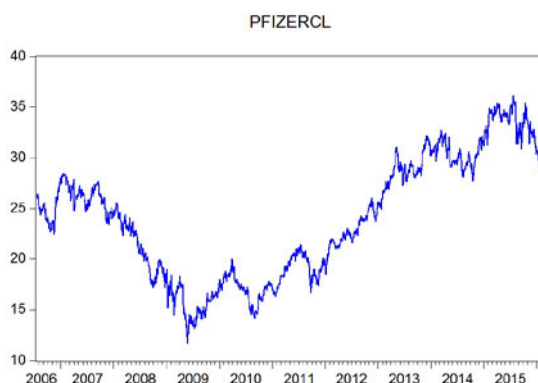
Figure 1. *Movements of daily closing prices of Pfizer Inc. Source*

Source: Authors' research (Eviews 9 SV)

By visual analysis we can conclude that this is a non-stationary series that follows a random walk pattern. The analysis of the correlogram provides additional confirmation that this is a non-stationary series. After the first differentiation of the series the graph and the correlogram indicate stationarity. In order to obtain a formal confirmation that it is a stationary series after the first differentiation the Augmented Dickey-Fuller (ADF) unit root test is obtained (Figure 2).

Null Hypothesis: D(PFIZERCL) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=26)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-37.84941	0.0000
Test critical values:	1% level	-3.432767	
	5% level	-2.862494	
	10% level	-2.567323	

*MacKinnon (1996) one-sided p-values.

Figure 2. *ADF unit root test for D(PFIZERCL)*

Source: Authors' research (Eviews, 9 SV)

In the analyzed case, the ADF test value is -37.84941, which is far less than the critical value of the test (-3.43; -2.86; -2.56), which leads to a strong rejection of the zero hypothesis that D(PFIZERCL) has a unit root, and accepting an alternative hypothesis that D(PFIZERCL) has no unit root with the usual level of significance.

The parameter I in the ARIMA model measures the integrations of the model (I between AR and MA) and in the case of the observed model it is 1, which means that the series is the first-order differential. Table 1 shows the different parameters of the autoregressive (p) and moving average (q) among the several ARIMA model experimented upon. Comparison is made so that the optimal model is one which has: (1) the highest value of the coefficient of determination, (2) the lowest value of the Schwarz information criterion and (3) the lowest standard error of regression. Among the models of integration of order , the coefficient of determination is the highest for the model (1, 1, 2). The standard error of regression is the lowest also for the model (1, 1, 2), and the Schwarz information criterion is approximate to the parameters of other models of the order of integration, so this model is taken as optimal.

Table 1. *Statistical results of different ARIMA parameters for Pfizer stock*

ARIMA	Coefficient of determination	Schwarz criterion	Standard error of regression
(1,0,0)	0.997180	0.542848	0.315767
(1,0,1)	0.997183	0.545029	0.315682
(1,1,1)	0.003735	0.537663	0.315311
(1,1,0)	0.000843	0.537434	0.315706

(0,1,1)	0.000948	0.537329	0.315689
(2,1,0)	0.002827	0.535448	0.315392
(0,1,2)	0.003088	0.535187	0.315351
(2,1,1)	0.003723	0.537672	0.315313
(1,1,2)	0.003979	0.537416	0.315273

Source: Authors' research

The parameter estimation is done (Figure 3) using the method of Maximum Likelihood. The coefficient AR (1) is at the limit of statistical significance at 5% and amounts -0.029924. The coefficient MA (2) is statistically significant and amounts -0.058546. SIGMASQ is a mark for the estimated variation of innovation or "white noise".

Dependent Variable: D(PFIZERCL)
Method: ARMA Maximum Likelihood (BFGS)
Date: 03/15/16 Time: 23:05
Sample: 7/18/2006 2/24/2016
Included observations: 2507
Convergence achieved after 3 iterations
Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	-0.029924	0.015449	-1.937027	0.0529
MA(2)	-0.058546	0.014332	-4.084983	0.0000
SIGMASQ	0.099278	0.001507	65.87866	0.0000

R-squared	0.003979	Mean dependent var	0.001807
Adjusted R-squared	0.003183	S.D. dependent var	0.315776
S.E. of regression	0.315273	Akaike info criterion	0.530443
Sum squared resid	248.8901	Schwarz criterion	0.537416
Log likelihood	-661.9101	Hannan-Quinn criter.	0.532974
Durbin-Watson stat	1.996472		

Inverted AR Roots	-.03	
Inverted MA Roots	.24	-.24

Figure 3. *ARIMA (1,1,2) estimation output with D(PFIZERCL)*

Source: Authors' research (Eviews, 9 SV)

Based on the Durbin-Watson test results we conclude that there is no autocorrelation of residuals. We also perform the autocorrelation test of residuals' deviations and since there are no significant spikes of ACFs and PACFs, it means that the residuals of the selected ARIMA model are white noise, and no other significant patterns are left in the time series. Therefore, there is no need to consider any AR (p) and MA (q) further.

