3rd Dubrovnik International Economic Meeting

DIEM 2017

Managing Business Growth in a Volatile Environment

University of Dubrovnik
Department of Economics and Business Economics
12 - 14 October 2017, Dubrovnik, Croatia
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Dubrovnik International Economic Meeting

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DIEM is a scientific journal that consolidates the research papers from the DIEM conference (Dubrovnik International Economic Meeting), and is issued by the University of Dubrovnik. It publishes high quality papers that contribute to the theoretical, methodological and empirical findings in the complex field of economics and aims at familiarizing the national and international scientific and professional community with it.


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DIEM 2017

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KEY NOTE SPEAKERS

Richard Pircher, Professor at the University of Applied Sciences BFI Vienna

Keynote title: LEADERSHIP IN VOLATILE TIMES

Domenico Nicolò, Professor at the Department of Law and Economics University Mediterranea of Reggio Calabria

Keynote title: RISK, CAPITALIZATION AND SURVIVAL OF YOUNG FIRMS: EMPIRICAL SURVEY ON ITALIAN COMPANIES
FROM THE EDITORS


This International Conference (DIEM) is an international forum for the presentation of research results in the fields of Economics and Business Economics, in 2017 with the emphasis on Managing Business Growth in a Volatile Environment. The peer review has been completed by an international team of reviewers, consisting of experts in economics from all over the world. Two eminent researches were key note speakers who also presented their work at the Conference: Richard Pircher, Professor at the University of Applied Sciences BFI Vienna (Keynote title: LEADERSHIP IN VOLATILE TIMES) and Domenico Nicolò, Professor at the Department of Law and Economics University Mediterranea of Reggio Calabria (Keynote title: RISK, CAPITALIZATION AND SURVIVAL OF YOUNG FIRMS: EMPIRICAL SURVEY ON ITALIAN COMPANIES).

The overall objective was to attract and invite professionals and researchers from the field of economics and other relevant fields, who are aware of practical and theoretical problems of modern economy, to participate and give their contribution in solving these problems with active participation in presentations, working papers and panels and to provide maximum opportunity for presentation by young researchers.

Contributions of the third Dubrovnik International Economic Meeting - DIEM 2017 lay in participation of 130 scientists from 22 different countries (United States of America, Mexico, Russia, South Korea, Taiwan, Italy, Germany, Hungary, Spain, Greece, Czech Republic, Estonia, Lithuania, Malta, Poland, Turkey, Belgium, Croatia, Bosnia and Herzegovina, Serbia, Slovenia and Macedonia). We believe that the actual response of participants to our third conference proves our expectations that DIEM will represent an essential link from the scientific and educational point of view. The conclusions of the Conference will hopefully be interesting and useful not only to the academics, but also to all the participants in the field of economics.
We are proud that DIEM has been recognised as an excellent platform to present new, contemporary issues and an active promoter of economic profession in the future especially because in 2017 we had excellent co-operation with several domestic and foreign universities from Croatia, Bosnia and Herzegovina, Malta, Lithuania, Czech Republic, Poland and Macedonia and we hope that we will continue our good co-operation (University of Zagreb – Faculty of Economics and Business, University of Split – Faculty of Economics, University of Osijek – Faculty of Economics, University of Rijeka – Faculty of Economics, University of Mostar – Faculty of Economics, University of Tuzla – Faculty of Economics, University of Malta – Faculty of Economics, Management and Accountancy, Kaunas University of Technology – School of Economics and Business, The University of Dąbrowa Górnicza – Wyższa Szkoła Biznesu, VŠB – Technical University of Ostrava – Faculty of Economics, Mendel University in Brno – Faculty of Business and Economics, “St Kliment Ohridski” University – Bitola – Faculty of Economics – Prilep).

Members of the Organising Committee and all the members of the international reviewing team were at disposal all the time and to them we extend our warmest gratitude.

October 2017, Dubrovnik

Associate professor Ivona Vrdoljak Raguž, PhD
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Abstract

Young businesses are very vulnerable during first stage of life. There are many causes that can lead to premature extinction of companies. The purpose of this paper is to verify if the level of risk that enterprises face in their first year of life affects their survival. To this end, an empirical survey has been carried out on Italian companies established in 2009, 2010 and 2011. In order to reduce the influence of undercapitalization on the survival of the firms in the first stage of life, only companies with a share capital ≥ €50,000 were included in the sample. Furthermore, only companies not belonging to a private or public group were included in the sample. This is to in order to eliminate the influence of the financial strength of the public and/or private holding on the survival of the companies examined. The study has highlighted that these companies with a strong capitalization (with a share capital ≥ €50,000) have very high survival rates at five years; furthermore, their survival is not affected by an operating and financial risk higher than average. Therefore, the high vulnerability rate of young firms seems to be mainly caused by undercapitalization rather than the risk rate they face.

Keywords: risk, start-ups, survival rates of young firms

* Domenico Nicolò is the author of the Background, the 2nd and the 4th sections, Ivan Nania is the author of the 3rd section.
1. BACKGROUND

In the first stage of life, companies undergo a severe selection (Dun and Bradstreet, 1988; Knaup and Piazza, 2005, 2008).

Since business survival rates at the first stage of life are very low in different countries and in different industries, as well as in time (birth year), high vulnerability is a distinctive feature of young firms (Nicolò, 2015 a and b Nicolò, 2017).

Why are young businesses so vulnerable?

Among the conditions that most affect the vulnerability of enterprises during the first stage of life, the literature emphasized the following:

- context variables (Mintzberg, 1973, Dubini and Schillaci, 1988, Moore, 2006, Adner and Kapoor, 2010, Moss Kanter, 2012), in particular the degree of consistency of the strategy with the structure of the industry in which they operate (Biggadike, 1976; Miller e Camp, 1985; Cooper, et al., 1986; Cooper, 1993; Sandberg, 1986; McDougall et al., 1992);
- the characteristics of the founder (s) (Child, 1972; Kirzner, 1979; Carland et al., 1984; Gartner, 1985; Katz and Gartner, 1988; Miles et al., 1988; Storer, 1988; Shaver and Scott, 1991; Åstebro T. and Bernhardt I., 2003) gender (Birley, 1989; Brush, 1992), risk tolerance (Brockhaus, 1980) and fear of failure (Cacciotti and Hayton, 2015, Cacciotti et al 2016, Kollmann et al. (Brockhaus and Horwitz, 1986, Gatewood et al., 1995), education, professional competence and entrepreneurial experience (Weick, 1972, Sandberg, 1986, Bird, 1993, Chandler and Hanks, 1994; Rasmussen and Sørheim, 2006);
- the activities carried out by the founder (s) before and after the start-up, the duration (Gartner, 1988, Bygrave, 1989, Timmons, 1990, Vesper, 1990, Longsworth, 1991, Van der Ven and Poole, 1995, Van de Ven and Engleman, 2004, Carter et al., 1996) and the sequence with which these activities are carried out (Gartner, 1985; Delmar and Shane, 2002; Liao et al., 2005);
- strategic alliances with reputable partners (Chang, 2004);
- participation in the business plan competitions (Cannice, 2004; Wen & Chen, 2007; Russell et al., 2008; Bell, 2010; Ross & Byrd, 2011; Ruisi, 2015) and business incubation programs (Dagnino, 2015) to accelerate the process of building the company’s reputation.

Regardless of the specific causes that in individual cases may result in a cessation of an enterprise, such an early extinction reveals that in the pre-startup stage the founders did not draft a business plan or did not properly evaluate the expected results (Ansoff et al., 1970; Bracker et al.; Bracker and Pearson, 1986; Grinyer et al., 1986; Ramanujam et al, 1986; Haswell and Holmes, 1989; Venkataraman et al, 1990; Buttà 1995, 2003; Davis and Olson). A business plan based on credible and accurate assumptions and estimates highlights the mistakes in the designing and launch of the new business, especially when such errors are so serious as to bring about such an early extinction of the enterprise. Dot-com, for example, has very high rates of fallibility in the early years because their founders often do not evaluate
sustainability on the basis of an analytical plan, but start the company on the basis of ephemeral signs of appreciation such as, for example, “like”, visits to websites, etc. (Porter, 2001)

If a business plan is not prepared or if is not properly valued, it is very likely to underestimate the company’s financial needs and find out the crisis when it is too late to counteract it effectively. Our previous research on 668 failed companies in Italy has shown this relationship between early enterprise extinction and information shortages resulting from the inadequacy of the information system: approximately ⅓ of the observed companies ceased to exist in the first ten years of life and the almost all of them operated under severe lack of information because they did not use management control programming systems (Nicolò, 2011).

The lack of corporate reputation is the source of weakness common to young companies, distinguishing them from those found in later life stages. They do not have a history that can witness the ability to keep their commitments and their high failure is well-known (Damodaran, 2009). For these reasons, young companies have significant difficulties in building strong bonds of trust with stakeholders. As soon as the first difficulties arise, these fragile bonds break down and the enterprise faces the crisis because of the lack or shortage of the human, technical and financial resources it needs to carry out its business (Nicolò, 2015 a and b, Nicolò, 2017).

Early extinction of young businesses, therefore, has a common (or general) cause, which is the lack of corporate reputation, and many different specific causes, depending on each case, that produce unpredictable effects on the performance of the companies.

This paper examines one of the most important specific causes of business survival: the operational risk and financial risk at birth. In particular, this study aims to assess whether companies that have a higher operational and financial risk profile than average, are more vulnerable in their first years than other companies.

The first section describes the research problem, the objective, the hypotheses and the method used.

The second section shows the results of the empirical survey conducted on three cohorts of companies born in 2008, 2009 and 2010 with a share capital ≥ €50,000.

Finally, conclusions are drawn on the results of the survey.

2. RESEARCH QUESTION, HYPOTHESES AND METHODOLOGY

In order to verify whether the operational and financial risk of the companies at the time of their birth affects the chances of overcoming the first stage of life, we measured the leverage (annual change in operating result / annual change in revenues) and leverage (total asset / net equity) with reference to the first business activity for companies born in 2009, 2010 and 2011.
To reduce the influence of the economic cycle on the results of the survey, this research examined the companies born in three different years.

The following three cohorts 2009-13, 2010-14 and 2011-15 were then defined. For each cohort, the business and financial risk of companies at birth and their survival / extinction at five years were compared.

The companies in each cohort were classified in the following four risk classes:

1. high operational risk and high financial risk;
2. high operational risk and average financial risk;
3. medium operational risk and high financial risk;
4. average operational risk and medium-sized financial risk.

The distinction between high and average risk, both in terms of operational risk and financial risk, has been made with regard to the median. The underlying idea is: operational risk and / or financial risk cannot be considered high, medium or low, but only in relative terms, i.e. in relation to the median. In this sense, the risk was assumed as high if it falls within the 25th percentile of companies with higher risk rates or as average if it takes values that are located in the two 25th percentiles respectively upper and lower than the median.

In order to focus on the most significant enterprises, among the Italian companies belonging to the three cohorts, only those with a share capital ≥ €50,000 were examined. In this way has been reduced the number of companies that have ceased to exist in the first five years due to undercapitalization rather than because of a high financial and operational risk.

Only “autonomous” companies, such as those not belonging to a private or public group, were included in the sample. This is to consider only companies whose survival depends on their ability, not on the financial strength of the holding. For the same reason, public companies were also excluded.

The companies for which a bankruptcy or liquidation procedure began in the first five years after the birth, were included in the class of non-survivors. These procedures generally take a long time, sometimes even years. Considering the survivors of these companies, which will certainly cease to exist, would have altered the results of the investigation.

3. THE RESULTS OF THE EMPIRICAL SURVEY ON ITALIAN COMPANIES

In order to study the relationship between operational and financial risk and survival of enterprises in the first stage of life, we selected the companies born in Italy in 2009, 2010 and 2011.

We included in our sample only the autonomous firms, excluding enterprises controlled by other companies, State and municipalities.
To investigate the relationship between risk rate and business survival in the first stage of life, only larger companies were examined, with a minimum share capital \( \geq \€50,000 \). In this way, small companies which generally cease to exist because undercapitalization, rather than for other causes, such as their operational and financial risk rate, were excluded from the sample.

We considered as survivors the companies active in the fifth year after birth but only if no bankruptcy or voluntary liquidation procedure was initiated in the first five years of life.

This paper aims at studying the relationship between the initial level of risk of each firm and its survival in the five years after birth.

Our aim was to study the relationship between the initial level of risk of each firm and the latter one’s possibility to survive after five years.

We used the operational leverage as the proxy of operational risk, as the ratio between the annual variation of operative income and the variation annual of revenues. This indicator explains the relationship between fixed costs and operational risk rate.

We measured also the impact of initial level of financial risk on the chances of the young firms to survive five years after their birth. So, we used the financial leverage as a proxy of firm’s financial risk, as the ratio between total asset and net assets.

We centered the distribution of our sample around the median, and we classified as medium risky the firms with an operational and financial risk rate, in the 25\(^{th}\) percentile above and below the median. We classified as high risky the ones with an operational and financial risk rate in the higher 25\(^{th}\) percentile of our sample.

This study aims at determining whether a higher risk rate increases the probability that the firms fail in their first stage of life. Than we decided to mix the different level of the financial and operational risk rate in order to study if there is a relationship between the different combination of operational and financial risk and the possibility of firms to survive after five years.

In the following tables, we present our results for each cohort of firms:
Survival rates - Cohort 2009-2013

<table>
<thead>
<tr>
<th>Survival</th>
<th>Financial risk rate</th>
<th>total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>high</td>
<td>medium</td>
<td></td>
</tr>
<tr>
<td>Operational risk rate</td>
<td>high</td>
<td>219</td>
<td>365</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>18.72%</td>
<td>31.20%</td>
</tr>
<tr>
<td></td>
<td>medium</td>
<td>182</td>
<td>404</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>15.56%</td>
<td>34.53%</td>
</tr>
<tr>
<td>Dead</td>
<td>Financial risk rate</td>
<td>total</td>
<td>%</td>
</tr>
<tr>
<td>Operational risk rate</td>
<td>high</td>
<td>14</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>17.07%</td>
<td>35.37%</td>
</tr>
<tr>
<td></td>
<td>medium</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>15.85%</td>
<td>31.71%</td>
</tr>
<tr>
<td>total</td>
<td></td>
<td>1252</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Elaboration on data provided by AIDA, Bureau Van Dijk

In this first cohort, the five-year survival rate is 93.45%, 1170 out of 1252 firms in the sample. Such a high survival rate of five years is justified in the light of the selection criteria of the sample which, as already mentioned, led us to include in the analysis only companies with a share capital ≥ €50,000.

Of these survival companies, only 219 (18.72%) were faced with a high level of both operational and financial risk rate, and 404 (34.53%) firms were faced a medium risk rate.

Survived after five years 219 out of 233 (93.99%) firms born with both high financial and operational risk rate; 404 out of 430 (93.95%) of firms born with both a medium level of leverage, survived after five years.

34.53% of surviving enterprises show an average financial and operational risk rate, while 18.72% of the survivors show a high financial and operational risk rate.
Survival rates – Cohort 2010-2014

<table>
<thead>
<tr>
<th>Survival</th>
<th>Financial risk rate</th>
<th>total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational risk rate</td>
<td>high</td>
<td>medium</td>
<td></td>
</tr>
<tr>
<td>high</td>
<td>240</td>
<td>400</td>
<td>640</td>
</tr>
<tr>
<td>%</td>
<td>18,77%</td>
<td>31,29%</td>
<td></td>
</tr>
<tr>
<td>medium</td>
<td>181</td>
<td>457</td>
<td>638</td>
</tr>
<tr>
<td>%</td>
<td>14,16%</td>
<td>35,76%</td>
<td>1278</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dead</th>
<th>Financial risk rate</th>
<th>total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational risk rate</td>
<td>high</td>
<td>medium</td>
<td></td>
</tr>
<tr>
<td>high</td>
<td>25</td>
<td>35</td>
<td>60</td>
</tr>
<tr>
<td>%</td>
<td>25%</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td>medium</td>
<td>13</td>
<td>27</td>
<td>40</td>
</tr>
<tr>
<td>%</td>
<td>13%</td>
<td>27%</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Elaboration on data provided by AIDA, Bureau Van Dijk

In this second cohort, we have 1378 born firms with a survival rate of 92.74%. 265 firms (19,23%) started their activity with a high level of both operational and financial leverage, and 484 (35,12%) firms with a medium risk rate.

The 90,56% of firms born with both high level of leverage survived after five years; the 94,42% of firms born with both a medium level of leverage survived after five years.

Survival rates – Cohort 2011-2015

<table>
<thead>
<tr>
<th>Survival</th>
<th>Financial risk rate</th>
<th>total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational risk rate</td>
<td>high</td>
<td>medium</td>
<td></td>
</tr>
<tr>
<td>high</td>
<td>165</td>
<td>256</td>
<td>421</td>
</tr>
<tr>
<td>%</td>
<td>17,88%</td>
<td>27,74%</td>
<td></td>
</tr>
<tr>
<td>medium</td>
<td>151</td>
<td>351</td>
<td>502</td>
</tr>
<tr>
<td>%</td>
<td>16,36%</td>
<td>28,03%</td>
<td>923</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dead</th>
<th>Financial risk rate</th>
<th>total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational risk rate</td>
<td>high</td>
<td>medium</td>
<td></td>
</tr>
<tr>
<td>high</td>
<td>26</td>
<td>77</td>
<td>103</td>
</tr>
<tr>
<td>%</td>
<td>13,54%</td>
<td>40,10%</td>
<td></td>
</tr>
<tr>
<td>medium</td>
<td>34</td>
<td>55</td>
<td>89</td>
</tr>
<tr>
<td>%</td>
<td>17,71%</td>
<td>28,65%</td>
<td>192</td>
</tr>
</tbody>
</table>

Source: Elaboration on data provided by AIDA, Bureau Van Dijk
In this last cohort, we have 1115 born firms, the smallest number in our sample. This cohort we have a survival rate of 82.78%. We can see that the 17.13% (191 firms) of firms started with a high level of both operational and financial risk rate, and 36.41% (406 firms) with a medium level.

The 86.38% of firms born with both high level of leverage survived after five years; the 86.45% of firms born with both a medium level of risk rate survived after five years.

It is interesting to notice that, again, firms that presented a high level of leverage, and of risk as a consequence, have a higher survival rate, but with a very small difference compared to the other two cohorts.

In our opinion, the empirical results we presented do not allow us to affirm that there is a strong relationship between, the initial level of operational and financial risk and the possibility that the firm survive after five years. However, it is interesting to notice that firms that start with a different level of leverage with respect the majority of the other ones have a higher survival rate. This could mean that firms that start different are more able to adjust their behaviour to the changes of the market.

4. FINDINGS AND RESEARCH PERSPECTIVES

Our previous research has revealed that the average five-year survival rate of Italian companies for 2004-09, 2005-10, 2006-11 cohorts is 53.46%. For the same three cohorts the average five-year survival rate of European companies is 61.36% whereas for US’s firms it is 52.10% (Nicolò, 2015).

In the three cohorts examined in this paper, the five-year survival rates of enterprises are much higher: 93.45% for the cohort 2009-13, 92.74% for the 2010-14 cohort and 82.78% for the cohort 2011-15. That’s because only enterprises with a relatively high capitalization (which have been started with a share capital ≥ €50,000) have been included in the sample. In this way, small enterprises have not been included in the study, which have very modest five-year survival rates, especially because they are under-capitalized. In this way, research focused more on the relationship between the operational and financial risk of business in the first year of activity and their survival / termination in the first five years of life.

Our sample consists of a relatively small number of companies (1253, 1378 and 1115 in the three cohorts examined) also for another reason: it only includes autonomous companies, such as ones not controlled by other companies, State or municipalities. The latter were excluded from the analysis because their survival is facilitated by the benefits of being part of a private or public group.

The examination of the three cohorts of companies revealed that:

a) among the companies with a higher risk rate (both operational and financial) in the first year of life, survivors are more than those that cease to exist in the first five years of life;
the risk rate in the first year of life does not affect the survival of businesses in the first stage of life. In the three cohorts examined, the five-year survival rates of companies with higher risk rates are similar to ones of companies with average risk rates: in the first cohort (2009-2013), 93.99% of firms with a high birth risk profile and 95.95% of those with an average risk profile at birth; in the second cohort (2010-2014), 90.56% of firms with a high risk profile and 94.42% of those with an average risk profile survived; In the third cohort (2011-2015) of firms with a high risk profile survived 86.38%, while those with a medium risk profile survived 86.45%.

These results should not be surprising: it is well-known whether fixed asset investments and debts are relatively high, on the one hand, they are a source of risk that jeopardizes the survival of businesses, on the other hand, especially in firms with adequate capitalization, they can boost business performance.

The results of this study may be related only to companies established in Italy in the three-year period 2009-2011, with a share capital \( \geq \€50,000 \) and autonomous because not belonging to private or public groups.

Subsequent research will examine the relationship between the operational and financial risk rate of the first year of business activity and survival of enterprises in the first stage of life in different countries and industries.

Smaller companies, with a share capital \( \geq \€50,000 \), are more vulnerable than those examined in this study, especially at the initial stage of life. It will be interesting to measure how much these small businesses are most affected by the level of operational and financial risk they face when starting their business, compared to those with a higher capitalization. If companies with a high risk and those who are facing a medium risk have similar five-year survival rates, it is clear that the high vulnerability of young businesses is mainly caused by undercapitalization rather than the risk rate they face. To counteract the high vulnerability of young businesses, therefore, adequate capitalization is needed.

REFERENCES


LEADERSHIP IN VOLATILE TIMES

Abstract

Today many companies have to struggle with different challenges such as having to face increasing volatility and ambiguity in the markets. From a global perspective, the average engagement of employees is very low. Managers tend to be overloaded with data and lose contact to the strategic perspective. Hence there are several examples of companies and NPOs which have found ways to solve problems like these. They function on the basis of a self-organization with decentralized decision-making instead of a hierarchical pyramid. Despite distinct features in detail, this kind of a relatively new way of organizing may be summarized with the following characteristics: purpose-driven, distributed authority, self-management, and wholeness. In this paper, I review characteristics, strengths and challenges of these approaches based on a literature review and case studies. Some popular misconceptions are also addressed. The paper shows different approaches of how to implement or rather integrate self-organization with decentralized decision-making. Furthermore, some topics are discussed which may become crucial during such an organizational change process.

Keywords: organization, agility, leadership, teal

1. THE FUTURE OF ORGANIZATION IS ALIVE ALREADY

In hierarchical organizations, all decisions of relative importance are usually made by managers. Very often, they are not connected to the practical activities anymore. Hence those decisions are not well-founded in many cases and cause resistance among the subordinates. To be subjected to such decisions, reduces the motivation of many employees. From a global perspective, only 13% of employees was found to be actively engaged at work, whereas 24% are actively disengaged (Gallup 2013). On the one hand, managers tend to be overloaded by operative details and lose sight of the strategic perspective. On the other hand, they apt to hold on to the power and status of their position within a stable hierarchy.
But it may be possible to find some organizations in Europe and the USA which do not even have flat hierarchies but no one at all. Interestingly, those companies have developed their own approaches more or less independently from one another. Semco in Brazil is probably the first example which needs to be discussed in this context (Semler 2004). Frederic Laloux described 12 more in his book “Reinventing Organization” (Laloux 2014). Some others may have been found in the meantime. These organizations include production (e.g. Morning Star, Patagonia) , service industry (e.g. Zappos, ESBZ), profit (e.g. SUN hydraulics) and NPO (e.g. rhd). Some of these organizations are small (e.g. evolution at work) and some are big (e.g. AES). Moreover, it is interesting to point out that some were already founded in a self-organized manner (e.g. Buurtzorg, evolution at work), whereas others were transformed (e.g. FAVI, Poult). These organizations show successful results by applying organizational practices which radically contradict dominating convictions. The US-company Morning Star produces tomatoes worth $700 million annually with about 400 employees. They achieved a double-digit growth rate compared to the 1% of their competitors. The Dutch neighborhood-nursing organization Buurtzorg grew from 10 employees to 7000 with a market share of 75% within 7 years. These are examples for organizations which differ fundamentally from well-known organizational structures.

Figure 1 organizations with decentralized decision-making (Pircher 2015b)

Laloux (2014) summarizes four characteristics of these different approaches which were mainly developed independently form one another.
To a different extent, they show the following features: purpose-driven, self-management and distributed authority, as well as wholeness

1.1. **Purpose-driven**

Serving the purpose or mission of the organization provides the leading orientation for every decision and action. Whether an idea or argument is good or bad will be judged by this estimation. Every employee at Morning Star “is [for example] responsible for drawing up a personal mission statement that outlines how he or she will contribute to the company’s goal of ‘producing tomato products and services which consistently achieve the quality and service expectations of our customers.’” (Hamel 2011).

1.2. **Self-Management and distributed authority**

The power to make decisions is allocated to those people in the organization who are competent. Employees decide how much money to spend on specific purposes such as salaries. They are responsible for acquiring the knowledge and tools needed to do their work. Employees even determine the strategy and salary but they also know that they have to earn the required profits. There are neither titles nor promotions because there is no managerial pyramid. In such organizations, there are no managers anymore. However, everybody is a manager in terms of competencies to make decisions. One employee puts it like that: “I’m driven by my mission and my commitments, not by a manager” (Hamel 2011).

The structures give people high autonomy within their domain. Employees negotiate responsibilities with their peers. They apply market-style practices in their relationships. If they lack the money to make certain investments, they have to convince colleagues to lend them money. “There is a social risk in doing something your colleagues think is stupid.” (Hamel 2011, Laloux 2014).

1.3. **Wholeness**

People do not have to fit into predefined “boxes”. They tend to be seen as a whole human being, not only a rational employee. As a consequence, the employees will develop their full potential. Moreover, they are expected to take on more responsibilities as they develop further competencies. The roles are therefore more versatile and complicated than elsewhere (Laloux 2014, Hamel 2011). For all the above mentioned reasons, individual development is more accessible than in hierarchical organizations (e.g. Rooke / Torbert 2005).

2. **STRENGTHS AND CHALLENGES**

It may be concluded that in such organizations, the employees have a lot of freedom to do what they are convinced is the best thing to serve the purpose. Simultaneously, they have peer-negotiated responsibility for the results
of their actions. There are almost no rigid structures like hierarchies and status markers which keep them from fulfilling their mission. Certainly, there are clearly defined processes for decision-making and accountability.

Such a fundamental shift of organizational structure and culture also has its drawbacks. It usually takes quite a long time to get accustomed to it and to become productive. Acculturation is not easy. Not everybody is willing to work for such an organization or is suitable for it. Employees who are used to working in a rigid hierarchical environment may not be able to adjust. This selection criterion is difficult to assess and constitutes a limitation for growth in terms of number of employees. Hence, recruiting and on-boarding represent growth-limiting factors. Without a hierarchical ladder to climb, employees may also find it difficult to evaluate and communicate their progress in comparison to their peers. That can become a handicap when they want to switch companies. Peer-negotiated responsibility requires explicit feedback in case a counterpart did not meet his or her promises. This may be challenging for employees on both sides, but it constitutes a core factor for productivity (Hamel 2011; Pircher 2015a).

It appears to be evident that a new type of purpose-driven organization requires people with the ability and willingness to manage their actions and competencies quite independently and coordinate them with colleagues. On top of their professional expertise, they have to establish self-management and self-leadership abilities. Self-leadership may be defined as “a comprehensive self-influence perspective that concerns leading oneself toward performance of naturally motivating tasks as well as managing oneself to do work that must be done but is not naturally motivating” (Manz, 1986: p. 589). In addition to self-management, the concepts of the “what” and “why” are covered. By focusing on the “why” and “what” of self-influence, individual self-leaders address the underlying reasons for effort and behavior (Manz, 2013). Increased self-leadership corresponds with better affective responses and improved work performance (Stewart, Courtright & Manz, 2011).

For this new approach in organizing collaboration, we may summarize the following strengths:

- increased flexibility and responsiveness;
- higher ability to create innovation;
- strong commitment of employees to decisions because they are invited to take part in them actively;
- decisions and actions are more strongly linked to the purpose and the strategy of the company.

... and weaknesses:

- recruiting, on-boarding and acculturation are much more important and difficult;
- it may be challenging for employees to evaluate and communicate their progress in comparison to peers;
- performance and payment could be difficult to assess;
- self-management and self-leadership-competencies are required.

3. POPULAR MISCONCEPTIONS CONCERNING SELF-ORGANIZATION

This type of organization with decentralized decision-making seems to contradict our fundamental assumptions regarding the organization of human collaboration. This fact results in a lot of misconceptions which are addressed briefly in the following paragraphs:

- “There is a lot of talking and little action”: Clear structures and processes create a “grid” which channels discussion and interaction towards the purpose. Personal accountability for actions and achievements ensures that nobody hides behind the decisions of a superior.
- “There are still hierarchies but hidden ones”: A fluid and purpose-driven structure allows existing human competencies to be effective wherever they are needed. There are still different levels of competency but they are neither rigid nor self-sustaining.
- “This is a nice hippie utopia but it doesn’t work in real business life”: Most of these new organizations earn profits which they could even increase through this fundamental transformation.

4. HOW TO GET THERE? GREEN-FIELD, RADICAL OR INCREMENTAL CHANGE

There are basically three possibilities of how to transform an existing hierarchical organization:

- a new organization is founded on the basis of the principles of self-organization;
- a radical change is ordered for an existing hierarchical organization by its top-management (e.g. by Tony Hsieh at Zappos using Holacracy, e.g. Gelles 2015);
- a process of incremental and participative step-by-step change is started.

Which of these approaches is the one of choice strongly depends on the history of the organization and on the mindset of the leaders and owners. If change of the company as such seems to be impossible or too difficult, it could be a suitable solution to found a new organization as an “incubator” of innovation, etc. The challenge then could be to integrate these innovations into the “old” company. A radical change from a managerial pyramid to self-organization with decentralized decision-making needs a lot of decidedness and readiness to accept risks. The incremental approach allows developing a suitable solution step-by-step which fits to the existing organization.
In any case, one precondition is indispensable: A leader or owner who realizes the potential of a much more flexible and responsive organization and who takes the risk of starting something completely new. A human being who embodies such a collaborative and participative mindset of the future company is required (Laloux, 2015).

During transformation, the following “hot topics” are likely to gain importance:

- What is the real purpose, the mission of the organization?
- Which approach does best fit to the organization to gain more organizational flexibility? Is it advisable to develop something completely new on the green-field? Is it better to implement a concept out of the box like Holacracy (Robertson 2015)? Or is it recommendable to start a step-by-step process with a first team or department?
- What are approaches which fit to the purpose and the history of the organization regarding topics such as decision-making, definition of roles and processes, competency-development in areas like self-leadership, etc.?
- How can present managers be supported to find an image of their future identity in the organization?
- How can an organization negotiate salaries without any hierarchies and traditional career ladders?
- Who wants to join the journey? How should an organization part ways with employees who cannot identify with the new organizational identity and structure?
- What recruiting process is recommendable to find the best candidates who can also identify with the company culture?

5. CONCLUSION

Generally speaking, the ability of companies to survive is nowadays endangered by a more and more volatile and ambiguous environment and by rigid internal structures. Every year we see business “dinosaurs” of an old military management style passing away because they were unable to adapt to changing environments. Sometimes they even seem to be too arrogant to take these changes seriously.

For those leaders who accept the challenge, self-organization with decentralized decision-making offers possible answers. These concepts give the company much more flexibility, foster innovation and increase the commitment of the employees towards the common purpose. However, drawbacks are inevitable and important decisions need to be made: Which approach is the most suitable for the existing company? How can crucial topics be addressed? What can be done with managers and employees who do not want to join the journey?

In business as in nature, not the strongest survives but those who are best adapted to their environments. Hierarchical organizations may survive in niches but
it seems to be evident that they will not be the determining concept for the networked and global economy. It is very likely that the current concepts of self-organization with decentralized decision-making will be further developed in the near future. Therefore, our current knowledge should not get to be the next hype of management. But to ignore the examples of companies implementing them successfully and not thinking about potential for learning could be counterproductive.

REFERENCES


BUSINESS ETHICS
Abstract

The concept of corporate social responsibility implies that the company has far more responsibilities that overcome its basic economic responsibility. Corporate social responsibility is the imperative of modern business and one of the prerequisites for achieving competitive advantage. Thus, in order to be socially responsible, it is important for a company to demonstrate a certain level of responsibility towards its stakeholders. Historically, the concept of social responsibility has been the subject of numerous discussions, but also different theoretical models. Some of these will be presented in the paper. The aim of the paper is to explore the notion of corporate social responsibility, with the presentation of social responsibility in Bosnia and Herzegovina, and the analysis of the perception of social responsibility of representatives in local companies. Paper shows results of the research of 100 companies in Bosnia and Herzegovina, about their most important stakeholders and various types of social responsibility. The paper will also examine the impact of sociodemographic factors and job characteristics on the attitudes about corporate social responsibility. The paper, in addition to the conclusion, offers concrete recommendations for improving the state of corporate social responsibility in Bosnia and Herzegovina.

Keywords: corporate social responsibility, companies in Bosnia and Herzegovina
1. INTRODUCTION

In the last couple of decades there is a growing interest for corporate social responsibility (CSR). Interest in CSR is mostly expressed by representatives of academia, business, but also government, media and general public. Being socially responsible in today’s business means following the current practices that presume that companies need to focus on other direct and indirect stakeholders, alongside its customers. By doing so, company can be socially responsible according to different categories of responsibility, from initial economic responsibilities to holistic philanthropic responsibilities. From the view of theoretical framework presented in this paper it is possible to state the following hypothesis: The companies in Bosnia and Herzegovina follow the hierarchy of corporate social responsibility represented by Carroll’s pyramid of social responsibility. This means that companies primarily demonstrate economic responsibility (business, making profit, fulfillment of customers’ needs). In order to understand the concept of CSR, the first part of the paper will present the historical development of CSR. This part will also present the theoretical concept of CSR, with its current definitions. Second part of the paper shows research regarding CSR in Bosnia and Herzegovina. This is done by analysis of publicly conducted CSR activities and published research. The empirical part of the paper explores the attitudes of representatives of companies in Bosnia and Herzegovina, regarding CSR. Research show attitudes about different categories of CSR and key stakeholders of the company. Furthermore, this paper analyzes influence of social-demographic characteristics of the respondents on their attitudes towards CSR. The research has been conducted according to the primary data collected through the use of telephone survey. At the end, paper lists recommendations for action and future research in order to improve the state of CSR in Bosnia and Herzegovina.

2. CORPORATE SOCIAL RESPONSIBILITY

The history of CSR is marked by a central debate on the essence of social responsibility and its main purpose, as well as a series of theories that focus on defining the term of CSR. The area of CSR becomes particularly interesting after the World War II and during the 60’s. Market development lead to more competition, which forced companies to find new ways of creating their own competitive advantage. Parallel to that, there was a sudden rise of social movements that demanded the fulfillment of various social goals. This created unprecedented pressures on governments and the business world. Different authors quickly responded and started extensive research in the area of CSR. Today, CSR is accepted as a valid paradigm and is subject of interest of numerous institutions and groups that have been specifically designed to further research and promote CSR practices. An overview of CSR research shows that the authors and researchers initially dealt with the essence of a company’s existence, answering the question of whether the basic role (purpose) of company is narrow economical by its nature, or broader social. Bowen in his
book about CSR published in 1953, defines social responsibility of a company as a obligation to follow policies, make decisions, and conduct the actions that are desirable within the goals and values of our society (Bowen, 2013). Later on, the same author will extend this definition, adding that CSR refers to a set of moral and personal obligations that the employer must follow, considering his own policies, decisions and actions in the context of the goals and values of society (Martinez, Fernandez & Fernandez, 2016). In the introduction of his book, Bowen emphasizes that corporate decisions and actions have a direct impact on the quality of our lives and our personalities. Corporate decisions do not only affect the company, but its stakeholders, its workers, customers – they influence the lives and destinies of all of us (Bowen, 2013).

The Committee for Economic Development (CED) in the early 70’s used the concept of “three concentric circles” in explaining CSR - inner, intermediate and outer responsibility. The inner circle referred to the basic economic functions (production, jobs, economic growth, etc.), while the intermediate circle was devoted to the development of awareness about changing social values and priorities (environmental conservation, hiring, relations with employees, etc.). Outer circle emphasized new responsibilities that are yet to be placed in front of the company (poverty, urban blight, etc.) (Karake-Shalhoub, 1999). Early theoretical papers about CSR are linked to Sethi’s model of social responsibility, which presented three types of socially responsible behavior. These behaviors, labeled as “socially responsible performance”, include (Katsoulakos & Katsoulakos, 2006): social obligation (obligation towards legal and market restrictions), social responsibility (responding to social norms, values and expectations of performance) and social reactivity (anticipatory and preventive adaptation to social needs). In Sethi’s model social commitment implies fulfilling the basic conditions of business environment, while social responsibility is related to the way companies respond to the demands according to applicable social norms, values and expectations of the public. The highest level of social activity implies social reactivity, that is anticipating the future demands of the society and responding to it. Companies at the first level behavior follow the legal instructions, while at the last level they are actively involved in addressing social needs. Starting from Sethi’s model of social responsibility, Carroll created model of four categories of social responsibility (Carroll, 1979): 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 Carroll challenged the accepted dogma which assumed that individual entrepreneurs and companies must simultaneously be business-minded, ethical, socially and ecologically responsible (Letica-Cerjan, 2010). CSR pyramid, on the other hand, states that there is a hierarchy of different categories of CSR, and that companies can enhance their own position within a particular category. Primary responsibility is economic responsibility because it is fundamentally related to the company’s existence (making profits). After that, follows a legal, ethical, and finally philanthropic category of social responsibility.
Wood at the beginning of the 90’s stated that CSR can be observed in the context of different roles that company can have in one society. Thus, company can be seen as an institution within a society, as an individual organization or as individual managers who have a moral role within the company (Wood, 1991a). Based on this, three principles of CSR can be developed: institutional, organizational and individual. Wood creates a concept of social performance that besides these principles, also focuses on processes of social adaptation, and the results of business behavior. Social adaptation in this model relates to environmental assessment, stakeholder management and problem management, while the results of business behavior can be: social influence, social programs and social policy (Wood, 1991b). Encouraged by the processes of globalization, Quazi and O’Brien developed a multinational CSR model, adapted to new business conditions in the global marketplace. Authors criticized existing CSR models because they were solely based on the ethnocentric experiences of Western countries. Instead, the focus of their research was directed at countries like Australia and Bangladesh. The model consists of two dimensions - the long-term CSR and the results of CSR activities (Quazi & O’Brien, 2000). These are also the basic differences between CSR implementation in different cultures.

The dominating model of CSR today emphasizes that CSR can be seen as economic, environmental (ecological) and social responsibility towards all stakeholders and the general public (Zheng, 2010). Economic responsibility means that company should take into account the fulfillment of basic economic functions, that is to be financially successful and long-term profitable. Environmental (ecological) responsibility seeks to promote the principles of ecological sustainability and responsibility towards the planet Earth. This is manifested through a series of responsive activities (waste disposal, recycling, biodiversity conservation, attitudes towards climate change and so on). Social responsibility in this model is more widely understood and refers to the overall welfare of society. The company should help improve the welfare of society and increase the welfare of members of local community. Defined like this, CSR is a long-term commitment of the company, focused on tackling the effects of its own activities in the context of the economic, ecological and social dimensions of the environment. This ensures fair and long-term benefits without harm to all involved stakeholders (De Regil, 2013).

Regarding empirical research about CSR, there were many studies around the world. While authors discussed the legitimacy of CSR, consumers and investors have developed clear preferences for socially responsible companies. For example, empirical evidence shows that sometimes socially responsible initiatives, under certain conditions, can affect consumer intentions of purchasing products of a given company (Sankar & Bhattacharya, 2001). Scientific research focused on the understanding company’s stakeholders, defining which types of CSR could be applied and the way of reconciliation of CSR with some established business priorities (Tafra-Vlahović, 2009). Different studies concluded that CSR has a positive impact on the final balance, plays an important role in reputation management, increasing operational efficiency, and creating a positive atmosphere among employees. As far as ranking on CSR
pyramid, available research shows different results. In Singapore, respondents rated legal responsibility highest, followed by ethical responsibility, economic responsibility and philanthropic responsibility (Tan & Komaran, 2006). The study of 457 respondents in Malaysia showed that Malaysian stakeholders ranked the four dimensions as economic, ethical, legal and philanthropic accordingly (Dusuki & Tengku Mohd Yusof, 2008). Within this paper, empirical research will be conducted based on Freeman’s stakeholder theory and Carroll’s CSR pyramid. Stakeholders are defined as anyone who influences or is the subject of company influence (Gray, 2001).