The model (1, 1, 2) can be written as follows:

$$\widehat{PFIZER}_t = -\,0{,}029924_{t\text{-}1} - 0{,}058546\,\varepsilon_{t\text{-}2} + \varepsilon_t. \qquad (3)$$

The subsections below describe the processes of Monte Carlo simulation development for Pfizer Inc.

4.2. Monte Carlo simulations for forecasting stock prices of Pfizer Inc.

The starting MC model for calculating the input data is presented and explained earlier (2):

$$\Delta S = \mu S \Delta t + \sigma S \epsilon \sqrt{\Delta t}$$

Data on expected annual growth and standard deviation are determined based on historical prices. We considered a period of 30 years (from 1985 to 2015) with an average annual return for that period of 16.80% ($\mu = 0.16794$) and a standard deviation of 33.66% ($\sigma = 0.33665$).

The price change is observed at the daily level as the results of the simulation are compared with real prices within one month period of time. For this model, it is assumed that Pfizer stocks are traded actively for 254 days a year, so one year is divided by the number of days in order to get the required parameter. Thus, $\Delta t = 1/254$ or 0.00394, while the second root from Δt is 0.06275.

The real price (S) on 10th March was \$ 30.5, so the model can be written as:

$$\Delta S = 0.16794 \cdot S \cdot 0.00394 + 0.33665 \cdot S \cdot \epsilon \cdot 0.06275 \qquad (4)$$

According to the Geometric Brownian motion on which the MC simulation is based, the model thus presented means that the price of a stock follows a *random walk*. This is consistent with a weak form of the efficient market hypothesis: past price information has already been incorporated and subsequent price movements are conditionally independent from past price movements.

After 1000 simulations of the daily prices, the expected value was calculated and the result obtained is the estimated daily stock price based on the MC model. The final result is visible in Table 2, in a comparative view with the results of the ARIMA model predictions.

Table 2. *Prices obtained through the forecast of two models in relation to the real prices of the stocks of Pfizer Inc.*

Sample period	Actual values	Predicted values ARIMA	Predicted values MC
1	30.10	29.40483	30.55675
2	29.54	29.50121	30.56519
3	29.04	29.41259	30.55577
4	29.34	29.49407	30.51950
5	29.45	29.41915	30.49679
6	30.07	29.48804	30.50409
7	30.38	29.42470	30.52727
8	30.19	29.48294	30.46389
9	30.08	29.42939	30.49685
10	29.78	29.47863	30.48413
11	30.05	29.43336	30.55115
12	30.07	29.47498	30.52850
13	29.64	29.43671	30.48524
14	30.04	29.47190	30.53086
15	30.72	29.43954	30.71015
16	31.36	29.46929	30.77961
17	32.93	29.44194	30.76318
18	32.76	29.46709	30.79568
19	32.5	29.44397	30.79217
20	31.89	29.46523	30.93653
21	31.96	29.44568	31.01251

Source: Authors' research

We compare the *ex post* one week ahead forecasts of stock prices using three different evaluation statistics to ensure that our inferences regarding the relative efficiency of the forecasting models are not driven by the particular criterion used in these comparisons. The statistics are the Root Mean Squared Error (RMSE), the Mean Absolute Error (MAE) and Mean Absolute Percent Error (MAPE).