3. CSR IN BOSNIA AND HERZEGOVINA

When it comes to Bosnia and Herzegovina, there is little research done on CSR. This is an area that is still developing, both in academia and business world. This implies that there is an exceptional need for affirmation of CSR concept (Đelić, 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 (Čatić-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, Mehić, Resić & Kramo, 2008).

The results of Prime Communications research show that most company representatives (92%) state that CSR is included in their companies’ annual plans, but 87.5% of them added that their companies are still occupied with other priorities. Representatives think that they should devote more time to CSR activities. This research also showed that around 58% of companies in Bosnia and Herzegovina do present their CSR activities publicly (BH Telecom, 2016).

It is important to note that there is no institutional mechanism for the development of CSR in Bosnia and Herzegovina. Nevertheless, the UN Global Agreement Network has been established. This network brings together 72 representatives of local companies and civil society organizations, with a clear mission of promoting CSR. In addition, there are a number of other initiatives aimed at developing and enhancing CSR in Bosnia and Herzegovina.
4. EMPIRICAL RESEARCH OF CSR IN COMPANIES OF BOSNIA AND HERZEGOVINA

For the purpose of testing the hypothesis, the authors have conducted the primary research through the use of original questionnaire. Stratified random sampling was used for small, medium-sized and large companies in Bosnia and Herzegovina in relation to the number of employees. Authors used population list that was created by Indirect Taxation Authority of Bosnia and Herzegovina. Representatives of one hundred companies have been phone interviewed (31.25% usable response rate). The results were analyzed in SPSS software through the use of descriptive statistics, t-test of independent samples and One-way ANOVA. Moreover, Likert scale was used to measure respondents’ perceptions of company’s social responsibility.

Table 1

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our company is characterized by conducting socially responsible activities.</td>
<td>85%</td>
<td>15%</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Our company is characterized by high degree of economic responsibility.</td>
<td>86%</td>
<td>14%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Our company is characterized by high degree of legal responsibility.</td>
<td>83%</td>
<td>17%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Our company is characterized by high degree of ethical responsibility.</td>
<td>82%</td>
<td>16%</td>
<td>2%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Our company is characterized by high degree of philanthropic responsibility.</td>
<td>77%</td>
<td>20%</td>
<td>3%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Author’s calculations

Research shows that 85% of respondents fully agree with the claim that their company is socially responsible. As far as Carroll’s CSR pyramid, 84% of respondents fully agree that their company has 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).

Respondents also provided answers about the importance of different stakeholders in their CSR activities. Results show that highest level of agreement regarding the significance of a particular stakeholder is shown for suppliers (85%). They are followed by customers (84%) and government (83%). After them, respondents placed owners/shareholders of the company (82%).
With the purpose of identification of differences among respondents’ answers in relation to attitudes towards company’s social responsibility and depending on social-demographic characteristics, t-test was used to compare mean values of dependent variable for two groups of respondents and one-way ANOVA was used to compare mean values of dependent variables for several groups. The level of significance (p=0.5) was used for both cases. If obtained values are lower than the level of significance the null hypothesis will be rejected meaning that there are no significant differences among the average values of dependent variables of the observed groups.

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. Likert scale was used to measure respondents’ perceptions of company’s social responsibility. Respondents were obliged to answer on 12 questions.

Table 2

<table>
<thead>
<tr>
<th>Question</th>
<th>Gender</th>
<th>Marital status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social responsibility</td>
<td>0.940</td>
<td>0.855</td>
</tr>
<tr>
<td>Economic responsibility</td>
<td>0.365</td>
<td>1.000</td>
</tr>
<tr>
<td>Legal responsibility</td>
<td>0.600</td>
<td>0.793</td>
</tr>
<tr>
<td>Ethical responsibility</td>
<td>0.353</td>
<td>0.659</td>
</tr>
<tr>
<td>Philanthropic responsibility</td>
<td>0.386</td>
<td>0.237</td>
</tr>
<tr>
<td>Responsibility towards the owner/shareholders</td>
<td>0.547</td>
<td>0.045</td>
</tr>
<tr>
<td>Responsibility towards the employees</td>
<td>0.034</td>
<td>0.148</td>
</tr>
<tr>
<td>Responsibility towards the consumers</td>
<td>0.270</td>
<td>0.806</td>
</tr>
<tr>
<td>Responsibility towards the suppliers</td>
<td>0.644</td>
<td>0.103</td>
</tr>
<tr>
<td>Responsibility towards the government</td>
<td>0.723</td>
<td>0.146</td>
</tr>
<tr>
<td>Responsibility towards the community</td>
<td>0.711</td>
<td>0.047</td>
</tr>
<tr>
<td>Responsibility towards the environment</td>
<td>0.755</td>
<td>0.320</td>
</tr>
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</table>

Source: Author’s calculations

Statistical significant difference was found only for mean values of male and female answers related to social responsibility towards the employees, while the statistical significant difference between mean values of married and unmarried respondents’ answers was found only for the question related to social responsibility towards owner/shareholders and the wider (general) community.

One-way ANOVA test was used to compare mean values of answers among different groups of respondents. The following social-demographic characteristics were observed: size of the company, respondents’ age, service increment, professional qualification, characteristics of jobs, average salary, and position. Obtained results showed that most answers had no statistical significant differences among the observed groups. In reference to answers with
statistically different mean values it is not possible to define specific and general conclusions.

5. CONCLUSION

CSR is a global trend that has been developing for a couple of decades. This trend also affected companies in Bosnia and Herzegovina. The paper presented the historical development of the concept of CSR, and showed that different authors had different visions of CSR. Regarding the development of CSR in Bosnia and Herzegovina, it can be concluded that this area is still relatively underdeveloped in relation to the practices of developed countries. Research results confirmed the stated hypothesis that the companies in Bosnia and Herzegovina follow hierarchy of social responsibility presented by Carroll’s pyramid of social responsibility. The highest percentage of agreement was for statements regarding company’s economic responsibility (business, making profit, fulfilling customers’ needs). The following percentage of agreement was for the statements related to company’s legal, ethical and philanthropic responsibility. Regarding the key stakeholders of CSR activities, companies in Bosnia and Herzegovina, state that they are primarily responsible for suppliers, then consumers, government bodies and owners.

The analysis of the influence of sociodemographic characteristics and job characteristics on attitudes about CSR showed that mainly there is no statistically significant difference in the responses of different groups of respondents to the largest number of questions asked, so it can be concluded that different sociodemographic characteristics and job characteristics do not generally affect attitudes about CSR. According to the presented results, the following recommendations can be made for companies, government, non-governmental organizations and researchers in Bosnia and Herzegovina:

Companies should work more on switching to higher categories of social responsibility, such as ethical and philanthropic responsibility. Economic responsibility is the core responsibility of companies in Bosnia and Herzegovina, but in order to keep up with current world trends, it is necessary to work on enhancing other categories of CSR.

Government and NGO should continue with campaigns promoting socially responsible practices. Long-term goal is to promote and develop a socially responsible business culture in Bosnia and Herzegovina.

There should be more research done about the perception of CSR according to the sociodemographic and job characteristics. This would explain some results presented in this paper.

Finally, it is important to note that this paper tries to provide a basic insight into the CSR of companies in Bosnia and Herzegovina. Consequently, it should be viewed as the foundation for future research in this area.
REFERENCES


IDENTITY AS A FACTOR OF CONFLICT BEHAVIOR IN ORGANIZATIONS

Original scientific paper
UDK:159.923-048.9:65.01
JEL classification: M12, M54

Abstract
The report addresses the issue of conflict management in business organizations. Conflicts accompany the business at all stages of its development. They are a way of overcoming hindering the development of contradictions in organizational, managerial, and interpersonal levels to reach a new level of relations. At the same time, the negative consequences of conflicts can lead to large losses of the organization’s resources, especially if the conflict involves the people who make up the professional core of the organization. Our study examined personal factors of conflict behavior of employees in a business organization according with business psychology approach (S, Benton). Special attention is paid to the professionals, people with a high level of professional identity. They have greater engagement, productivity in the organization. Theoretical basis: theory: an approach to professional identity (E. P. Ermolaeva), the author’s model of social identity (N.L. Ivanova), social identity theory (H. Tajfel, J.C. Turner), model of conflict behavior(T. Kilman), and model of conflict behavior (N.I. Leonov). The results showed that employees who have actualized professional identity in a conflict situation tend to choose the strategy of competition and cooperation. They almost do not resort to avoidance and adaptation. At the same time, employees with basic and complex identities choosing strategies of behavior in conflict: compromise and collaboration. Professionals show trends of defending
its position, a stiffer behavior in the conflict. We think that these results can be useful for business management, especially organizations that are involved in high-level professionals. The results allow us to see new aspects in conflict between employees, develop training programs and staff development, and improve internal communication. The data obtained can be considered as a pilot to build new hypotheses and further research on a broader sample and with the use of experimental procedures.

Keywords: professional identity, conflict behavior, conflict management, business psychology

1. INTRODUCTION

The issue of conflicts and conflict behavior of the person becomes more and more relevant in different aspects. First of all, it is connected with the continuing and even increasing conflicts between countries, peoples, ethnic groups, which are clearly observed recently in some regions of the world. In addition, it is associated with a competitive relationship between organizations. Conflicts are an inevitable way of resolving contradictions in any organization. For today’s organizations is characterized by a wide variety of conflicts caused by different reasons, they become involved as separate individuals, and groups, driven by different interests and needs that conflict forms the vast space. And naturally this actualizes the issue of studying conflicts and their causes, resolution and management (Sherbakov, 2017).

The constructive side of a conflict is the ability to overcome hindering the development of contradictions in organizational, managerial, and interpersonal levels to reach a new level of relations. At the same time can take place and the negative consequences of the conflict, manifested in the destruction of well-established relationships, groups, values etc. furthermore, the conflict has economic consequences. For example, the cost of time for the resolution of conflicts, deterioration of health managers and staff, the leakage of sensitive information etc. Business conflicts can jeopardize economic and trade relationship of the partners, to promote the outflow of capital, the very existence of the business. It is important to understand that the development of the business scope of conflict is also relevant and in demand, because conflict resolution takes a lot of time working, which leads to huge financial losses.

In spite of the large number of research in this area there are many open issues related to understanding the conflict behavior in the organization. It is important to search new approaches to understanding the causes of conflict behavior and conflict resolution. The problem of conflict resolution is the important issue in business psychology research and practice (Benton, 2016).

In our work, we investigate this problem from business psychology approach, focused on causes of conflict of human behavior in business organizations.
1.1. Model and Data

A modern trend of study of conflicts is the search for interdisciplinary approaches to understanding the causes and manifestations of conflict behavior in an organization, such as interdisciplinary business psychology approach (Benton, 2016). This approach combines the psychological and managerial basics. Psychological aspects are concerned with the nature of conflict behavior and factors of conflict resolution. Conflict is considered as a lack of agreement between two or more parties, individuals or groups, the clash of their opposing interests (Antsupov, Shipilov, 2000; Grishina, 2008). Managerial approach is focused on conflict resolution and conflict management in an organization: on politics as cases give rise to conflict of employee and group of employees (George, Jones, 2007), capabilities of successful organization in the conflict management mechanism for conflict resolution and improving performance (Hart, 2000) etc. That is why the business psychology pay attention on psychological mechanisms and factors of conflict and its importance for the conflict management.

What is the psychological nature and factors of conflict? N. Grishina write that the most important moment in the development of conflict behavior is the awareness or perception of a situation as a conflict. At the time when the participant of the conflict recognizes the situation as a conflict, he defines the strategy of behavior in conflict and eliminates those behaviors that do not correspond to this situation (Grishina, 2008). Other researches emphasize that personal factors of conflict behavior have a specific influence on the different stages of the flow conflict (Leonov, 2005, Platonov, 2009, etc.). That is why development of a typology of human behavior in a conflict situation helps to effectively solve problems of management, training, personnel development in organizations (Pugachev, 2002).

Our work develops a new approach to understanding the nature of the conflict of individual behavior, based on studying the characteristics of self-determination in a conflict situation and identifying the role of social identity in conflict behavior (Ivanova, 2015). Treatment to this problem, in our opinion, will help to advance the understanding of the psychological nature of conflict as a result of deep processes in personality as self-determination. In the same time, it will be useful for development of new methods of conflict management in organization.

Self-determination is seen as a conscious act of identifying and approval of their own positions in distressed situations (Petrovsky, Yaroshevsky, 1990). At the same time, this is a conscious process of analyzing, making, testing not only their own positions but also of the ideas about self in problem situations.

In the result of self-determination people make sense of their lives and identity (Erikson, 1996). Because every conflict situation is problematic, it is a factor for the development of the internal activity of participants of the conflict, aimed at identifying and approval of their positions. This activity leads to subjective interpretation of the conflict situation, the choice of strategy. At
the same time, self-determination and acts as an internal activity, this gives certainty of the personality and through which are refracted external influences (Rubinstein, 2006). Therefore, conflict human behavior is determined not only by his personality characteristics, but also subjective interpretation of the situation of interaction that has developed in the organization.

Assessment of conflict situations and their place in it depends on the status and social roles of the employee in the organization, his position among the parties to the conflict, a sense of responsibility for the social and economic consequences of the conflict. All this allows saying that the emergence and development of the conflict is accompanied by a process of self-determination in relation to the characteristics of social interaction. A person determines their status and positions among the participants of the conflict on the basis of established identity. Studies have shown that the search of his own community, the subsequent division into friends and foes, the need for identity in a conflict situation can come to the fore (Brewer, Schneider, 1990). The group will, for example, to join in the fight for new resources, tend to occupy a different position in society, to subjugate the others, and etc. In this regard, there are many questions about the conditions that lead to increased needs for identity and subsequent conflict.

According to the theory of social identity group membership is supported by a system of intra-group and intergroup attitudes and actions, therefore, social identity may be a factor contributing to intergroup discrimination and intergroup conflicts (Taifel, 1982, Tajfel, Turner, 1986). In this approach considered as the most important psychological structure, through which is refracted the perception of the social world and following behavior (Augoustinos, Walker, 2012.).

A promising development of this approach is the study of the structure of social identity and the subsequent analysis of the role of the various components of this structure in intergroup behavior (Roccas S., Brewer, 2003, Weinreich, Sanderson, 2003.).

In our approach, we consider in the structure of social identity cognitive, motivational and value component, which creates identity types (Ivanova, 2004):

a) “basic”, narrowly localized, primarily due to the situation given to man from birth, which is associated with the motivation of self-defense and the desire to strengthen its position at the level of national, regional and family unity;

a) “individual reflexive”, which is manifested in the motivation of self-esteem and focus on mastering the demands of culture both narrow and broader community;

a) “professional”, which is manifested in the motivation of self-realization and the desire to expand the subjective space, in the analysis of changes taking place in society.

According with this model there are at least two different types
of identity, which are relevant for understanding of professional activity of personnel in organization: basic and professional.

Important question is: How people with different type of identity will behave in conflict situation? In business, there are many professional people, which corrected by the recruiting and professional training system in organization. E. Ermolaeva showed that people with higher level of professional identity has expressed attitudes to efficiency, organizational development and innovations. On the contrary, people without professional identity have the attitudes to work in a slipshod manner, stagnation, and detachment from organizational problems (Ermoleva, 2004). Given this approach, we can assume that the behavior in the conflict of people with different types of identity will vary.

To describe the behavior of people in a conflict situation, we used the known model of conflict behavior of Thomas-Kilman. According with this model there are five types (strategies) of conflict resolution: competition, collaboration, compromise, avoidance and adaptation (Kilmann, Thomas, 1977). This model based on the concept of defining motivation of a leader who is focused on solving its own tasks, such as manufacturing, or its employees. The strategy of this model was classified according to two criteria of management behavior in the conflict: the desire to take into account the interests of employees (cooperatives) and the desire to defend their point of view (assertiveness). People don’t use the same strategy in all conflict situations. There is one dominant strategy that the person uses most frequently in the resolution of conflict situations. The choice of a particular strategy depends on various factors.

We assume that the actualized type of identity is a cognitive basis for the understanding the specific of the conflict situation and choosing a certain strategy of behavior in conflict. In other words, in conflict situation people choose the strategy of behavior in accordance with its type identity, actualized at the time of the conflict. In addition, conflict behavior can depend on the roles of employee in the organization and his place in the conflict situation.

Our suggestion is that people with higher professional identity will chose strategy of co-operation compare with strategy of confrontation in conflict situations.

1.1.1. Model and Data

The aim of the empirical study was to identify characteristics of conflict behavior of people with different types of identity. We proceeded from the general assumption that conflict behavior of individuals related to their social identity. But in business organizations there are other manifestations of conflict behavior by the reasons of status-role and competitive relations. That is why it is important to compare conflict behavior people in different samples. The general sample of our research (N=258) included: simple probability sample (N=179), sample of personnel in business organizations (N=79).
The study was conducted in two stages. The first stage identified the relationship between type of identity and strategy in conflict behavior (simple probability sample). The next stage was studied conflict strategies of personnel with different types of identity (sample of personnel in business organizations).

Methods:

For the identification strategy of behavior in conflict:

The questionnaire of K. Thomas and R. Killman in adaptation of N.Crushina (Minaeva, 2007). The questionnaire consists of 30 pairs of statements in which the participant is encouraged to choose the most appropriate style of behavior. Positivs the number of points on each of the five strategies of behavior in conflict (0-12). At the maximum amount is determined by the dominant strategy of the subject.

For the identification of identity:

Test the “Twenty-statements” by M. Kuhn and T. McPartland (adaptation Ivanova, Rumyantsev, 2009) to identify key cognitive components of identity. Subjects had 20 times to answer the question “Who am I?” Processing responses includes quantitative and qualitative analysis. On the basis of the content analysis is counting the number of responses by categories (points): reflexive, family, local, gender, status, civil, ethnic, and professional. Through a content analysis was conducted by counting the words in each category.

The Mast test (A. Ellis). The method proposed by A. Ellis and tested by P. N. Ivanov and E. F. Kolobova used to identify value-motivational characteristics of the individual (Ivanova, 2004). The subject is proposed to continue at six times the wording of the phrases: “I must...”; “Awful if...”; “I can’t stand...”. Counted the number of respondents’ answers to the following leading themes: professional growth; concern about health; communication; material well-being, comfort; maintaining moral principles; the state of the environment; public benefits; family; autonomy. Through a content analysis was conducted by counting the answers in each themes.

Was conducted correlation analysis of the obtained data as well as frequency analysis of the strategies of behavior in conflict, in individuals with certain indicators of identity that are most sensitive to the factors of social interaction. In current research we identified following identity types: basic (family, local, ethnic, gender, cultural, reflexive), mixed, professional (professional and social role, development, competence). Respondents were distributed according to these groups on the relative severity of actualized identity.

Expert analysis. Type of identity was determined by the coordination of opinions of experts (professional psychologists with experience in this topic). Agreed characteristics allowed determining the basic or professional type of identity. The discrepancy between the results of methods qualified as a mixed identity.
2. FORMAT GUIDELINES

Strategies of conflict behavior of people with different types of identity (on general sample)

Correlation analysis of the severity indicators of the identity and preferences of strategies of conflict behavior revealed no statistically significant Association between the variables. Frequency analysis showed that individuals with different types of actualized identity chose different strategies in conflict situations (table 1).

<table>
<thead>
<tr>
<th>Identity/ Strategies</th>
<th>Competition</th>
<th>Cooperation</th>
<th>Compromise</th>
<th>Avoidance</th>
<th>Adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic (N=49)</td>
<td>6,7</td>
<td>4,5</td>
<td>5,6</td>
<td>6,1</td>
<td>4,5</td>
</tr>
<tr>
<td>Mixed (N=71)</td>
<td>6,7</td>
<td>14</td>
<td>12,3</td>
<td>3,9</td>
<td>2,7</td>
</tr>
<tr>
<td>Professional (N=59)</td>
<td>7,8</td>
<td>12,8</td>
<td>6,7</td>
<td>3,9</td>
<td>1,8</td>
</tr>
</tbody>
</table>

The data obtained on the general sample show that a statistically significant correlation between the studied parameters was not detected. But we can say about tendency of greater preference to the strategy of cooperation and compromise among persons with professional type of identity. People with basic identity have slightly higher performance of strategies competition and avoidance.

Strategies of conflict behavior of personnel in the organization

The following series of studies was conducted on a sample of professionals working in the organization on different positions (N=81). This series included: analysis conflict behavior, types of identity, distribution of types of identity and strategies of behavior in conflict. Differences in conflict behavior of people in organizations with different types of identity are presented below (table 2).

<table>
<thead>
<tr>
<th>Identity/ Strategies</th>
<th>Competition</th>
<th>Cooperation</th>
<th>Compromise</th>
<th>Avoidance</th>
<th>Adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic (N=24)</td>
<td>1,3</td>
<td>7,5</td>
<td>13,9</td>
<td>3,8</td>
<td>3,8</td>
</tr>
<tr>
<td>Mixed (N=26)</td>
<td>3,8</td>
<td>7,5</td>
<td>11,4</td>
<td>5,1</td>
<td>5,1</td>
</tr>
<tr>
<td>Professional (N=29)</td>
<td>16,4</td>
<td>12,7</td>
<td>5,1</td>
<td>1,3</td>
<td>1,3</td>
</tr>
</tbody>
</table>

From these data we can say that there is similarity in conflict behavior of people with basic and mixed type of identity. They dominated strategies are: compromise and cooperation. Personnel with professional type of identity have
higher performance of competition and collaboration strategies. Among this people less percent of those who chose strategies of avoidance and adaptation in conflict situation.

This study allows saying, that there is an association of a choice of strategy of conflict behavior and updated the type of social identity. In particular, personnel with basic and complex identities the dominant strategies of conflict behavior are: compromise and cooperation. People with a professional identity are the most frequently chosen strategy of competition and cooperation. They almost do not resort to avoidance and adaptation.

This suggests that people with professional identity in organizations aimed at the achievement of their goals, thus to the detriment of the other party. Probably they more focused on victory is required if the person with power, to strive to restore order for the greater good. The predominance of the strategy of competition can show that they involved in the struggle for resources, development and competitive advantage.

We compared the strategies of behavior in conflict, persons in a pronounced professional identity for the total sample and the sample of employees of organizations. Results show big differences in 2 samples (figure 1).

![Figure 1 Strategies of conflict behavior of people with professional identity type in two samples](image)

- **Blue Colom** – general sample (N=179)
- **Red Colom** – sample of personnel in business organization (N=79)

Results show that the major differences concern the strategy of competition. Personnel with professional identity demonstrate much higher level of competition strategy compare with general sample. We assume that it can be with the characteristics of the sample. Sampling personnel were younger. It is also possible that it shows features of a method of identifying the strategy which is in the nature of a situation. But at the same time, the results raise important questions: Why in the total sample of people with a professional identity,
there is a trend of preference of strategy of cooperation and compromise, and organization of people with a professional identity for these strategies added to the rivalry? Maybe the organizational status and role of a person affect his behavior in the conflict?

3. CONCLUSIONS

We emphasize again that the research was pilot in nature. But the results of this study maybe useful development of approach to the problem of conflict behavior and show the importance of social cognition, self-identity for understanding of conflict behavior. Its show that the choice of the type of behavior in the conflict can be associated with a situation in which there are people. On the its show there is the difference in conflict behavior of personnel with different types of identity. We also observed that within the organizational context of people with a professional identity, demonstrate a high level strategy competition and cooperation. This is maybe important for the conflict management and for the human resource management as well.

We think that these results allow a new understanding conflict interaction and open new research opportunities in the field of conflict resolution and social identity. Identity and social position have a significant impact on a person’s reactions in a conflict situation.

The results allow us to say that the analysis of conflict to consider the stage of self-determination. A party to the conflict perceives the conflict situation from the position which he has formed ideas about itself, its social and professional roles and adequate interaction. Therefore, the analysis of the identity of the parties to the conflict can be an important resource for managing conflicts in the organization. Because identity is formed in the course inform and interact, new opportunities for the development of the corporate culture of the organization.

We emphasize again that the developed approach allows us to outline an empirical research program aimed at identifying characteristics of conflict behavior in the organization in persons with different types of identity. This is important for anticipation of the behavior of the employees of the organization in conflict situations. In the same time they can be considered as pilot for the construction of new hypotheses and further research on a broader sample and with the use of experimental procedures.

REFERENCES

*Book with an author*


Chaper in an edit book


*Journal paper*


*Internet resource*

THE ASSESSMENT OF CORPORATE SOCIAL PERFORMANCE EFFECTIVENESS: RUSSIAN CASE

Abstract

The research is devoted to a problem of assessment the effectiveness of social investments and Corporate Social Performance (CSP). We offer the original methodological approach to assess the effectiveness of CSP and social investments based on the conducted analysis. Qualitative and quantitative methods were used in the research. In our approach the effectiveness combines: the result (effect) of actions depend on goals that were set, comparison of the result and recourses invested (economy), comparison of goal setting and problems, including social problems, that can be solved (advisability). Moreover the approach considers the importance of both results for the subject and for the object of social investments (for business and for society). We focus on measurement not just social or economic effectiveness but social-economic performance. The methodological approach has been approved in the course of research included more than forty Russian companies. Approbation of the methodological approach proved the correlations between social investments costs and financial and reputation performance indicators. The offered methodological approach allows companies to realize self-assessment of CSP effectiveness, to highlight the priority departments and indicators of social investments, to improve corporate social strategy, to be prepared for Public Ratings / Contests on CSP. In addition, this methodological approach can be used for internal assessment of social...
investments effectiveness that can improve planning of rational social investments. The presented methodological approach of assessment of CSP effectiveness opens an opportunity to compare the effectiveness of CSP of different companies of a region or industry.

Keywords: corporate social performance, social investments, CSR assessment indicators

1. INTRODUCTION

Corporate social performance (CSP) is an activity that is focused on achievement of social welfare, environmental protection, care of employees, and other invested parties: consumers, suppliers, shareholders, investors, community groups, government etc., outside legal and economic commitments of the company (Holme and Watts, 2000). CSP is puzzled from certain internal and external social investments (socially responsible investments) in different spheres. So, internal and external accountability can be distinguished within CSP.

Internal social investments are limited by a company’s space and is usually directed to its employees as well as the development of corporate culture. It assumes creation of flexible control structure of system interaction within an organization. This structure is based on records of the social needs of employees and is built in accordance with the social strategy of an enterprise. The adoption and adherence to social obligations, norms and values of both managers and employees are also related to internal CSP. External social investments focus the company on local communities and the development of the territory in which it conducts its business, also it includes ecological responsibility. This responsibility goes to the society and the external contact groups (consumers, investors, shareholders, government, community organizations, and the media).

The world practice demonstrates the possibility of the existence of different models of CSP. The American model assumes a minimal governmental involvement and gives maxim freedom to other members of the social processes. Companies are free to determine the direction and the size of the social investments as the government only encourages the most socially important directions through the mechanism of tax regulation. A fundamentally different approach has developed in continental Europe: the government implements the most significant social projects, which are funded by extremely low tax rates. The UK model is based on a synthesis of elements of the American and European models. The Japanese model of CSP focuses on the formation of social cohesion at the company level and business cohesion at the production team level.

The Russian approach to CSP has serious specificity, on the one hand, it depends on the influence of the government regulation experience of the social sphere as part of the administrative-command system and, on the other hand, it follows the spontaneous market practice of the 1990-s. In the West, where civil society has a real impact on business arrangements, the main driving force of
CSP is nonprofit organizations that shape public opinion.

The absence of a strong civil society in many ways complicates the process of CSP development in Russia. This leads to important differences in the strategies of constructing the interaction with different categories of shareholders. Companies pay more attention to work with categories of consumers, non-profit organizations and local communities in Western models of CSP. In contrast, Russian companies are more focused on the inner circle of shareholders: employees, owners and local authorities.

2. CSP POSITIONAL BENEFIT

Corporate Social Performance, on the one hand, allows the company to build a constructive dialogue with various groups of society and, on the other hand, it is an effective tool of self-development of the company. CSP cannot be called altruism. The companies reduce profits by investing into social programs, but in the long run they create a favorable social environment that builds a base to receive stable profits in the future.

Positive effects of social investments, that are the most frequently noted in the study, include: reputation; the investment attractiveness of the company; increasing the possibility of new job openings and retaining highly skilled employees (Bagnoli and Watts, 2003; Orlitzky and Benjamin, 2001) the improvement of relationships between workers; creation and maintenance of the brand (Heal, 2005). In addition, the implementation of CSP allows the company to obtain the following reputational and economic benefits:

- the attraction of media attention, which provides additional advertising support to the business at no cost;
- an increase in confidence and the creation of positive opinions among the targeted audience of customers, governmental agencies and the general public;
- an increase of loyalty in existing customers as well as the attraction of new customers;
- a competitive advantage in the market in comparison to other companies;
- the expansion of possibilities for more favorable contracts with partners and suppliers;
- the acquisition of better terms in the negotiation process with authorities;
- the strengthening of personal contacts;
- a reduction in the cost of transactions by reducing the administrative resistance to conclude contracts;
− an increase in the competence and professionalism of employees;
− the growth of labor productivity;
− a reduction in the cost of recruitment and management of staff;
− the growth of economic indicators such as income, financial stability, shareholders’ capital, and the sustainable development of business as a whole.

A number of Western researchers argue that social business activity and rationally organized and socially responsible investments may provide much more communication and may have a greater economic impact than traditional methods like increasing the effectiveness of advertisement, sale promotions, etc. (Weiser and Zadek, 2000).

3. TECHNIQUE OF ASSESSMENT OF CSP EFFECTIVENESS

Authors of the article offer original methodological approach to assess the effectiveness of CSP. Qualitative and quantitative methods were used in the research.

Effectiveness here combines: the result (effect) of actions depend on goals that were set, comparison of the result and resources invested (economy), comparison of goal setting and problems, including social problems, that can be solved (advisability). So, the approach considers the importance of both results for the subject and results for the object of social investments (for business and for society). We focus on measurement not just social or economic effectiveness but social-economic performance (Drucker, 2002; Mangeim, 1943; Simon, 1959).

Technique of assessment of CSP effectiveness bases on analyzing of the dynamic of CSP indicators (certain social investments indicators) and performance indicators, both material and immaterial. Points system was used for the distribution of the importance of the indicators that helped to transfer qualitative data into quantitative data. An approach conceders comparison of the preferable results (basic points) with actual results (actual points), depend on the dynamic of indicators before and after a time period (a year, for example). So, dynamic (%) = basic points * 100% = actual points.

To determine the significance of the chosen indicators (basic points), the authors did a survey of three groups of stakeholders and shareholders opinion and counted the mean in points. Opinion of business owners and social expectations of its stakeholders, also opinion of experts in CSP and external factors (social, political, social-economic and cultural environment) formed the significance of these indicators in points, in particular, qualitative analyses of documents and experts interview (importance for society) (group 1) and interviewing of business owners (group 2), employers and main partners (importance for business) (group 3). The mean between points of these groups can give the optimal basic points than can be used for the assessment. It provides an opportunity to overcome the limitations
of controversial/subjective results of distribution of indicators’ significance that we face in most approaches presented in the article (Chen and Delmas, 2011; Hillman and Keim, 2001; Ruf et al, 1998; Turker, 2009; Waddock and Graves, 1997).

Using this approach for self-assessment of CSP inside the company 5-points system can be chosen as difference between points (opinion of respondents) shouldn’t be very big. If the approach is used for the Public Rating or Contest of business social practices/social investments considering comparison of different companies on certain nominations (certain groups of indicators) or as a whole, significance of indicators is determined by experts (this article presents the results of the Technique approbation based on the expert distribution of points, in particular 50-points system for the sum of indicators in each nomination). So, the system is very flexible and can be improved with the years of approbation.

The basic tool of the Technique of assessment of CSP effectiveness can be used for self-assessment of companies and for the Public Ratings and Contests. Public Ratings and Contests should have some important limitations for comparison of companies like quantity of years in the market, size and market cost of companies – the difference between companies shouldn’t be very significant.

The assessment process of CSP effectiveness consists of five steps:

1. Selecting main nominations with CSP indicators. Due to analyses of international social reports standards, research on CSP, modern techniques of assessment of CSP effectiveness, authors determined three main nominations: «Care» (internal development programs), «Fairness» (fair business practice, quality of goods and service, special events with competitors and partners), «Complicity» (external social investments in environment, culture, healthcare, art …). And one performance nomination: «Success» (potential material and immaterial benefits for business, including marketing indicators like publicity and brand recognition).

   Quantity of indicators in nominations can change. The main idea is the importance of theses indicators for company’s management and for the CSP goals. There are some requirements for indicators: sufficiency for the nomination, qualitatative data, possibility to check/control the data. Thus each nomination includes groups of indicators combined into departments. Each indicator has the unit of measure. An example of indicators used to assess the nomination «Fairness» is presented in the table 1.

2. Determination the significance of all indicators, including performance indicators in «Success» nomination (basic points) due to the offered Technique described above.

3. Determination of the indicators dynamics during certain period (for example, one year).

4. Counting quantity of actual points of all indicators (dynamics (%) / 100% * basic points). The sum of actual points describes the effectiveness of CSP of the company as a whole and in different nominations (in comparison with the prior period (a year ago, for example) if it is self-assessment
CORPORATE SOCIAL RESPONSIBILITY

or in comparison with other companies if it is The Public Rating or Contest on social activity of business). Assessment of indicators considers absence or presence of indicators, increase or decrease of the indicator, or if it is a negative indicator (like number of lawsuits), actual points can be negative.

5. Results. Preparing a report and recommendations. In case of self-assessment the company will improve its corporate social strategy. If such a research is made just once, based on the described Technique, the results can be subjective, controversial in some case. But if it becomes an annual practice, the company gets an objective tool for the assessment of CSP effectiveness.

4. ANALYSIS

45 Russian companies from The ESISP program (Tulchinsky et al., 2008) present the result of approbation of the Technique of assessment of CSP effectiveness. Table 2 presents a selection of these spreadsheets. Mostly SME companies were sorted for the research in order to illustrate all the possibilities for developing medium business to participate in Public Ratings/Contests in this sphere. Companies (SME) were from different regions of the country, with different characteristics of industries’ activity. Results of the research show that the Technique can be used for the international Rating/Contest, considering limitations just in the size and market cost of companies, quantity of years in the market.

The sorted companies during the analyzed period didn’t realize significant changes related to main business practice like new equipment purchases, entering new markets, significant staff reduction or staff increasing. All these changes can provoke financial results that are not connected with the subject of the research. Condition of admission of companies also was the absence of tax claims.

On the basis of collected data, authors made descriptive, cluster and correlation analyses for defining common standard for companies (standard/high/low results). Mean, mode, median, standard deviation presented in Table 3. Median is the most objective indicator for defining the common standard. Also for the statistics minimum and maximum are important. For example, to declare a condition to participate in the Rating (minimum sum of points).

Due to cluster analyses, all the companies were sorted in five clusters. The first cluster presents the winners, in particular three companies with best results as a whole (sum of all nominations). In fact, these companies are also leaders in all nominations including «Success» nomination. That proves the dependence of effective social strategy with successful financial results and brand recognition.

The second cluster presents companies with results more than mean in «Success» nomination (performance indicators) and more than median in all other nominations. An important fact is that there were no cases with the opposite dependence («Success» results are more than median, results of other nominations are more than mean). That supports the condition of admission of companies
(no significant changes related to main business practice during the analyzed period). Companies with the results more than mean in the final rating (sum of all nominations) form the third cluster. Finally, 20 companies (from the sample of 45 companies) demonstrated good and best results.

Table 1

Nomination «Fairness»

<table>
<thead>
<tr>
<th>Department</th>
<th>Indicators</th>
<th>Values of Indicators</th>
<th>Significance in Points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name</td>
<td>Unit of Measure</td>
<td>Prior Period</td>
</tr>
<tr>
<td>Quality</td>
<td>Warranty repair of the total annual turnover</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Return</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Certificates of quality</td>
<td>quantity</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Competition winnings, awards</td>
<td>quantity</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Lawsuits</td>
<td>quantity</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Partners’ lawsuits</td>
<td>quantity</td>
<td>%</td>
</tr>
<tr>
<td>Partnership</td>
<td>Participation in programs of business development, business to business</td>
<td>$ *events</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Events with competitors, joint initiatives</td>
<td>$ *events</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Events with authorities joint initiative</td>
<td>$ *events</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Events with media, joint initiative</td>
<td>$ *events</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Events with NGO, joint initiative</td>
<td>$ *events</td>
<td>%</td>
</tr>
<tr>
<td>Total score of all departments</td>
<td>X,xx</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common data</td>
<td>The total amount of social investments in the category</td>
<td>$</td>
<td>X,xx</td>
</tr>
</tbody>
</table>

The forth cluster presented the results lower than median in all nominations. It concludes that these companies’ social strategy is ineffective and it needs to be analyzed carefully or these companies are just too young now and they just started to form their social strategy. Reasons can be different. But the last cluster presents ineffective corporate social strategy as these companies show high result in one of nomination (Care, Complicity or Fairness), in particular more then median and even closer to mean, but in other nominations including performance nomination (Success) the results are lower than median. It means that the investments are irrational and they do not benefit.
**Table 2**

### Results of assessment of Russian companies (SME)

<table>
<thead>
<tr>
<th>SME name</th>
<th>Sum of points</th>
<th>Sum of points in all nominations</th>
<th>Final rating points</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAON Sistema</td>
<td>123,046</td>
<td>99,935</td>
<td>35,000</td>
</tr>
<tr>
<td>BALKO</td>
<td>237,849</td>
<td>209,472</td>
<td>219,781</td>
</tr>
<tr>
<td>MISAR</td>
<td>149,794</td>
<td>152,988</td>
<td>387,894</td>
</tr>
<tr>
<td>Sovlaka batareia</td>
<td>121,773</td>
<td>74,648</td>
<td>85,7</td>
</tr>
<tr>
<td>Non-government partnership «Russian union system of the North, Siberia and the Far East native nationalities»</td>
<td>40,000</td>
<td>45,000</td>
<td>371,841</td>
</tr>
<tr>
<td>LUKOIL Nignevolsk nefteproduct</td>
<td>96,892</td>
<td>129,194</td>
<td>203,488</td>
</tr>
<tr>
<td>MALAVIT</td>
<td>58,649</td>
<td>45,000</td>
<td>64,750</td>
</tr>
<tr>
<td>VITA-B</td>
<td>97,5</td>
<td>105</td>
<td>135</td>
</tr>
<tr>
<td>RBU-1</td>
<td>960,355</td>
<td>188,877</td>
<td>283,003</td>
</tr>
<tr>
<td>TATNEFT</td>
<td>165,418</td>
<td>70</td>
<td>109</td>
</tr>
<tr>
<td>SKAT</td>
<td>182,762</td>
<td>100</td>
<td>180</td>
</tr>
<tr>
<td>MICRON</td>
<td>305,39</td>
<td>168,771</td>
<td>731</td>
</tr>
<tr>
<td>INTERMARKET</td>
<td>169,5</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Tupperware</td>
<td>113,152</td>
<td>134</td>
<td>150</td>
</tr>
<tr>
<td>INTERMAST</td>
<td>300,881</td>
<td>166,923</td>
<td>327</td>
</tr>
<tr>
<td>INSOlar-invest</td>
<td>179,176</td>
<td>174</td>
<td>240</td>
</tr>
<tr>
<td>TATNEFTEOTDACHA</td>
<td>135,552</td>
<td>45</td>
<td>239</td>
</tr>
<tr>
<td>Avto-Express</td>
<td>149,45</td>
<td>75</td>
<td>132</td>
</tr>
<tr>
<td>LI-MAR</td>
<td>198,64</td>
<td>101,069</td>
<td>161</td>
</tr>
<tr>
<td>Nache-Delo</td>
<td>195,441</td>
<td>66,221</td>
<td>124</td>
</tr>
<tr>
<td>SV-Lising</td>
<td>186,154</td>
<td>96,667</td>
<td>50</td>
</tr>
<tr>
<td>Teresa-Inter</td>
<td>80</td>
<td>100</td>
<td>60</td>
</tr>
<tr>
<td>Liga-Cross</td>
<td>67,5</td>
<td>45</td>
<td>234</td>
</tr>
<tr>
<td>SILUT</td>
<td>86,429</td>
<td>45</td>
<td>20</td>
</tr>
<tr>
<td>Centroelectromontage</td>
<td>242,965</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>LIKT</td>
<td>110,51</td>
<td>65</td>
<td>89</td>
</tr>
<tr>
<td>Sopping mall Valday</td>
<td>147,48</td>
<td>84,53</td>
<td>140</td>
</tr>
<tr>
<td>Shopping mall ASB</td>
<td>112</td>
<td>67,5</td>
<td>200</td>
</tr>
</tbody>
</table>

---

Comments: 1 place—red (best results), 2 place – green, 3 place – blue

What is curious, leaders in the final rating are almost the same as leaders in the «Care» nomination. This fact suggests that the priority sphere of social investments in Russia in recent years is connected with internal development, including development of human capital and care about employees.