Model	Time period			
	5 days	10 days	15 days	21 day
The mean absolute error **(MAE)**				
ARIMA model	0.25829	0.44877	0.51675	1.16276
MC model	1.04480	0.72002	0.63372	0.848865
Mean absolute percent error **(MAPE)**				
ARIMA model	0.87074	1.49505	1.71510	3.67968
MC model	3.55643	2.43679	2.13855	2.74831
The root mean squared error **(RMSE)**				
ARIMA model	0.36007	0.53977	0.61381	1.60025
MC model	1.09947	0.83659	0.749033	1.024226
Advantage	ARIMA	ARIMA	ARIMA	MC

Source: Authors' research

In Table 3 we see that the statistics for the ARIMA model for periods of 5, 10 and 15 days are much lower than the same indicators for the MC simulation. This means that the ARIMA model gives results closer to the real ones. If the total period of 21 days is observed, MC simulation gives more precise results.

4.3. Comparative ARIMA model and Monte Carlo simulation model statistics

Similarly, the corresponding ARIMA models and MC models were selected for the remaining 4 stocks and the results of the comparisons are given in Tables 4 to 7.

Table 4. *Comparative ARIMA and MC model statistics for*
different periods of time for Coca Cola

Coca Cola				
ARIMA model	$\widehat{COCACOLA}_t = 29.94265 + 0.999573\ \text{COCACOLA}_{t-1} + 0.998660\varepsilon_{t-1} + \varepsilon_t$			
MC model	$\Delta S = 0.15943 \cdot S \cdot 0.00394 + 0.23938 \cdot S \cdot \epsilon \cdot 0.06275$			
Time horizon				
	5 days	10 days	15 days	21 days
The mean absolute error **(MAE)**				
ARIMA	0.868828	1.004986	1.338585	1.596852
MC	0.699725	0.784929	1.056698	1.219699

	Mean absolute percent error **(MAPE)**			
ARIMA	0.019147	0.022095	0.029117	0.034532
MC	0.015418	0.017257	0.022981	0.026378
	The root mean squared error **(RMSE)**			
ARIMA	0.901527	1.029633	1.444867	1.714948
MC	0.734412	0.807169	1.148668	1.310382
Advantage	MC	MC	MC	MC

Source: Authors' research

Table 5. *Comparative ARIMA and MC model statistics for different periods of time for General Electric*

General Electric				
ARIMA model	$\widehat{GE}_t = 27.23002 + 0.998697\,GE_{t-1} - 0.231098\varepsilon_{t-1} + \varepsilon_t.$			
MC model	$\Delta S = 0.14525 \cdot S \cdot 0.00394 + 0.25661 \cdot S \cdot \epsilon \cdot 0.06275$			
	Time horizon			
	5 days	10 days	15 days	21 days
	The mean absolute error **(MAE)**			
ARIMA	0.353942	0.686105	1.020895	0.980553
MC	0.387337	0.64592	0.9259	0.814732
	Mean absolute percent error **(MAPE)**			
ARIMA	0.011556	0.022173	0.032544	0.031376
MC	0.012662	0.020895	0.029543	0.026057
	The root mean squared error **(RMSE)**			
ARIMA	0.455237	0.790311	1.175119	1.103603
MC	0.467556	0.720884	1.044524	0.935381
Advantage	ARIMA	MC	MC	MC

Source: Authors' research

Table 6. *Comparative ARIMA and MC model statistics for different periods of time for Exxon*

Exxon				
ARIMA model	$\widehat{EXXON}_t = 79.03694 + 0.992641\,EXXON_{t-1} - 0.152387\varepsilon_{t-1} + \varepsilon_t.$			
MC model	$\Delta S = 0.13012 \cdot S \cdot 0.00394 + 0.15147 \cdot S \cdot \epsilon \cdot 0.06275$			
	Time horizon			
	5 days	10 days	15 days	21 days

	The mean absolute error **(MAE)**			
ARIMA	0.51880	0.95413	1.11439	0.86722
MC	0.53117	0.92719	0.94768	0.79938
	Mean absolute percent error **(MAPE)**			
ARIMA	0.62197	1.13829	1.32680	1.30333
MC	0.63548	1.10566	1.12809	0.95426
	The root mean squared error **(RMSE)**			
ARIMA	0.71518	1.12048	1.28306	0.98519
MC	0.78263	1.10219	1.11170	0.99400
Advantage	ARIMA	ARIMA	ARIMA	MC

Source: Authors' research

Table 7. *Comparative ARIMA and MC model statistics for different periods of time for 3M*