Qualitative analyses of individual results of companies also illustrated positive dependence between indicators of social investments and certain performance indicators. In conclusion, all social investments should be rational; there is no sense in investments that do not have positive effect on financial and image characteristics of business, at least in perspective. Thus, it is very useful for a company to make self-assessment to improve corporate social strategy.

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1 Significance of indicators were distributed by experts due to the illustrated method (sum of basic points in each nomination - 50 points).
Table 3

<table>
<thead>
<tr>
<th>Nomination</th>
<th>Successes</th>
<th>Care</th>
<th>Fairness</th>
<th>Complicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>74,91336</td>
<td>153,25958</td>
<td>90,04503</td>
<td>155,26664</td>
</tr>
<tr>
<td>Median</td>
<td>61,00000</td>
<td>132,59700</td>
<td>75</td>
<td>132,667</td>
</tr>
<tr>
<td>Mode</td>
<td>20,000</td>
<td>40,000</td>
<td>45,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>62,172406</td>
<td>137,19418</td>
<td>46,962945</td>
<td>129,899573</td>
</tr>
<tr>
<td>Minimum</td>
<td>0</td>
<td>31,5</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>Maximum</td>
<td>279,339</td>
<td>960,355</td>
<td>209,472</td>
<td>731</td>
</tr>
</tbody>
</table>

5. CONCLUSION

This article provides the solution of the problem of assessment of CSP effectiveness. On the basis of the carried-out analysis of modern methodological approaches to solve this problem, authors offer the Technique of assessment of CSP effectiveness.

Approbation of the Technique proved the correlations between social investments costs and financial and reputation performance indicators. The offered Technique allows companies to realize self-assessment of CSP effectiveness, to highlight the priority departments and indicators of social investments, to improve corporate social strategy, to be prepared for Public Ratings/Contests on CSP. In addition, this Technique can be used for internal assessment of social investments effectiveness that can improve planning rational social investments in corporate culture and employee’s development.

The offered approach can be useful for organizing Public Ratings/Contests on CSP, including international Ratings/Contests as it considers criteria of international social reporting standards like Global Reporting Initiative (GRI-3), UN Global Compact, Account Ability (AA1000). Finally, the offered approach has practical value for managers, for CSR/social investments experts, for representatives and authorities and for the NGO, engaged in social development at corporate and regional levels.

REFERENCES


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CORPORATE SOCIAL RESPONSIBILITY (CSR) IN THEORY AND IN PRACTICE. SELECTED ISSUES

Preliminary communication  
UDK: 005.35  
JEL classification: M14, A13

Abstract
The increased interest in creating socially responsible business model results from various reasons. The most important ones include: recently frequently acceptable need to apply the so-called sustainable development concept, need for civil society development, increased clarity of business activity and its consequences, including elimination of corruption and unethical behaviour in business and implementation of good practices in relations with a wide group of stakeholders. The study aims at analysing selected issues related to CSR from the point of view of theoretical assumptions, as well as business practice, and presenting the importance of CSR concept from the point of view of social and economic stability.

Keywords: corporate social responsibility, economy, responsibility, social sphere, ethics

1. INTRODUCTION
At present, economic activity has been run in the world of popularized culture. It means that there are situations were decisions have to be taken and as a result conflicts occur between the manners of business people and the surrounding culture which covers and protects various moral values and sometimes promotes values which are not shared by business people. The past and present times document various conducts and choices of people related to business activity in a situation of conflict between the internal culture rooted in moral values and the external culture resulting from the compromise between different values imposing certain standard of conduct in management.
The economic activity requires making choices since it refers to using resources the access to which is frequently limited. In economy these resources are defined as scarce resources. In such situation, following the economic choices requires favourable social environment and protection of ownership, private security, guarantee for enforceability of agreements and liability for taken obligations.

The CSR concept recognized as the result of reflection on ethical values compared to economic activity is a social product. Historically speaking, the entrepreneurs, bankers and merchants regulated mutual conduct and obligations with the use of customs and ethos. Today, science has been analysing the said regulations, their adjustment to the current situations and development of grounds for explaining why the social, ethical and moral regulations are necessary. It is justified inasmuch as the contemporary economic world provides people with numerous complex decision-making situations. As part of competition, many instruments are applied to exclude economic competitors. Moreover, the sale of products is frequently accompanied by impulse to withhold crucial information. The relations between the employers, employees and stakeholders often involve some friction resulting from conflicting interests. There are also instances where the agreements often include legal loopholes, which lead to misuse and bankruptcy. Such pessimistic image of a managing man was previously observed and defined by W. Röpke (1994), who provided that markets frequently destroyed moral values; therefore the values must all the more be constantly supplemented from the outside. It involves organizing external support which would provide reason and guidelines for how to protect ourselves against unethical behaviour. The role should be assumed by the ethics of business responsibility the main goal of which is to combine various trends in moral philosophy, economy and other social sciences in a logical and coherent group providing obligations for business people. The success of this coherence determines the possibility to pass from CSR management to authentic responsibility. However, it requires comprehensive political grounds, in particular democratic grounds, and the need to intensify actions aiming at the return of the economists and business to social axiological grounds.

This study aims at analysing selected issues related to CSR from the point of view of theoretical assumptions, as well as business practice, and presenting the importance of CSR concept from the point of view of social and economic stability.

2. CSR CONCEPT. THEORETICAL ASPECT

At present, CSR has become the area of scientific research taken not only by the psychologists, moral philosophers, sociologists, and economists but also by the management specialists, winning the status of multi-level branch of science. The majority of works related to the issues concerning CSR concept provide analysis of the idea from the viewpoint of:
The concept of social responsibility has been developing by extending its scope of research compared to the historical information. It has also been the subject of continuous public debate.

The idea of CSR focuses mainly on building relations supporting all stakeholders participating in economic undertakings. Apart from building positive relations between the stakeholders, the concept includes formal and legal aspects and the protection of environment on a voluntary basis. In other words, the concept of corporate social responsibility involves, on the part of the enterprise, on focusing on the following elements: corporate governance, employee behaviourism, human rights, integrity in relations with clients, environmental protection, business reliability and social engagement. More specifically, at that time the enterprise could be recognized as one involved in social responsibility since it meets the following criteria: invests in human resources, cares for environmental protection, maintains legitimate and ethical relations with entrepreneurial environment and informs about taken actions.

The main objective of CSR concept is to protect social and economic life against economic relativism or even „market fundamentalism”, strengthen the sense of human dignity, moral and ethical principles, respect for the law, all forms of social integration and mutual trust among stakeholders taking care of the common good.

In numerous studies, especially in recent years, it is emphasized that CSR has become the concept introducing order into the social and economic life, in particular its ethical and cultural aspect, and providing the course and optimizing the economic thinking. However, relatively many experts on the issue emphasize the need to institutionalize and introduce process-based approach in the relations between business and society. Many of them have already tried to refer to those issues in a theoretical form. As a result, numerous studies have been carried out and many publications related to CSR aspects have been issued.

There are also many controversies regarding the CSR concept. So far, the concept has got more opponents than supporters. The supporters can see benefits arguing that:

- today many consumers identify themselves with pro-social and pro-environmental activities, therefore they will, first of all, purchase goods from socially responsible businesses (Bretyn, 2014, p. 72-73),
- implementation of CSR concepts into the enterprise encourages stakeholders to cooperate, since it provides them with more certainty that the cooperation will be stable and free from irregularities and fraud,
- employees are given more certainty that liberal principles in human
relations are going to be respected; namely the idea of tolerance but the one with rights and freedoms of other individuals,

- application of principles included in the CSR concept provides employees with stability of employment and encourages them to diligent work, which, in turn, provides the enterprise with possibility to acquire and keep the best employees,

- ethical, pro-social and pro-ecological behaviour affects greater efficiency and improvement in organizational culture,

- as a result of activities respecting the concept of CSR the trading brand becomes more distinguishable and respected.

Whereas the opponents, in particular businessmen, are convinced that the implementation of CSR concept will generate loses since:

- it refers to costs regarding the implementation of the concept, including e.g. changes in management and strategy, whereas such activities usually bring about expected results only in a long term perspective,

- expenses for CSR-related activities can ultimately be included in the price of sold goods and services, and the costs will be incurred by the consumers (Bretyn, 2013, p. 63-66),

- higher prices of offered goods, resulting from incurred costs of CSR concept implementation, will limit the competitiveness of enterprise,

- involvement in the CSR concept will hinder free, obligation-free management, resulting in the loss of some profit, whereas so far profit has been the most important goal of the company activity,

- freedom will be limited, especially since the assumptions of CSR concept stand in opposition to the statements and assumptions relative to the mainstream theory and the ideology of liberalism and neo-liberalism,

- the concept of corporate responsibility indicates the social and creative role of business entities, and obliges them to solve social issues, which may bring inconvenience, dilemmas and antinomia.

The opponents of CSR arguments indicate that the concept is contrary to the principles of market economy, referring to the Nobel Prize Winner Milton Friedman (1993, p. 127-128), claiming that economic entities should produce goods and render services effectively, but social problems shall be settled by the related people and governmental institutions.

In conclusion, while discussing CSR ideas it is worth remembering that when we refer to particular context of beliefs, connected to the discussed CSR issues, we need to discuss their particular form. When we discuss observations revealing that the concept fails to operate as expected, we need to remember that we are not discussing the theoretical model but the content of social experience which constitutes
3. IMPLEMENTATION OF CSR ASSUMPTIONS IN ECONOMIC PRACTICE

The usefulness of following the CSR concept not only by enterprises but also by the state in order to improve the competitiveness has already been presented in the works of: John Harry Dunning, Francis Fukuyama, Christopher Bartlett. Moreover, the leading international competitiveness rankings are aware of the role of CSR in building the competitive advantage by the enterprise, region and country. In recent years, we have also been observing the need, more often verbalized by the scientists, to increase the clarity of business activity, eliminate corruption and unethical behaviour in business and the use of good practices (Freeman, Velamuri & Moriarty, 2006; Loew & Clausen, 2010). Even though the implementation of CSR principles may help achieving those goals, the concept is not commonly applied. The events which occurred in the first decade of the 21st century clearly reflect the abovementioned opinion. In particular, the crisis which broke out at the turn of 2008 encouraged explicit opinions. It would be too simplified since it is difficult to indicate one or even more origins of conflict. However, we may assume that the system collapsed as a result of excessive complexity and consequently incomprehensibility of managing rules. Yet, the crisis revealed how severe consequences may result from failure to obey market rules and standards. It has been clearly emphasised by the institutional ethics representatives who claim that the market exists thanks to the standards which ensure actual competition and maintain the economic system which guarantees benefits for all interested parties. In fact, it turned out that not all of the entities on the market accepted those arguments. There are many examples to prove it, such as: Lehmann Brothers, WorldCom, Arthur Andersen and approx. 493 other banks and rating agencies which frequently contrary to the facts granted the highest rank. Also auditors and accountants (management accounting) neglected the ethical principles.

Whereas, John C. Bogl (2009, p. 139), particularly fiercely criticized the auditors who gradually switched to rendering very profitable consulting services to the clients whom they audited. As a result the independent and professional auditors following the generally accepted accounting principles turned into specific business „partners”, participating in the management of enterprises audited by them. The collapse of Arthur Andersen in 2003 and the preceding bankruptcy of the client of this consulting company – Enron, and then Lehman Brothers constitute examples which indicate consequences arising from such relations.

Another example of fraud resulting from failure to obey principles defined in the CSR concept, sometimes seemingly insignificant but conducted on a large scale, is manufactured information in mortgage loan applications and ignoring the procedures. In order to reveal irregularities and frequently concealed true intentions, in 2013 the British weekly magazine „The Economist” published an article on fines amounting to hundreds of millions of dollars which the Americans imposed on large British banks operating in the USA. It turned out that the fines were not imposed for causing the crisis but for money-laundering
for Cuba, Iran, Sudan and Myanmar. The magazine certainly referred to the formula “too big to fail” which constituted guarantee for large-scale business entities operating on the financial market for many years providing that in case of financial crisis the governments would come to their rescue.

Yet another example of activities contrary to CSR assumptions, including first of all the ethical assumptions, is the experiment conducted by the European Central Bank (ECB). At the turn of 2015, ECB conducted the simulation of crisis which involved performing balance sheet stress testing at the largest banks. The aim was, first of all, to verify whether the banks would remain solvent, if macro-economic environment rapidly deteriorated and the investors withdrew capital from the market. It was also verified whether the bank assets were really worth the amounts stated in the balance sheet. From among 130 banks, 25 failed the stress-tests, mainly the banks from southern Europe, e.g. the Greek Eurobank, the Italian Monte dei Paschi di Siena and the Portuguese BCP and the owner of the Polish Millenium bank. In Poland, who participated voluntarily in the simulation, the minimal shortage of capital at the end of 2013 was observed only by a branch of BNP Paribas and Getin Noble (Smoczyński, 2014, p. 6).

The most hypocritical in the above mentioned examples is that previously all of these economic entities emphasised that they greatly support the CSR concept and respect its assumptions. They all developed programs for the implementation of CSR concept, but they failed to follow them.

4. CSR IN POLAND. CASE STUDY

In recent years, we could observe the more often verbalized need to increase the clarity of business activity and its consequences, including mainly the elimination of corruption and unethical behaviour in business and the use of good practices (Bortz & Döring, 2003). Even though the implementation of corporate social responsibility concept may help achieving these goals, the concept is not commonly applied in Poland. The above mentioned opinion was confirmed by the results of studies. In 2014, pilot surveys were carried out, and as a result 850 questionnaires were received with 558 filled in correctly, which resulted in feedback amounting to 65.65%. Whereas, in 2016 more thorough studies were performed, and as a result 1269 questionnaires were received with 1089 filled in correctly, which resulted in feedback amounting to 86.22%. We need to add that the questionnaires covered every employee, i.e. not only the managers and owners but also other employees. The main objective of survey involved learning the level of knowledge on corporate social responsibility. The tables present: share of people employed in particular types of enterprises (table 1), structure of respondents holding particular position in enterprise (table 2), level of knowledge on the implementation and completion of the concept of corporate social responsibility by enterprises operating in Poland (table 3, 4).

1 Survey was conducted in December 2014 and 2016 in Poland by the Department of Economy of the Faculty of Management and Economics of Services, University of Szczecin.
Table 1
Share of people employed in particular types of enterprises in Poland in 2014 and 2016 in %

<table>
<thead>
<tr>
<th>Poland</th>
<th>Micro (1-9 people)</th>
<th>Small (10-49 people)</th>
<th>Medium (50-249 people)</th>
<th>Large (250 and more people)</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>24.01%</td>
<td>22.04%</td>
<td>24.73%</td>
<td>22.58%</td>
<td>6.63%</td>
</tr>
<tr>
<td>2016</td>
<td>14.14%</td>
<td>24.52%</td>
<td>21.67%</td>
<td>29.84%</td>
<td>9.83%</td>
</tr>
</tbody>
</table>

Source: own report under questionnaires carried out in 2014 and 2016 in Poland by the Department of Economy of the Faculty of Management and Economics of Services, University of Szczecin.

Table 2
Structure of respondents holding particular position in enterprise in Poland in %

<table>
<thead>
<tr>
<th>Position held</th>
<th>2014</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>13.44%</td>
<td>5.69%</td>
</tr>
<tr>
<td>Manager</td>
<td>27.24%</td>
<td>14.69%</td>
</tr>
<tr>
<td>Other*</td>
<td>58.96%</td>
<td>79.61%</td>
</tr>
<tr>
<td>No reply</td>
<td>0.36%</td>
<td>0%</td>
</tr>
</tbody>
</table>

* Lower-level employees who have no direct influence on defining and achieving the company’s goal.

Source: own report under questionnaires carried out in 2014 and 2016 in Poland by the Department of Economy of the Faculty of Management and Economics of Services, University of Szczecin.

Table 3
Structure of answers to question: Are you familiar with the CSR concept?

<table>
<thead>
<tr>
<th>Poland</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>35.48%</td>
<td>64.52%</td>
</tr>
<tr>
<td>2016</td>
<td>44.44%</td>
<td>55.56%</td>
</tr>
</tbody>
</table>

Source: own report under questionnaires carried out in 2014 and 2016 in Poland by the Department of Economy of the Faculty of Management and Economics of Services, University of Szczecin.

Table 4
Structure of answers to question: Does your place of employment follow the principles of corporate social responsibility (at least in some areas)?

<table>
<thead>
<tr>
<th>Poland</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>45.34%</td>
<td>19.35%</td>
<td>35.31%</td>
</tr>
<tr>
<td>2016</td>
<td>27.92%</td>
<td>19.46%</td>
<td>52.62%</td>
</tr>
</tbody>
</table>

Source: own report under questionnaires carried out in 2014 and 2016 in Poland by the Department of Economy of the Faculty of Management and Economics of Services, University of Szczecin.
The results of conducted research (table 3 and 4) indicate that it would be too optimistic and too hasty to think that corporate social responsibility is a standard in the Polish enterprises. The opinion has been confirmed by pilot studies conducted by Katarzyna Szelągowska-Rudzka (2016, p. 148) among selected organizations in Pomorskie Voivodeship. They indicate that the majority of organizations fail to fully implement the organized and systemic activities related to the concept of corporate social responsibility. Forty per cent (40%) of the respondents claim that their organization implements the strategy but these are mostly big enterprises (58%), the lowest level of implementation is observed in small enterprises (26%).

The presented results of research make us wonder why despite the discussion on benefits of corporate social responsibility conducted recently in Poland, the concept is still not really appreciated and often simply underestimated. And it does not involve purely theoretical sophistication, but the answer defining reasons for such behaviour. There are many reasons, but the most significant include the lack of understanding among the majority of Polish entrepreneurs for CSR assumptions and, first of all, the belief providing that following the principles of corporate social responsibility is economically unprofitable. It is even more two-faced as we could say, since according to Edyta Spodarczyk and Katarzyna Szelągowska-Rudzka (2015, p. 437), these enterprises are encouraged to participate actively in the said concept, by both the European Union following “Horizon 2020” strategy and local governments promoting the concept and including it in their regional development programs. Moreover, the enterprises are granted subsidies for developing CSR strategy. Another, equally important reason involves the lack of professional CSR structure, the structure aiming at education covering all levels affecting social awareness, namely from national organizations to economic entities.

However, infrastructure, especially one related to such sensitive issues as corporate social responsibility, including ethics and morality, will play its role only when not only enterprises but also the whole society believe that following the said principles is reasonable and really brings about positive effects. But solely good organizational solution is not sufficient, but also, or perhaps first of all, we need to prepare ground in human minds explaining to the society:

- Why is the concept so important?
- What are the values and meanings behind it?
- What kind of awareness generates such concept?
- Why is the concept an important competitive instrument on the international market? (Wolska, 2015, p. 589).

5. CONCLUSIONS

The CSR concept has been still undervalued by nearly all societies and authority representatives, despite the fact that it is a logical and practical result of the concept of human responsibility. Nevertheless, the CSR concept, though criticized,
seems to undergo rather slow but steady growth, despite significant conflict with the assumptions of the current trends in economy, namely liberal, neo-liberal and mainstream. The popularization of the concept requires, first of all, changes in the paradigm of economy, including confronting the theoretical models with practical reality without oversimplifying and primitivising the observation area. It is even more necessary since the absolutization of assumptions of the liberal, neo-liberal, and mainstream economy moved the economy away from the origins of philosophy and humanities, emphasizing the approach expressing inclination to more and more complex mathematical and econometric. It fails to encourage development of responsibility which is a much broader category than only lawful compliance with the laws which often contain flaws and gaps and as such, turn out to be insufficient for the harmonized development. However, it is not enough to issue decrees on responsibility since technocratic approach will fail to bring the expected result. Therefore, we need to create proper environment for the said concept, and, first of all, the social relations and institutions which develop the concept most effectively should enjoy privileged treatment.

The symptomatic quality of modern economy includes on the one hand, significant changes in management principles and technological progress, and on the other, unsustainable economic growth and increasing development inequalities on a global scale. The examples thereof include unemployment and large-scale poverty with wealth concentration at the same time, incorrect relations between the role of the state in particular countries and the power of transnational corporations. The list grows to include more threats to the natural environment and its sustainability, and numerous ills in economy, society and politics. Moreover, particularly dangerous are the conflicts resulting from differences in civilization and extreme diversification of the world. Despite many initiatives taken on a global scale, focused on reducing inequalities and degradation in economy, so far no country has been able to introduce satisfactory and effective solutions for these issues. Although in the world there are many transnational and local programs defining the course for solutions within the area of sustainable development, programs on corporate social responsibility, programs aiming at reducing poverty and unemployment, the results are unfortunately minor and frequently contrary to the planned results.

After recent crisis we cannot delude ourselves that similar situation would be most unlikely to happen again. Therefore, we need the CSR concept closer to the economic reality and more realistic in terms of human motivation, aware of the impact of numerous circumstances, for example the political and cultural ones on the managers’ behaviour. The source of inspiration may include e.g. the German institutional ethics (Ordnungsethik) focusing on the rules of the game, and not on the behaviour of particular entities in the economic world. Following this line of reasoning, the social responsibility should be reconciled with social thinking and should not yield to business under simple utilitarian reasoning, namely: in business we need to be ruthless, greedy, and egoistic since we are forced to act like that by the competition, but after all such approach generates economic growth. On the contrary, the concept should include in its scope of interests the economic aspects, historical changes, systemic conditions and impact of demographic process on the shape of economy.
REFERENCES


ENTREPRENEURSHIP
Abstract

The key issue in contemporary business environment is how to acquire and maintain the competitive advantage in the long term. In that sense, the organizations must seek for something new in their functioning, new products, services, suppliers, customers, distribution channels, markets, new marketing, organizational and other technical and non-technical solutions. Corporate entrepreneurship (CE) is critical to a firm’s success, particularly in today’s dynamic environment. The main aim of this study was to investigate the construct validity of Corporate Entrepreneurship Assessment Instrument (CEAI) in the case of Serbia. Data analysis was conducted using SPSS Statistics 19.0. The research findings revealed possible practical implementation of CEAI in Serbian organizations. The results showed that the employees’ attitudes toward the recognized CE dimensions have depended on their age, education, years of work experience, and position in the organization.

Keywords: corporate entrepreneurship, corporate entrepreneurship assessment instrument, transition economy

1 This study is financed by Provincial Secretariat for Higher Education and Scientific Research, Government of Vojvodina.
1. **INTRODUCTION**

Many authors stated that the corporate entrepreneurship had important role in implementing the growth strategy and the way of gaining and sustaining competitiveness (Dess et al., 1999; Kuratko, 1993; Merrifield, 1993). The concept of corporate entrepreneurship has introduced during the last 35 years. The concept of corporate entrepreneurship has not universally accepted term. Therefore, there are different terms in the literature such as an investment and intrapreneurship (Hornsby et al., 2002, p. 254). Corporate entrepreneurship encompasses situations that arise when embarking into new forms of business, while introducing new ideas into the organization and the basic idea that covers the entire business (Covin and Miles, 1999).

This entrepreneurship emphasizes the increasing ability of organizations to adopt and develop innovative and creative abilities. Organizational culture is accelerator of innovation as well as promoter of an entrepreneurial spirit.

Corporate entrepreneurship (CE) is critical to a firm’s success, particularly in today’s dynamic environment (Sebora et al., 2010). Hence, the main contribution of this paper is expanded existing literature by empirical testing of the research instrument for measuring corporate entrepreneurship in selected public organizations in transition environment. Investigating entrepreneurship is a complex task, therefore, many authors focused on conceptual schemas that were not tested or tested in single case study. In this paper, we present the results of the study in which 167 managers were interviewed from four Serbian organizations.

Management theory and practice reflect culture values of the society in which they created, therefore, they have limited practical value in case of different culture ambient (Janićijević, 2003, p. 45). Implementation of a research methodology develop in a national culture on respondent from different cultures can lead to misinterpretation of the results. This is also important to assess factorial structure of the questionnaire when respondents have different socio demographic characteristics (Ehrhart et al., 2008).

Hence, the subject of the research is the attitudes of employees from four public companies regarding the corporate entrepreneurship as a necessity of functioning in contemporary business environment. The main aim of this study is to examine how the employees in Serbian organizations look at the corporate entrepreneurship, that is if there are CE elements or not at all. The main hypothesis is following:

\[ H_0 \text{ There is significant differences between employees’ attitudes toward the corporate entrepreneurship and recognized CE factors regarding their age, education, years of work experience, and position in the organization.} \]

\[ A_0 \text{ There is not significant differences between employees’ attitudes toward the corporate entrepreneurship and recognized CE factors regarding their age, education, years of work experience, and position in the organization.} \]
Besides introduction and conclusion, the paper is structured into three sections. The next section is devoted to theoretical background in relation to the mere concept of corporate entrepreneurship, followed by the review of past research. The fourth section is devoted to research methodology. In the fifth section, we presented the results and discuss them.

2. THEORETICAL BACKGROUND

There is no single or unique approach that is accurately and incorporating different forms of the corporate entrepreneurship. Any research of corporate entrepreneurship should include conceptual definition of corporate entrepreneurship (Holt et al., 2007, p. 41). There is no consensus on the definition of the concept or the methods of measurement.

Corporate entrepreneurship represents the organizational behaviour that requires resources and management support for the development of different types of innovations that contribute to the creation of new value (Kuratko et al., 2005, p. 700).

Corporate entrepreneurship involves activities that incorporate innovation, new resources, customers, markets or new combination of resources, consumers and markets (Ireland et al., 2009). The corporate entrepreneurial activities can be conducted within companies’ boundaries (internal activities) or as a joint venture (external activities). From the perspective of organizational culture and entrepreneurship, creative organizational ambient has important influence on entrepreneurship spirit (Morris et al., 1994; Zahra et al., 2004; Chandler et al., 2000). The results of the study confirmed influence of management support as well as reward system on innovation (Chandler et al., 2000).

3. REVIEW OF PAST RESEARCH

Based on analysis of amount literature of corporate entrepreneurship, Hornsby et al. (2002) attempted to identify the key internal organizational factors that influence corporate entrepreneurship. Therefore, they presented the Corporate Entrepreneurship Assessment Instrument (CEAI) a survey instrument designed to help managers and leaders measure each of these internal environmental factors. The CEAI is promising for several reasons. First, the CEAI measures antecedents in a way that provides those that use it with a guide to improve corporate entrepreneurship activities.

Second, the CEAI measures entrepreneurship at the individual level. As noted, this is important because corporate entrepreneurship requires individual innovative behaviours. Third, the CEAI is relatively brief, which may encourage more managers and leaders to use it. The CEAI questionnaire focuses on the individual perception of corporate entrepreneurship. This questionnaire was applied to a sample of local managers consists of 48 items and five factors, namely: Management support, Rewards/reinforcement, Work discretion/autonomy, Time availability, and Organizational boundaries.
The promising results of the preliminary testing encourage other researchers to use the CEAI. (Adonisi, 2003; Brizek, 2003; Wood, 2004; Rhoads, 2005; Davis, 2006). Using the CEAI could also help improve the entrepreneurial skills of individual employees, who are regarded as more important than other resources when entrepreneurial activities need to be pioneered (Van Wyk and Adonisi, 2012). Kuratko et al. (2014) highlighted eight studies that have confirmed the validity of the CEAI such as Rutherford and Holt (2007), Goodale et al. (2011), van Wyk and Adonisi (2012) and five studies of their own. The results of the pilot research revealed that CEAI can be used in a Serbian context (Kontic, 2011).

4. RESEARCH METHODOLOGY

The total of 167 managers and employees from four Serbian companies participated in the survey. Respondents from particular company differed in their hierarchical and functional positions. The choice of the company determinates by willingness of senior management to participate in this study. The survey was conducted directly, i.e. the participants were aware they were participating in a survey, but the questions were not known ahead of time.

We attribute this high response rate (83.5% response rate) to the survey insiders who used their business contacts successfully and to the intensive communications regarding the survey materials. Respondent’s profile in the observed companies consisted of gender, age; education level, work experience, and managerial position. The research instrument was the original CEAI. Respondents are asked to indicate their current views of their organizations on a degree from 1 - disagree strongly to 5- agree strongly. We got written permission from authors (see Appendix 1). The research took place from May 2016 to June 2016. For the purpose of data analysis, descriptive statistics, Pearson correlation, t test, ANOVA, factor analysis and regression were computed. Data analysis was conducted using SPSS Statistics 19.0.

5. RESULTS AND DISCUSSION

The results of the reliability statistics pointed that CEAI can be used in Serbian environment (Cronbach’s Alpha for all scale was 0.927). Cronbach alpha for five aforementioned factors were 0.918; 0.782; 0.743; 0.465, and 0.696 respectively. The results of ANOVA showed significant differences between respondents from observed organization in anticipation of five factors (see Table 1).
Table 1

Post Hoc Tests - Multiple Comparisons

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>(I) Org</th>
<th>(J) Org</th>
<th>Mean Diff. (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management support</td>
<td>A</td>
<td>B</td>
<td>0.483</td>
<td>3.074</td>
<td>0.875</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>B</td>
<td>-1.993</td>
<td>3.015</td>
<td>0.510</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>B</td>
<td>-7.307(*)</td>
<td>2.984</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>C</td>
<td>-2.475</td>
<td>2.566</td>
<td>0.336</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>C</td>
<td>-7.790(*)</td>
<td>2.530</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>D</td>
<td>-5.315(*)</td>
<td>2.458</td>
<td>0.032</td>
</tr>
<tr>
<td>Work discretion</td>
<td>A</td>
<td>B</td>
<td>1.366</td>
<td>1.402</td>
<td>0.332</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>B</td>
<td>5.102(*)</td>
<td>1.375</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>B</td>
<td>0.824</td>
<td>1.361</td>
<td>0.546</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>C</td>
<td>3.737(*)</td>
<td>1.171</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>C</td>
<td>-0.541</td>
<td>1.154</td>
<td>0.640</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>D</td>
<td>-4.278(*)</td>
<td>1.121</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>D</td>
<td>-5.102(*)</td>
<td>1.375</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>C</td>
<td>-3.737(*)</td>
<td>1.171</td>
<td>0.002</td>
</tr>
<tr>
<td>Rewards</td>
<td>A</td>
<td>B</td>
<td>0.420</td>
<td>1.118</td>
<td>0.707</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>B</td>
<td>0.247</td>
<td>1.096</td>
<td>0.822</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>B</td>
<td>-1.773</td>
<td>1.085</td>
<td>0.104</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>C</td>
<td>-0.173</td>
<td>0.933</td>
<td>0.853</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>C</td>
<td>-2.194(*)</td>
<td>0.920</td>
<td>0.018</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>D</td>
<td>-2.021(*)</td>
<td>0.894</td>
<td>0.025</td>
</tr>
<tr>
<td>Time Availability</td>
<td>A</td>
<td>B</td>
<td>0.818</td>
<td>0.803</td>
<td>0.310</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>B</td>
<td>2.662(*)</td>
<td>0.788</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>B</td>
<td>0.355</td>
<td>0.780</td>
<td>0.649</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>C</td>
<td>1.844(*)</td>
<td>0.671</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>C</td>
<td>-0.462</td>
<td>0.661</td>
<td>0.485</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>D</td>
<td>-2.306(*)</td>
<td>0.642</td>
<td>0.000</td>
</tr>
<tr>
<td>Organizational boundaries</td>
<td>A</td>
<td>B</td>
<td>-0.238</td>
<td>1.042</td>
<td>0.820</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>B</td>
<td>2.862(*)</td>
<td>1.022</td>
<td>0.006</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>B</td>
<td>-0.111</td>
<td>1.012</td>
<td>0.913</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>C</td>
<td>3.100(*)</td>
<td>0.870</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>C</td>
<td>0.127</td>
<td>0.858</td>
<td>0.883</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>D</td>
<td>-2.973(*)</td>
<td>0.834</td>
<td>0.000</td>
</tr>
<tr>
<td>CE_SUM</td>
<td>A</td>
<td>B</td>
<td>2.848</td>
<td>5.838</td>
<td>0.626</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>B</td>
<td>8.881</td>
<td>5.725</td>
<td>0.123</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>B</td>
<td>-8.013</td>
<td>5.667</td>
<td>0.159</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>C</td>
<td>6.032</td>
<td>4.874</td>
<td>0.218</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>C</td>
<td>-10.861(*)</td>
<td>4.806</td>
<td>0.025</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>D</td>
<td>-16.893(*)</td>
<td>4.668</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*. The mean difference is significant at the .05 level.

Source: Authors’ calculations

Regarding the management support, the respondents from organization D had different attitudes from other three groups. Regarding the work discretion, the respondents from organization C had different attitudes from other three...
groups. Regarding the rewards, the respondents from organization D had different attitudes from other three groups. Regarding the time availability, the respondents from organization C had different attitudes from other three groups. Regarding the organizational boundaries, the respondents from organization C had different attitudes from other three groups. Analysis of the attitudes of the respondents of different socio-demographic variables showed that there was a different perception of the internal factors of corporate entrepreneurship.

The differences in the assessment of internal factors were recorded within a factor of work discretion between managers middle and senior levels (see Table 2). Higher levels of management to consider that factor significantly accelerates innovation in the analyzed organizations. There is a difference in perception of organizational boundaries from respondents who belong to the age group of 41 to 50 years. With regard to education, the respondents who have a College degree consider that rewards are important for the development and implementation of new ideas then other respondents.

Respondents who have 5 or less years of work experience are considered to have significant organizational boundaries to develop corporate entrepreneurship then those who have a longer tenure (see Table 2).

Table 2

<table>
<thead>
<tr>
<th>Post Hoc Tests - Multiple Comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable: Work discretion</strong></td>
</tr>
<tr>
<td>(I) Manager</td>
</tr>
<tr>
<td>Manager</td>
</tr>
<tr>
<td>Manager</td>
</tr>
<tr>
<td><strong>Dependent Variable: Organizational boundaries</strong></td>
</tr>
<tr>
<td>(I) Age</td>
</tr>
<tr>
<td>21 - 30</td>
</tr>
<tr>
<td>41 - 50</td>
</tr>
<tr>
<td><strong>Dependent Variable: Rewards</strong></td>
</tr>
<tr>
<td>(I) Education</td>
</tr>
<tr>
<td>High school</td>
</tr>
<tr>
<td>Undergrad</td>
</tr>
<tr>
<td>Postgrad.</td>
</tr>
<tr>
<td><strong>Dependent Variable: Organizational boundaries</strong></td>
</tr>
<tr>
<td>5 or less</td>
</tr>
<tr>
<td>11 - 20</td>
</tr>
<tr>
<td>over 20</td>
</tr>
</tbody>
</table>

*. The mean difference is significant at the .05 level.

*Source: Authors’ calculations*
The results of \( t \) test have showed that there was statistically significant differences between female and male respondents (see Table 3). Therefore, following analysis have been conducted with the results of statistics: independent samples test (\( t = -2.88; \) df=149; Sig. 0.00; mean diff.= -2.45; Std. Err. Diff.=0.85), and \( t \) test independent samples (\( t = 2.43; \) df=149; Sig. 0.02; mean diff.= 0.46; Std. Err. Diff.=0.19).

**Table 3**

<table>
<thead>
<tr>
<th>Group Statistics</th>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Err. Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management support</td>
<td>F</td>
<td>115</td>
<td>50,03</td>
<td>12,66</td>
<td>1,18</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>36</td>
<td>52,53</td>
<td>12,20</td>
<td>2,03</td>
</tr>
<tr>
<td>Work discretion</td>
<td>F</td>
<td>115</td>
<td>31,97</td>
<td>5,56</td>
<td>0,52</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>36</td>
<td>31,44</td>
<td>6,72</td>
<td>1,12</td>
</tr>
<tr>
<td>Rewards</td>
<td>F</td>
<td>115</td>
<td>16,22</td>
<td>4,42</td>
<td>0,41</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>36</td>
<td>18,67</td>
<td>4,52</td>
<td>0,75</td>
</tr>
<tr>
<td>Time availability</td>
<td>F</td>
<td>115</td>
<td>19,21</td>
<td>3,38</td>
<td>0,31</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>36</td>
<td>18,36</td>
<td>3,53</td>
<td>0,59</td>
</tr>
<tr>
<td>Organizational boundaries</td>
<td>F</td>
<td>115</td>
<td>23,98</td>
<td>4,21</td>
<td>0,39</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>36</td>
<td>22,83</td>
<td>4,72</td>
<td>0,79</td>
</tr>
<tr>
<td>CE_TOTAL</td>
<td>F</td>
<td>115</td>
<td>141,40</td>
<td>23,47</td>
<td>2,19</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>36</td>
<td>143,83</td>
<td>25,85</td>
<td>4,31</td>
</tr>
</tbody>
</table>

*Source: Authors’ calculations*

Statistically significant differences were identified within the factor named rewards. The female respondents assess that the rewards are much more important for the development of entrepreneurial organizational culture but male counterparts.

6. **CONCLUSIONS**

The main contribution of this paper is expanded existing literature by empirical testing of the research instrument for measuring corporate entrepreneurship in selected public organizations in transition environment. The total of 167 managers and employees from four Serbian companies participated in the survey.

The results of ANOVA showed significant differences between respondents from observed organization in anticipation of five factors: management support, rewards/reinforcement, work discretion, time availability and organizational boundaries. The research results confirmed the starting hypothesis. Analysis of the attitudes of the respondents of different socio-demographic variables showed that there was a different perception of the internal factors of corporate entrepreneurship. The differences in the assessment
of internal factors were recorded within a factor of work discretion between managers middle and senior levels. Higher levels of management to consider that factor significantly accelerates innovation in the analyzed organizations. Respondents who belong to the age group of 41 to 50 years had different perception of organizational boundaries then other age groups. With regard to education, the respondents who have a college degree considered that rewards were more important for the development and implementation of new ideas than other respondents. Respondents who have 5 or less years of work experience are considered organizational boundaries as important factor for development of the corporate entrepreneurship than those who have a longer tenure.

The study is the first step in exploring corporate entrepreneurship in one transition environment. Future study will include more organizations to further confirm validity of the CEAI in Serbian context.

REFERENCES


Technology, Wright-Patterson Air Force Base.


**APPENDIX 1. THE CORPORATE ENTREPRENEURSHIP ASSESSMENT INSTRUMENT (CEAI)**

We are interested in learning about how you perceive your workplace and organization. Please read the following items. Using the scale below please indicate how much you agree or disagree with each of the statements. If you strongly agree, write “5.” If you strongly disagree write “1.” There are no right or wrong answers to these questions so please be as honest and thoughtful as possible in your responses. All responses will be kept strictly confidential. Thank you for your cooperation!

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

**Section 1: Management support for corporate entrepreneurship**

1. My organization is quick to use improved work methods.
2. My organization is quick to use improved work methods that are developed by workers.
3. In my organization, developing one’s own ideas is encouraged for the improvement of the corporation.
4. Upper management is aware and very receptive to my ideas and suggestions.
5. A promotion usually follows from the development of new and innovative ideas.
6. Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.
7. The “doers on projects” are allowed to make decisions without going through elaborate justification and approval procedures.
8. Senior managers encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track.
9. Many top managers have been known for their experience with the innovation process.
10. Money is often available to get new project ideas off the ground.
11. Individuals with successful innovative projects receive additional rewards and compensation beyond the standard reward system for their ideas and efforts.
12. There are several options within the organization for individuals to get financial support for their innovative projects and ideas.
13. People are often encouraged to take calculated risks with ideas around here.
14. Individual risk takers are often recognized for their willingness to champion new projects, whether eventually successful or not.
15. The term “risk taker” is considered a positive attribute for people in my work area.
16. This organization supports many small and experimental projects, realizing that some will undoubtedly fail.
17. An employee with a good idea is often given free time to develop that idea.
18. There is considerable desire among people in the organization for generating new ideas without regard for crossing departmental or functional boundaries.
19. People are encouraged to talk to employees in other departments of this organization about ideas for new projects.