3M				
ARIMA model	$\widehat{3M}_t = 109.4349 + 0.999529 \, 3M_{t-1} - 0.062219\varepsilon_{t-1} + \varepsilon_t.$			
MC model	$\Delta S = 0.13764 \cdot S \cdot 0.00394 + 0.19119 \cdot S \cdot \epsilon \cdot 0.06275$			
	Time horizon			
	5 days	10 days	15 days	21 days
	The mean absolute error **(MAE)**			
ARIMA	2.71791	3.88420	4.83041	5.47981
MC	2.25786	3.11321	3.81109	4.06980
	Mean absolute percent error **(MAPE)**			
ARIMA	1.67007	2.36747	2.92442	3.30713
MC	1.38759	1.89775	2.30753	2.45718
	The root mean squared error **(RMSE)**			
ARIMA	2.81926	4.09706	5.16102	5.78750
MC	2.32453	3.27595	4.06431	4.26339
Advantage	MC	MC	MC	MC

Source: Authors' research

Based on selected criterions we find that ARIMA model has advantage in 3 out of 5 stocks in sample in shortest time horizon of 5 days. It is interesting that advantage of ARIMA model disappears with longer time horizons, and in the end MC model has advantage over ARIMA model in all five cases for the longest time horizon of 21 days.

4.4. Discussion of results

In order to get an insight of effectiveness of Monte Carlo simulation model and ARIMA model in predicting stock prices, we forecasted stock prices of five stocks from DJIA in next 5, 10, 15 and 21 days from 10th March 2016 using the mentioned models. The main idea was to test how selected methods that use different input data in predicting stock prices, including different time horizons are effective in predicting stock prices. While ARIMA model uses time series data to predict future prices, Monte Carlo simulation uses random walk component in predicting prices. The table 8 summarizes the advantages of applied models in predicting stock prices.

Table 8. *Advantages of applied models for different time horizons*

Company	TIME HORIZON			
	5 DAYS	10 DAYS	15 DAYS	21 DAYS
Pfizer Inc.	ARIMA	ARIMA	ARIMA	MC
Coca-Cola	MC	MC	MC	MC
General Electric	ARIMA	MC	MC	MC
Exxon	ARIMA	ARIMA	ARIMA	MC
3M	MC	MC	MC	MC

Source: Authors' research

Based on the results of the predicting power of both models, we can conclude that ARIMA model has same advantage in predicting stock prices in shorter periods of time (5 days), while there is an undoubted advantage on side of MC model for longer periods of time (21 days). Also, we noticed linkages between single stocks predictions in a way that there is only one change in advantage from one method to another, and that advantage of MC method is increasing with the lengthening of the time.

The persistence in quality of predictions of one or other method leads us to the possible generalization of results. It is especially interesting that MC can be seen as method of better quality in predicting stock prices with time lag of 21 days. MC simulation model is formed to describe random walk pattern, and weak form market efficiency assume that future securities' prices are random and not influenced by past events. Is it possible that assumption about day's stock prices reflect all the data of past prices is being satisfied with some time lag? We assume that market time lag appears due to information imperfection

or some other process of market information absorption, after what they are being included in the market price.

5. Conclusion

This paper analyzes the effectiveness of Monte Carlo simulations and ARIMA model in predicting stock prices. Our results show that in shorter period stock prices have elements of predictability according to historical price, what questions the level of efficiency of the world leading stock exchange. In longer periods (21 days) results indicate weak-form market efficiency, *i.e.* model with random walk component (Monte Carlo simulation) has advantage compared to the model based on historical prices (ARIMA). A combination of these findings could provide useful information to investors when to buy or sell stocks and Monte Carlo simulation could be used to determine which stock to sell short. We consider that this research can be extend in two ways: (1) for possible generalization of obtained conclusions about advantages of one or the other method in predicting stock prices for which we suggest the expansion of sample and (2) further analysis of time lag needed to absorb new information in market and its' inclusion in the stock price as according to MC model which is based on random walk principle.

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Umjesto zaključka

Peta internacionalna naučna konferencija „Ekonomija integracija", na temu „Uloga ekonomske misli u savremenom okruženju", organizovana je na osnovu iskazanog interesa velikog broja učesnika (istraživača, praktičara i naučnika iz polja ekonomije i biznisa) na sada već tradicionalnim, prethodnim ICEI konferencijama.