Section 2: Work discretion
20. I feel that I am my own boss and do not have to double check all of my decisions with someone else.
21. Harsh criticism and punishment result from mistakes made on the job.
22. This organization provides the chance to be creative and try my own methods of doing the job.
23. This organization provides the freedom to use my own judgment.
24. This organization provides the chance to do something that makes use of my abilities.
25. I have the freedom to decide what I do on my job.
26. It is basically my own responsibility to decide how my job gets done.
27. I almost always get to decide what I do on my job.
28. I have much autonomy on my job and am left on my own to do my own work.
29. I seldom have to follow the same work methods or steps for doing my major tasks from day to day.

Section 3: Rewards/Reinforcement
30. My manager helps me get my work done by removing obstacles and roadblocks.
31. The rewards I receive are dependent upon my innovation on the job.
32. My supervisor will increase my job responsibilities if I am performing well in my job.
33. My supervisor will give me special recognition if my work performance is especially good.
34. My manager would tell his/her boss if my work was outstanding.
35. There is a lot of challenge in my job.

Section 4: Time availability
36. During the past three months, my workload kept me from spending time on developing new ideas.
37. I always seem to have plenty of time to get everything done.
38. I have just the right amount of time and workload to do everything well.
39. My job is structured so that I have very little time to think about wider organizational problems.
40. I feel that I am always working with time constraints on my job.
41. My co-workers and I always find time for long-term problem solving.

Section 5: Organizational boundaries
42. In the past three months, I have always followed standard operating procedures or practices to do my major tasks.
43. There are many written rules and procedures that exist for doing my major tasks.
44. On my job I have no doubt of what is expected of me.
45. There is little uncertainty in my job.
46. During the past year, my immediate supervisor discussed my work performance with me frequently.
47. My job description clearly specifies the standards of performance on which my job is evaluated.
48. I clearly know what level of work performance is expected from me in terms of amount, quality, and timelines of output.
TERRORISM AS FORM OF SOCIAL ENTREPRENEURSHIP

Original scientific paper
UDK: 005.35:323.28
JEL classification: L31, M14, D74, H56

Abstract

Terrorism is linked with some form of social entrepreneurship. In order to ensure the survival of terrorist organisations, terrorist must acquire entrepreneurial and managerial skills and take over some business strategies. The view of terrorists as entrepreneurs is not new. Unlike traditional entrepreneurs, leaders of terrorist organisations are not motivated by profits. They are motivated primarily by social returns and have to operate with different stakeholders, the government, the army, non-governmental organisations, and even other criminal organisations, because only through funding can they gain and maintain the support of the community for which they fight. The leaders of terrorist organisations using their entrepreneurial and managerial skills they use propaganda to attract human and financial capital. The collected funds are used to finance its actions that represent actions for the public good to the communities they represent. This paper presents a view on linking terrorist organisations with social entrepreneurship.

Keywords: social entrepreneurship, terrorism, terrorist organisations
1. INTRODUCTION

Social entrepreneurship in the past decade garnered particular attention from policy makers, academics, practitioners, and the general public. It is important tool to tackle social challenges and to respond to them when the market and the public sector do not. Social enterprises and social entrepreneurs create innovative initiatives and solutions to unsolved social problems, putting social value creation at the heart of their mission in order to create benefit to different individuals, ‘communities’ and other groups. Analysis of theoretical and empirical studies allows to state that there is variety of attitudes on social entrepreneurship topic. Chowdhury and Santos (2010), Perrini, Vurra and Costanzo (2010) pay attention for further research of social enterprises scaling-up stage, Perrini, Vurra and Costanzo (2010) for explanation of factors influencing development of entrepreneurship initiatives. Others researchers state the importance of social value creation and argue about lack of research in social entrepreneurship process and social initiatives development (Sundaramurthy, Musteen, and Randel, 2013; Weerawardena and Mort, 2012; Mair and Marti, 2006; Santos, 2012). Austin, Stevenson and Wei-Skillern (2006) confirm that evaluation of social entrepreneurship as activity, its inputs and gained impact is complex, complicated, and not metered process. As there is no unified attitude to development of social entrepreneurship initiatives, there is a need for further research at this point (Perrini, Vurra, and Costanzo, 2010).

Terrorism is increasingly linked with social entrepreneurship. Definition of social entrepreneurship consists of two components: entrepreneurship and entrepreneurial spirit that drives the creation of social enterprises. Without it, they would not exist. In order to claim that terrorism, specifically terrorist leaders, are social entrepreneurs, one must first demonstrate their entrepreneurial orientation. One might be tempted to assume that terrorist leaders are entrepreneurs given that they star terrorist enterprises. The second component of social entrepreneurship requires that it serve social needs. While many scholars have suggested that terrorist enterprises operate in a manner quite similar to nonprofit organisations, the answear to this part is not straightforward. There are two ways to determine whether terrorist groups constitute social enterprises. The first strategy examines their organisational structure. The second strategy focuses on their output.

The field of terrorism studies has explored many different aspects of terrorist organisations. Various studies have employed strategic, organisational, and psychological frameworks to understand the motivation behind the formation and decision making of the terrorist groups. (McCormick, 2003). Yet, no single theory has emerged as dominant in the field, and many aspects of terrorist activities and even the very definition of terrorism are still subject to debate (Hoffman, 2006). The view of terrorists as entrepreneurs is not a new, there are still not many scientific papers on this subject. Similar to traditional entrepreneurs, terrorist leaders devise an organisational structure, attract both human and financial capital, design and implement a strategy, and so on (Rapoport, 2001). They seek out new opportunities, take risks and innovative, if only to ensure organisational survival. Terrorist leaders are not motivated by
profits like traditional entrepreneurs. Their goals are ultimately ideological. In this paper, the authors will try to explore whether it is terrorism or a terrorist organisation form of social entrepreneurship.

2. THE TERRORISM AS SOCIAL ENTREPRENEURSHIP

The social entrepreneurship is quite new and complex phenomena. Various authors provide different definitions of social entrepreneurship. In them components range from social justice, social value, viable socio-economic structures, forging a new equilibrium, employing innovation, entrepreneurial skills, market gaps, solving social problems, to social entrepreneur as a change agent (Zahra et al., 2009). Michael Porter in his interview even associated social entrepreneurship with new, future order, so called transformational capitalism, as social entrepreneurship creates shared value (Driver, 2011). Social entrepreneurship is beneficial for society as it is as one kind of social innovation and might bring benefits to various stakeholders: for business - rise in incomes and profits, customer’s volume, loyalty and satisfaction, business reputation; for the social targeted groups: reduction of unemployment and social exclusion of social targeted groups; for the state: favourable public opinion, reduced pollution and the state’s image” (Lauzikas and Cernikovaite, 2011).

Social entrepreneurship development, the emergence of it internationally is influenced by the three main factors – the demand (public desire for social services/products, as customer or user), the supply (social entrepreneurs) and third – because of the environment and institutional factor that influence the previous two factors (Chell et al., 2010). The social entrepreneurship phenomenon in the world has gained momentum and as argued by Kostetska and Berezyak (2014) for social entrepreneurship development, its promotion and expansion in the world various foundations, organizations are being established, such as the „Schwab Foundation for Social Entrepreneurship” in Switzerland or the „Ashoka Foundation” in India. However, social entrepreneurship is still a growing area for scientific research and the social entrepreneurship theory is still in the stage of conceptualization (Greblikaite, 2012). Certo and Miller (2008) highlighted few directions for researchers from different disciplines – in education for social entrepreneurs, in their characteristics and performance improvement examination, as well as networks and the importance of venture capital considerations, and value creation of social entrepreneurship. We can state, that different countries have different social entrepreneurship coverage specifics. Chell et al. (2010) argues that even in Europe there is variation in the social entrepreneurship elaboration. So in each country with different influenced factors is likely that there will also be variations in social entrepreneurship situation: drivers, opportunities, challenges and different trajectories and success stories of social entrepreneurship initiatives development.

Social entrepreneurship intentions and initiatives usually come from subjective norms and attitude (Prieto et al., 2012). Social entrepreneurship
initiatives development is a process, where social entrepreneurs as main actors, with certain skills are seeking to create social value (Adomaviciute et al., 2012). They are influenced by the environment that enhance and stimulate social entrepreneurs to take initiatives (Oana and Shahrazad, 2013) and innovations, that play one of the crucial role in the social entrepreneurship and its initiatives (Datta, 2011).

Researchers, authorities and large enterprises worldwide are giving more attention to the social entrepreneurship; it seems that it is a new transformation of market and society, a great rearrangement of doing business. For example, Government of the United Kingdom has provided a new method of funding social entrepreneurship initiatives (Tulba, 2014). One of the IT sector leaders - Google - has launched social entrepreneurship initiatives in various fields (Dees, 2007). However situation in Central and Eastern European countries, including Lithuania, lags behind and it needs to be changed in order to gain stability of society, to fulfil the market need, to change the perception of business, to reach commitments to European Union and achieve given objectives (Sekliuckiene, Kisielius, 2015, pp. 1017).

Definition of social entrepreneurship consists of two components. The first component is entrepreneurship (Roger, Osberg, 2007, pp. 29). The fact that its goal is to serve social needs rather than maximize profit may obscure its entrepreneurial nature. Yet, it is the entrepreneurial spirit that drives the creation of social enterprises. Without it, social enterprises would not exist. Thus, in order to claim that terrorists, specifically leaders, are social entrepreneurs, one must first demonstrate their entrepreneurial orientation. One might be tempted to assume that terrorist leaders are entrepreneurs given that they start terrorist enterprises. Although, not all enterprise owners are entrepreneurs. Literature on entrepreneurship differentiates between entrepreneurs and so-called shopkeepers based on their rationale for opening a business (Audretsch, Thurik, 1999). Shopkeepers start businesses primarily due to lack of other choices. They might prefer employment in another business to owning their own but for various reasons have no access to it. Consequently, their businesses rarely grow beyond one or two employees. Entrepreneurs, on the other hand, are motivated by the desire to seize an opportunity and capture profits. They often have access to other employment. Therefore, starting a business is clearly a matter of choice for them. They are also motivated to grow their businesses both in size and revenues.

The second components of social enterpreneurship requires that it serve social needs. While many scholars have suggested that terrorist organisation operate in manner quite similar to nonprofit organisations (Stern, 2003, pp. 142), the answer to this part is not straightforward. There are two ways to determine whether terrorist groups constitute social enterprises. The first strategy examines their organisational structure while the second strategy focuses on their outputs.

The most distinctive characteristic of nonprofits is that they operate under the constraint of non-distribution of profits (Anheier, 2005., pp. 40). Redistribution of profits is limited to the staff of the organisation. No profits
accrue to the founders or donors. Thus, it is fair to say that the individuals who participate in the establishment of a nonprofit organisation do not do so with the explicit purpose of earning a profit (Abdukadirov, 2010., pp. 605). None of the profit is normally distributed to the donors of the organisation beyond the equivalent of salary and amenities. Thus, terrorist organisation operate under the non-distribution constraint (Abdukadirov, 2010., pp. 605).

Recent studies, indicate that social entrepreneurship encompasses a broader category of entities, which is not limited by profit status (Peredo; McLean, 2006., pp. 61), than its defining characteristic is the use of innovative strategies to create social value. At least one of social enterprises goals is increasing social value. Social value is an abstract, hard to measure concept. Thus, it is unclear what exactly social enterprises maximize in order to increase social value. According to supply theory, social entrepreneurs are interested in increasing social value through their activities. They maximize the social value created by the organisation via maximizing its output.

The second strategy as we mentioned is examining their output. Social enterprises focus on public goods. The two key concepts that differentiate the types of goods are excludability and rivalry. Excludability refers to the ability of owners of a good to prevent others from consuming it, while rivalry indicates that the use of a good by an individual reduces the potential use of the good by others. The immediate output of terrorist organisation is symbolic violence (McCormick, 2003., pp. 474). What complicates the classification of the output of terrorist organisation is the fact that violence is committed by a variety of organisation for a variety of purposes.

The dual nature of the goals of the social enterprises raises a question whether such enterprises posses characteristics distinguishing them from regular enterprises. Given that the research on social entrepreneurship is still in its infancy, the debate over this issue is far from settled. Some scholars claim that social entrepreneurship occupies a separate domain (Dees, Emerson and Economy, 2001.), while others believe it should be analyzed within the general framework of entrepreneurship (Dorado, 2006.). The debate is further complicated by the broad spectrum of organisations that fall into the social entrepreneurship category (Austin, Stevenson and Wei-Skillern, 2006., pp. 3). Dual bottom line enterprises, maximizing both profit and social value, may behave in ways quite similar to commercial enterprises. The lower the importance of social returns in the enterprise’s mission statement, the less distinguishable it will be from regular firms.

3. Method

The paper is built on the analysis and synthesis of scientific literature which enable to describe the linkages of social entrepreneurship and terrorism. Literature analysis was conducted and based on results a theoretical framework was proposed for further research. The conceptual model is build based on
input-process-output logic model. Main variables based on theoretical analysis were identified. Inputs are contextual factors; processes are activities based on social entrepreneurship approach, such as social and entrepreneurial affiliation and terrorism as well as differences between social and private enterprises; and outputs that arise from inputs and processes are benefits generated by activities such as social value and opportunities for further development of terrorist organizations as social enterprises.

4. RESULTS

The process of social entrepreneurship initiative development covers several stages: context, processes and results. The importance of context was analysed by Grimes, McMullen, Vogus, and Miller (2013), who stated that first of all it is necessary to explore the environment and conditions that provide opportunities to address social problems by social entrepreneurship initiatives. The role of social entrepreneur in social entrepreneurship initiative development was highlighted by Zahra, Gedajlovic, Neubaum, and Shulman, (2009). They argue that social entrepreneurs create a significant impact to their communities - by using business models they provide solutions for difficult and complex social problems.

The main goal of terrorism: to disrupt ordinary life, foster fear and helplessness in the population, undermine public faith in the authorities, and, ultimately, to change government policy (Peleg et al., 2011; Waxman, 2011; Spilerman and Stecklov, 2013). It is important to distinguish between two types of terrorism; the first is a single-occurring, large-scale terror incident, such as the 1995 Oklahoma City bombing, the 2001 September 11 attacks, and the Madrid (2004) and London (2005) bombings. These are usually massive incidents with a significant impact on the affected society. In some cases, the specific disaster can evolve into a catastrophe with extensive implications on social life (Simantov, Badas and Peleg, 2016., pp. 76). The second type of terrorism involves recurring incidents or ongoing terrorism (also known as “cronic terrorism”). Examples of this type of terrorism have been encountered in Israel, Iraq, Afghanistan, Chechnya, and other places around the world.

Similar to traditional entrepreneurs, terrorist leaders devise an organizational structure, attract both human and financial capital, design and implement a strategy, and so on. They seek out new opportunities, take risks and innovate, if only to ensure organisational survival. Yet, unlike traditional entrepreneurs, terrorist leaders are not motivated by profits. Their goals are ultimately ideological. Consequently, their decision-making process differs from that of traditional entrepreneurs.

Terrorist leadership clearly exhibits entrepreneurial characteristics. Leaders of terrorist organisation in most cases come from a well off segment of society. For example, most of the leadership of Al Qaeda’s network came from middle-to upper-class families and had higher education (Abdukadirov, 2010, pp. 604). They normally have highly favorable career prospects compared to
the rest of population. Consequently, for them starting a terrorist organisation is a matter of choice. Intensive recruitment drives of most terrorist organisation further point to their desire for growth.

Terrorist organisation lie on a continuum of criminal organisation ranging from profit-oriented criminal gangs to highly ideological terrorist groups (Dishman, 2001., pp. 47). Criminal gangs utilize the profits for personal benefit. Terrorist organisation use the profits to finance terrorist activities. Yet, there are many examples of terrorist leaders siphoning off considerable amounts of organisational funds for personal use (Stern, 2003., pp. 213). Thus, the level to which the profits are used to finance the main terrorist activity is a function of the social orientation of the leadership.

Regardless of their social orientation, operations of the vast majority of terrorist organisation are completely criminal. Hamas is a rare exception. While most of its time and resources are devoted to terrorist violence, a substantial part is spent on running hospitals, educational programs, and other social welfare programs for ordinary Palestinians in Gaza. This may be less surprising when one considers the organisation’s origins. Islamic Center (al-Mujamma al-Islami), a precursor to Hamas, was founded as a nonprofit in 1973 (Mishal and Sela, 2000., pp. 19). Its mission from the inception has been to provide social services to the Palestinians in Gaza. It was only during the First Intifada of 1989 that the organisation has radicalised and established Hamas as its military wing—while continuing to provide social services.

5. CONCLUSION

This paper argues that terrorism can be viewed as social entrepreneurship as a terrorist organisation also can be viewed as social enterprises. Leaders of terrorist groups act as classic entrepreneurs. They constantly innovate and adapt to their environment. They change their tactics and targets as well as find new sources of funding and supplies. They are alert to opportunities and are willing to take risks to seize those opportunities. In fact, given the environment in which terrorist groups operate, entrepreneurial orientation is crucial to their survival. The view of terrorist groups as enterprises, however, raises a number of questions on the nature of such enterprises, which in turn is determined by the nature of their main output. Terrorist groups pursue social returns rather than profit. They justify use violence in terms of defending the interests of a larger community against an oppressive force. Such violence can be classified as a public good, as its benefits are intended for a larger community rather than the members of terrorist groups.

Different theories apply to different types of terrorist organisations. Public goods theory is more applicable to national separatist and social revolutionary groups, whereas supply-side theory is better suited for religious and right-wing terrorist organisations. Interdependence theory points to the frequent involvement of governments in the support of terrorist organisations.
It is important to note that this paper does not suggest that terrorist organisations are nonprofits that simply espouse extreme ideologies. One can easily find nonprofits that support extreme ideologies, but that alone does not make them terrorist. The nonprofits community, which includes most social enterprises, strongly opposes equating nonprofits with terrorists for legitimate reasons.

Terrorist violence, the output of terrorist organisations, is explicitly criminal. Thus, much the same way criminal gangs are not equated with legitimate firms, terrorist organisations should not be equated with nonprofits. That said, functionally terrorist organisations do operate as social enterprises. Thus, one can apply the same theoretical framework to gain insights about terrorist organisations.

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Abstract

The transition to a market economy in Russia not only was accompanied by general economy crisis, but also provided wide opportunities for entrepreneurship, including technology sphere. But still, there is a void on peculiarities of technology entrepreneurship development in Russia. That is why the aim of this paper is to consider in dynamics some features of technology enterprises development in the changing context on the example of region that has favorable conditions for technology entrepreneurship. Due to exploratory character of the research, main results are based on 10 case-studies of technology enterprises established in 1990s and 2000s in the region. As a result of the study, some typical features for technology entrepreneurship in the region were found: the most important resources are people and intellectual property; inviolable principle is to minimize external financing; company development strategy is niche and based, focusing on core competencies and outsourcing non-core activities.

Keywords: technology entrepreneurship, transition economy, Russia
1. INTRODUCTION

Importance of technology entrepreneurship cannot be underestimated for growth, differentiation and acquisition of competitive advantage both at company level and at the level of the region and country. New technology entrepreneurial projects are the main source for renovation and stable growth of an economy (Bailetti, 2012; Bruton & Rubanik, 1997; Li, Yong, & Ho, 2006; Venkataraman, 2004).

Despite there are a lot of papers, devoted to different aspects of technology entrepreneurship development, most of them consider this phenomenon in the context of stable developed economies, and the specifics of technology entrepreneurship in transitional economies is still under-represented (Bruton & Rubanik, 1997, 2002; Etzkowitz, 2000; Lau & Bruton, 2011; Tchalakov, Mitev, & Petrov, 2010).

The transition to a market economy in Russia was accompanied not only with general economy crisis, but also provided wide opportunities for entrepreneurship, including technology sphere. Some basics for systematic investigation of technology entrepreneurship in Russia can be found in papers by Bruton and Rubanik (1997) and Medovnikov (2013). But still, there is a void on peculiarities of technology entrepreneurship development in Russia. Also, there is a need to update knowledge on the phenomenon due to some changes in the Russian economic context and to point out some specific traits of different generations of technology entrepreneurs.

That is why the aim of this paper is to consider in dynamics some features of technology enterprises development in the changing context of transitional economy on the example of Nizhny Novgorod region, which is justified to have favorable conditions for the development of technology entrepreneurship (Gokhberg, 2014). Due to exploratory character of the research, main results are based on 10 case-studies of technology enterprises established in 1990s and 2000s in the region. Despite the fact, that a Russian region is in the focus of the provided research, the findings and propositions developed, can also be useful for investigations in other regions with similar conditions.