Radovi iz osam tematskih područja, rezultirali su konkretnim naučnim i pragmatskim spoznajama, koje mogu poslužiti kao konkretni odgovori odnosno prijedlozi vezanim za unapređenje saradnje saradnje između relevantnih donosilaca odluka, istraživača te menadžera i vlasnika kompanija, kako bi se sinergetskim djelovanjem kreirao povoljan poslovni ambijent u nacionalnom i regionalnim okvirima. U tom kontekstu, učesnici Konferencije apostrofirali su, između ostalog, sljedeće:

- Iako su najbrže rastuće ekonomije *de iure* finansijski zavorene, one su *de facto* finansijski otvorene. Stoga, a posebno s obzirom na internacionalizaciju poslovanja finansijskih institucija, danas je teško govoriti o finansijskoj zatvorenosti.

- (Ne)zaposlenost mora biti kriterij odgovornosti, i lične i društvene, jer se radi kako o ekonomskom problemu (neiskorišten ogromni resurs znanja i pozitivne energije), tako i o političkom problem (pravo na rad, isključenost, negativna energija) i moralnom problemu (onih koji nisu isključeni).

- Neophodno je okrenuti se jeftinijim izvorima finansiranja (u odnosu na bankarske kredite) kapitalnih investicija u jedinicama lokalne samouprave Jedan od načina je emisija municipalnih obveznica. Iako, generalno, postoji stav da su građani neinformisani i slabo zainteresovani za njihovu kupovinu, ne treba izgubiti iz vida da osiguravajuće kuće, investicioni fondovi, banke i druge finansijske institucije imaju obavezu držati u svom portfoliju značajno učešće sigurnih vrijednosnih papira.

- Mnoge političke, ekonomske i demografske promjene, koje su posljednjih godina zahvatile regiju Jugoistočne Evrope, indirektno su utjecale i na razvoj tržišta osiguranja. Procesi i izazovi za ovo tržište mogu se vidjeti i u procesu integracije u Evropsku uniju, koji će dovesti do povećanja konkurentnosti osiguravatelja.

- Potrebno je jačati svijest svih tržišnih aktera, i društva u cjelini, o značaju društveno odgovornog poslovanja u pogledu ekonomske, ekološke i socijalne dimenzije. U tranzicijskim zemljama, dominantan rizik u razvoju energetskog sektora je politički rizik, koji se reflektuje u nedostatku odgovarajućih zakonskih propisa, jer, vrlo često, nisu usvojene strategije razvoja energetskog sektorska na državnom nivou, niti su donešeni adekvatni propisi za zaštitu životne sredine.

- Jedan od mogućih načina za ublažavanje detektovanih društveno-ekonomskih nejednakosti, mogao bi se odnositi na intenziviranje istraživanja u polju ekonomskog razvoja ruralnih područja. U tom kontekstu, ruralna politika se treba dizajnirati na takav način da ciljano tretira višestruke društveno-ekonomske probleme.

- Obrazovanje omogućava socijalnu mobilnost i bolje životne prilike za zaposlenje te uopćeno uključenost u socijalne tokove. Stoga, obrazovna sturuktura populacije jedne zemlje predstavlja indikator njene konkurentnosti. S obzirom da u zemljama u tranziciji, mladi čine jednu od najranjivijih grupa, uglavnom zbog visoke stope nezaposlenosti, neophodno je u okviru sistema obrazovanja razvijati i implementirati različite programe poduzetničkog obrazovanja.

Na kraju, za nadati se da će ako ne svi, onda barem većina zaključaka i preporuka radova sadržanih u ovom zborniku, poslužiti nosiocima različitih nivoa vlasti, kreatorima ekonomskih politika, privrednim subjektima, visokoškolskim institucijama i svim drugim interesentima, kako u BiH tako i zemljama Regiona, u pravcu jačanja saradnje, i to ne samo na deklarativnoj osnovi, već i kroz konkretne projekte i aktivnosti.

U r e d n i c e

Instead of a conclusion

The fifth scientific conference with international participation "Economy of Integration", with the theme "The Role of Economic Thought in Modern Environment", was organized in response to the expressed interests of many participants (researchers, practitioners, and scientists from the fields of economics and business) who took part in previous ICEI conferences that have already become a tradition.

Works from eight thematic areas resulted in concrete scientific and pragmatic findings that can be used as concrete responses or proposals related to the improvement of cooperation between relevant decision makers, researchers, managers, and owners of companies. They aim to create a favorable business environment within national and regional frameworks. In this context, the participants of the Conference highlighted, among others, the following:

- Although the fastest growing economies appear financially closed, they are in fact financially open. Therefore, in this day and age, especially with regards to the internationalization of the operations of financial institutions, is hard to talk about financial exclusivity.

- (Un)employment must be considered to be a criterion of responsibility, both personal and social, because it deals with economic problems (underutilized vast resource of knowledge and positive energy), political problems (right to work, exclusion, negative energy) as well as moral problems (for those who are not excluded).

- It is necessary to turn to less expensive sources of financing for capital investments in local self-government units, especially when compared to bank loans. One of the ways is the through issue of municipal bonds. Although there is a view that citizens might be uninformed and therefore uninterested in their purchase, it should not be forgotten that insurance companies, investment funds, banks, and other financial institutions are obliged to keep a significant share of safe securities in their portfolio and bonds might be a good option to fulfill this requirement.

- Many political, economic, and demographic changes, which have affected the Southeast European region in recent years, have indirectly influenced the development of the insurance market. Various practices and challenges associated with this market are demonstrated in the process of

integration into the European Union, which can lead to an increase in the insurer competitiveness.

- It is necessary to strengthen the awareness among all market participants and society as a whole about the importance of socially responsible business practices when it comes to economic, environmental, and social domains. In the countries undergoing a transition, political risk is a dominant risk in the development of the energy sector, which is reflected in the lack of an appropriate legislation. This is due to no development strategies being developed for the energy sector at the state level, as well lack of adequate environmental regulations.

- One of the possible ways to alleviate the detected socio-economic inequalities could be to intensify research in the field of rural economic development. In this context, rural policies should be designed in such a way that they target multiple socio-economic problems.

- Education enables social mobility and creates better conditions for employment and inclusion in social dynamics. Therefore, the educational structure of a country's population is also a good indicator of its competitiveness. Given that in the countries undergoing transition, the young people make up one of the most vulnerable social groups (mainly due to the high unemployment rate), it is necessary to develop and implement various programs of entrepreneurial education within the education system. Such education could stimulate young minds to create and implement their own business ideas, instead of waiting for employment, *etc*.

In the end, we hope that, if not all, then at least some of the conclusions and recommendations resulting from the works contained in this volume will be useful to different levels of government, economic policy makers, business entities, higher education institutions, and all other stakeholders in BiH and other countries of the region. We hope that the Conference results will be used to strengthen cooperation between various entities and countries of this region, not only on a declarative basis, but also through concrete projects and activities.
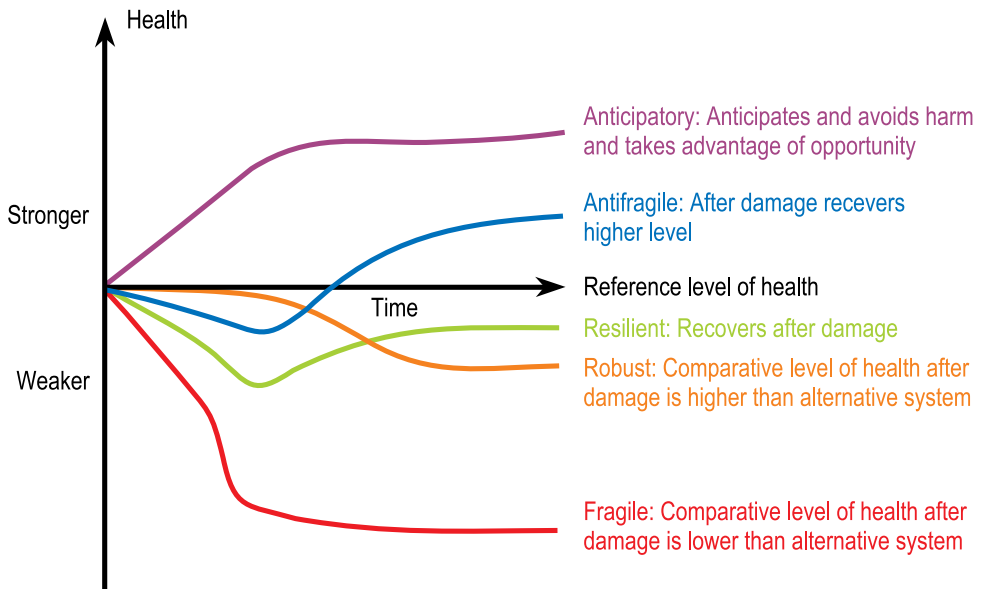
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