2. LITERATURE REVIEW

2.1. Technology entrepreneurship

Definition of technology entrepreneurship is still unsettled. There are two main approaches to defining the phenomenon. The first is the quantitative one, with the main criterion being a share of budget spending on R&D-activities. The second approach is qualitative in its nature and bases itself on assessment of some enterprise characteristics and the degree of complexity of technology used. Basing on the content analysis of literature, devoted to technology entrepreneurship, conducted by Bailetti (2012) we can figure out four approaches to definition of technology entrepreneurship.
The first approach considers technology entrepreneurship as a process of establishment and running a technology based business (Byers, Dorf, & Nelson, 2011; Jones-Evans, 1995; Nichols & Armstrong, 2003). It focuses on organizational aspects of a business and some characteristics of an entrepreneur (propensity to take risk, commitment, passion and relentless desire to be successful).

The second approach develops a Schumpeterian view on the entrepreneurship and understand technology entrepreneurship as an activity, connected with resources recruitment (organizational resources, technical systems and strategies) in order to exploit emerging technology opportunities (Liu, Chen, & Tsai, 2005).

The other group of researches (Garud & Karnøe, 2003; Jelinek, 1996) consider technology entrepreneurship as an interactive process, executed by different actors, each of which contributes to the technology creation and transformation.

The fourth approach emphasizes the necessity of solutions in search of problems (Venkataraman & Sarasvathy, 2001). I.e. a technology entrepreneur should find either an application for existing technology, or a solution for unsolved problem.

For the purposes of this paper under technology entrepreneurship we understand an activity connected with launching a new ventures, introducing a new application, or exploiting opportunities that rely on scientific and technical knowledge (Bailetti, 2012).

2.2. Conditions for technology entrepreneurship in transition economy

Different frameworks of factors, affecting technology entrepreneurship, can be found in the literature, however most of them are developed for economies with stable conditions, such as the USA or Canada (Bruton & Rubanik, 1997; Kuemmerle, 2005). These frameworks state venture capital to be the main factor, accompanied by a set of supporting factors. Feldman (2001) complements venture capital with supportive social capital, research universities and entrepreneurial expertise. Another view on factors for technology entrepreneurship is represented in the work by Venkataraman (2004). The author suggests, that venture capital can provoke technology entrepreneurship development only if it is accompanied by novel ideas, role models, informal forums, region-specific opportunities, safety nets, executive leadership, and access to large markets (Venkataraman, 2004).

Since these frameworks are developed on the cases with stable economy environment, they should be adopted for transitional economies, as the last ones has a different set of institutions and very volatile conditions (He, 2009). Otherwise, it is possible to use universal frameworks, such as Entrepreneurial Framework Conditions (EFCs) by Global Entrepreneurship monitor (Global
Entrepreneurship Monitor). This framework suggests to evaluate with Likert-scale the following conditions: finance, government policies, government programs, entrepreneurial education and training, r&d transfer, commercial and professional infrastructure, internal market openness, physical infrastructure and services, cultural and social norms. Another universal framework for analysis of entrepreneurial conditions worldwide was offered in 2005 by Walter Kuemmerle (2005). It consists of five dimensions:

− strong property rights;
− acceptance of success and well-intended failure;
− availability of risk capital;
− high quality of human capital and technological innovation;
− favorable market structures.

The framework offers to compare existing economic environment with an ideal archetype of an entrepreneurial society. The nearer the economy under consideration to the archetype, the more favorable conditions for entrepreneurship to flourish. However, the author of the framework suggests, that even in context, deviant from ideal one, entrepreneurship can develop, provided it uses special strategies (Kuemmerle, 2005).

That is why it is needed to understand, how the context of a transitional economy differs from an archetypical one. He (2009) points out, that the most important distinction of a transitional economy is not well established private property laws and rights. Moreover, ownership and resources take on a different meaning, as initially the government owns every resource, and it is needed to maximize social resources and leverage constrained ownership to engage in entrepreneurial activities. On contrast with material and financial resource constraints, development of human capital in transitional (mostly post socialism) economies was relatively high (Manev & Manolova, 2010).

Also it is worth mentioning, that transitional economies undergo a total institutional reforms, which lead to opposite consequences. On the one hand, institutional reforms have made entrepreneurial endeavors possible. On the other hand, an institutional hiatus has severely constrained the entry and growth of new and small firms (Manev & Manolova, 2010). All these peculiarities cannot but influence the development of technology entrepreneurship in the context of transition.

2.3. Characteristics of technology enterprises and factors of success

The success and development of technology entrepreneurship in such adverse and turbulent conditions depends on several factors.

The research (Bruton & Rubanik, 1997) on the success factors of technology startups in Russia analyses applicability of three broad subject areas, usually used for stable economic environment:
(1) Founder characteristics;
(2) Firm characteristics;
(3) Startup strategy.

Basing on a case-study Bruton and Rubanik (1997) suggest the following:

− Technology startups founded by multiple member teams outperform those startups founded by single individuals in a transitional economy.
− The firm’s ability to adapt to, or change, its environment is the most critical aspect of firm success in a transitional economy, rather than industry in which a firm competes.
− High technology firms with breakthrough technology will be more successful than those with demand driven technology in a transitional economy.
− High technology startup firms that pursue an international strategy from their initiation experience greater success in a transitional economy.
− Higher levels of unrelated diversification by high technology startup firms in a transitional economy leads to lower levels of profitability.

In a recent research by Medovnikov et al. (2013) some features and characteristics of contemporary technology entrepreneurship were reviewed. Accordingly to the research technology entrepreneurs are motivated not only with an opportunity to earn, but also by an opportunity to launch an innovative product or solve social problem. The strategy of such companies focuses on the market development, entrance to the foreign markets and propensity to partnership. Such entrepreneurs rely on a governmental support, and are not ready to sell their business or to share it with investors, what leads to small sizes and low growth rates. Also, contemporary technology enterprises suffer from the lack of qualified personnel.

3. METHODOLOGY

According to the purpose of the research, we studied technology entrepreneurial companies, established from 1990s to 2000s in Nizhny Novgorod. Issues for studying concern distinctive features such as prerequisites and principles of company establishment, the resourcing, business strategies, ways to success.

Social and cultural peculiarities of technology entrepreneurs, prerequisites, principles of company establishment and its development are highly determined by belonging to a particular generation. We can distinguish two waves of technology entrepreneurs, which are determined according to the time of establishing business rather than to the age of the founder (Medovnikov, 2013).

Entrepreneurs who start at different periods of time have a difference in quality of their entrepreneurial experience, and in their social characteristics (Barsukova, 2000). Founders of the first wave are people who start their business
at the turn of the 1990s. The second generation of technology entrepreneurs — those who have become involved in entrepreneurship based on high technology in the period of contemporary economic modernization 2000s.

Choice of the Nizhny Novgorod region as the research object is justified by high levels of social, economic and innovation development in the region. The city had a closed status during the Soviet period, due to high concentration of scientific and industrial companies and research facilities. During the transition to a market economy the city was opened and it led to the redistribution of these resources. It stimulated the growth of technology entrepreneurship in the region. In 2012 this region occupied the fourth place in the Russian Regions Innovation Ranking (Gokhberg, 2014). In our days there are 39 scientific institutions, 21 design bureaus, 14 Universities (including subsidiaries) and 16 industrial research and development centers (Nizhegorodstat, 2013). Also, the region has developed a net of business-incubators, technoparks, financial institutions such as business-angels network and venture fund. So, as a result we can see a lot of technological companies that were established over the last several decades in this region.

Due to the aim of the research the most appropriate method of data collection and analysis is the case method (Yin, 2009). To determine the distinguishing characteristics of two generations of technology entrepreneurial companies we studied the cases of representatives of each generation. For best results we identified some criteria for selecting companies to participate in the study:

− the company was established only within the allocated waves;
− the company is a resident of the Nizhny Novgorod region, not a branch;
− the company is still operating or was sold to a strategic investor;
− the company uses in its operations technologically new or significantly improved products or processes, or both products and processes during the study period (OECD, 2005);
− the sources for innovation should be the following: Research Institute of Russian Academy of Sciences; universities; large enterprises or experimental design bureau; private ideas.

After analysis of technology companies based on selected criteria, 10 cases of small successful technology companies in the region were chosen (see Table 1). The data was collected for each case from open sources (local business media materials and Internet resources). We analyzed their history and then conducted personal semiformalized interviews with the representatives of their founders or directors. Every conversation was recorded and covered not more than 50 minutes. We emphasized not only on the external factors affected the business, but also on the ways and strategies that entrepreneurs used to solve problems. Conversation is aimed at clarifying the personal characteristics of entrepreneurs, the definition of the context and characteristics of entrepreneurial projects.
Table 1

<table>
<thead>
<tr>
<th>Company Name</th>
<th>year of foundation</th>
<th>Source for innovation</th>
<th>Product/technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binar Co</td>
<td>1989</td>
<td>private ideas/research  institute</td>
<td>New materials, new equipment</td>
</tr>
<tr>
<td>Prima-NN</td>
<td>1990</td>
<td>private ideas/research  institute</td>
<td>Radio communication equipment</td>
</tr>
<tr>
<td>Meduza</td>
<td>1992</td>
<td>Research Institute</td>
<td>Medical ultrasound equipment</td>
</tr>
<tr>
<td>Gycom</td>
<td>1994</td>
<td>Research Institute</td>
<td>gyrotron complexes</td>
</tr>
<tr>
<td>Neolith</td>
<td>1999</td>
<td>private ideas</td>
<td>artificial stone</td>
</tr>
<tr>
<td>Mega-NN</td>
<td>2001</td>
<td>private ideas</td>
<td>ICT</td>
</tr>
<tr>
<td>Centre for science and technical development</td>
<td>2007</td>
<td>Research Institute</td>
<td>lasers</td>
</tr>
<tr>
<td>Intellectual technologies</td>
<td>2009</td>
<td>private ideas</td>
<td>Mobile applications</td>
</tr>
<tr>
<td>Lesnoy Dozor</td>
<td>2010</td>
<td>private ideas/university</td>
<td>IT</td>
</tr>
</tbody>
</table>

Source: interview with entrepreneurs

The main question for the research is “How does an entrepreneur create and develop a technology business in changing environment?”. In order to answer this question, questions for the interviews were developed, basing on guides of similar foreign studies. In the case analysis the block of questions for interview with experts from the GEM methodology was used in order to understand the external environment and business climate for entrepreneurship in the country and region. Questions for the interview were divided into two main blocks concerning life cycle of the company: the period of start of the business, and the period of development and growth. All questions cover external and internal factors that have been identified by other authors. Internal parameters consist of: the motivation to the entrepreneurial activity in the technological sphere, sources of ideas and innovations, knowledge and competence, resourcing, business development strategy, a high risk of this business. External factors were divided into following groups of factors:

- Economic factors (access to market information, export-import policy, access to finance, the overall economic situation in the country, the possibilities and conditions for co-operation, demand for innovations, the level of the shadow economy)
- Political and legal factors (the legal framework for business, legislation for the intellectual property protection, the procedures of companies registration, tax policy)
- Technological factors (level of science, research and development; access to new technologies, the activity of scientific organizations, innovation climate in the country)
- Social factors (education system, the availability of qualified person-
nel; socio-cultural norms, living standards and working conditions in the country).

The collected data was qualitatively analyzed, and as a result we identified drivers and constraints for development of two generations of technological entrepreneurship, trends in the evolution of this type of business in the region.

4. TRENDS AND FEATURES OF THE TECHNOLOGY ENTREPRENEURSHIP EVOLUTION PROCESS IN THE NIZHNY NOVGOROD REGION

The research results are divided into two logical parts. The first part concerns the stage of companies’ formation and covers such questions as motivation, resources, source of idea, background and experience, partners, circumstances of this process and other. The second part is devoted to the stage of business development and raises such topics as favorable environment and conditions for development, problems and barriers, society attitude to the technological entrepreneurs and other aspects.

The main motivation to start technology business in the cases under consideration is to earn more money, to be independent in decision-making process, and to commercialize their scientific results. Entrepreneurs in all cases had a stable job, but they were dissatisfied with some opportunities to realize their own project. We can say that both generations (1990s and 2000s) are improvement driven opportunity entrepreneurs. However, we should note that technology entrepreneurs of the second generation are more ambitious, self-confident, and are trying to increase their income.

In order to start a business it is necessary to collect some resources. For the technology based company the intellectual property and people play a key role. In our research we consider such resources as people, intellectual property, finance, and partners (connections).

There were a lot of freed up resources from scientific organizations during the economic restructuring in 1990s. These resources were utilized in different ways, and there was a real opportunity for entrepreneurs to attract some needed resources. Many technology entrepreneurs took advantage from this opportunity and bought out some production facilities (sometimes even with equipment) at low prices. Many highly qualified specialists from scientific institutions were fired, and they were invited to join a team of technological entrepreneurs. In the new generation we can see a shortage of highly qualified personnel that show the current situation in Russia – a degradation of personnel for high-technology companies.

Weak legislation in the field of intellectual property protection enabled technology entrepreneurs to carry knowledge and technologies away from research institutions. They kept all knowledge in their heads during their work
that is why there was no formal technology transfer. Businesses of entrepreneurs from first generation were based on these technologies and knowledge. In contrast, the majority of representatives from the second generation of technology entrepreneurs have their private ideas without strong connections with scientific institutions. We can note the tendency of a decrease of scientific base from Soviet Union period.

If we look at the tendency in intellectual property protection, we will see an increase of interest to patenting in the new generation. Companies get patents in case of entering the foreign market, applying to some grant programs, collaborating with venture funds, or having mechanisms to search violations of the rights. Both generations do not believe in the rights protection when they patent their intellectual property. But they are sure that intellectual property is a key competitive advantage for the business, and they protect it as know-how.

In all considered cases we have found the team and technologies as key factors for the technology business success. The majority of teams from the first generation cases consisted of people who worked together a long period of time in the scientific institutions.

We should note the strong partnership between technology entrepreneurs from 1990s and scientific institutions that they left. It was a significant factor to survive and succeed. However we can see not only positive relationship between new company and scientific organization. We have an example of strong competition between them with use of noncompetitive ways of combat. Cases from the new generation show some changes, their partnership with scientific organizations weaker and more formal.

When we analyze competencies and skills of entrepreneurs in the beginning of their activity, we will see the common situation for both generations with absence of any business knowledge, skills and experience. They have all felt this shortage. The first generation relied on their own experience, and on common sense. The second generation tried to receive additional education, or get consultations from other entrepreneurs, or find a partner with skills and experience.

The government support usually plays a significant role in the technology business development. In 1990s there was a period of a transition when many structural changes occurred in the economy. At the time the government provided technology businesses with a small amount of support programs. But entrepreneurs preferred to keep a distance with government and for many considered cases it was very important that the government did not interfere with activities of their business. In 2000s we can see a lot of emergent government support programs for the technological entrepreneurs (different financial tools, a lot of grants, business-incubators, consulting services and so on) that were available for entrepreneurs. All this mechanisms strongly affected the technology entrepreneurship activity. The majority of considered cases from the second generation was based on such support, and actively uses it for development.
Considering technology entrepreneurial companies from the first generation we should stress on their closed links with scientific organizations. They are as prototypes of spin-off companies, because they use knowledge and technologies accumulated during their work on these organizations. To the beginning of the 21st century the scientific potential of scientific institutions was reduced. That is why in the second generation we can mark independent private ideas for technology business, but they are less innovative and complicated in comparison with the first generation.

Looking at the problems that were mentioned by entrepreneurs in their experience of technological companies’ development, we can observe trends of the economic changes and shift of a business environment. The process of transition brings a lot of problems for technological business development.

First of all it concerns the total degradation of manufacturing industries that led to the shortage of the high quality raw materials and supplies for high technology companies. It provokes the need of foreign suppliers, but there were difficulties in the process of importing to Russia.

Secondly, we should stress the other main trend – the degradation of highly qualified personnel that is essential for the technology business. In the first generation there were no problems with staff because of the unemployment in the economy. But in 2000s it is a huge difficulty to find highly qualified engineers who make up the bulk of the staff of technology companies.

High risks and unfavorable business environment make technology business unattractive and unstable for new entrepreneurs who usually choose traditional and simple types of business. Both considered generations have this attitude.

One of the main problems for the development of technology entrepreneurship is the lack of demand for innovations and high technologies. This obstacle was mentioned by all respondents from both generations. It makes entrepreneurs discover new market niches at domestic market for their unique products or enter a foreign market, which was a complicated process especially for the first generation of technology entrepreneurs in Russia.

After obstacles and barriers we analyzed strategies and secrets that allowed companies to survive and grow. All our cases choose the quality of the product or technology as a priority strategy for the company development. Their customers are very sensitive to quality of a product that is why entrepreneurs pay more attention to it. Additionally all companies try to adapt their product to the customer need and focus on the individual approach to every client. In order to be effective all companies focus on their key processes and they prefer outsource other business-processes like manufacturing, distribution and so on. The main competitive advantages of all our cases are intellectual property and a team of high qualified personnel. Exactly these resources make company produce the best product at the market.
The other part of questions concerns the environment for technology business development. We cover such topics as legislative environment, public attitude to the entrepreneurial activity, availability of the qualified personnel and venture capital, and favorable market structure.

In the 1990s there was a start of a transition to the market economy. That is why the legislative framework for business was quite weak and it did not provide adequate control over the situation in the country. The tools for intellectual property rights protection started to form. In our days we should note a good legislative framework for the business development, but our respondents hardly believe in the protection of their rights on intellectual property in case of patenting.

In such a difficult period for the country in 1990s the attitude of society to the entrepreneurs in general was extremely negative. Typical association with entrepreneurship was larceny and fraud. But society gave a respect to technological entrepreneurs, due to the manufacturing, real production and new complex technologies. In the new century public attitudes towards entrepreneurship began to change for the better. Now, the creation of new business is associated with new product and new jobs, but attitude of society to the technological entrepreneurship grew cold.

One of the strongest factors affecting the development of the technological entrepreneurship is a quality of a human capital. In 1990s there was no problem with high quality personnel. It is connected with strong Soviet Union system of science, and accumulated experience of the staff in the narrow fields of knowledge. In our days the degradation of human capital occurs, the amount of high qualified personnel is decreasing for different reasons. Currently it causes a lack of qualified personnel for the majority of technology entrepreneurs.

Many technology companies in 1990s faced a shortage of financial resources for the business development. On the one hand there was no venture capital, on the other hand entrepreneurs wanted to manage the company by their own. Both generations prefer autonomy, that is why they financed their businesses by their own means, and attracted investments only in the necessity to expand quickly. The first generation used some creative mechanisms to solve financial problems, such as prepayment or barter. In the early 2000s Russian government started providing technological entrepreneurs with different financial tools and programs, the venture capital market was formed. It strongly affected the emergence and growth of technology businesses, because many entrepreneurs started a business based on that support. Government support, such as grant programs, is now more preferred for entrepreneurs because it saves the autonomy and share of the business.

Without a favorable market structure is quite difficult to develop business at any time. Low market entry barriers and unsaturated markets without competitors in 1990s gave a great opportunity for new entrepreneurs. But on the other side lack of domestic demand and weak legislative framework
made technological entrepreneurs choose a specific niche on the domestic market or find partners on the foreign ones. Some of the cases from the first generation show the success stories by working only on the international market. Favorable relationships with partners also have a positive impact on the development of entrepreneurship. In order to survive companies from the first generation had established strong collaboration with partners. Lack of information about the market and about the rules of the game in the foreign market, as well as the language barrier became for many entrepreneurs a reason for not entering the international market. If we look at the market structure in 2000s we will find more information about rules, competitors, technologies and customers. But there is low demand on the innovations and new technologies yet. There are some reasons for not entering an international market, such as specific product, which is not suitable for foreign consumers, complex procedure for receiving permits and necessity to protect their intellectual property rights. Reluctance to disclose their technology leads to the fact that companies operate on the Russian market.

5. CONCLUSIONS

Summarizing up the work done, it should be noted that the different approaches to the definition of technological entrepreneurship have been analyzed; the peculiarities of transition economies were studied with definition of the role of technological entrepreneurship. Particular attention was paid to the development of technological entrepreneurship in transition economies during the literature analysis. The Russian context of the transition phase analysis was conducted and the peculiarities of Russian reality were marked.

The case method was selected to study the evolution of technological entrepreneurship in the Nizhny Novgorod region. We studied 10 cases of companies founded in the 1990s and 2000s in the Nizhny Novgorod region to determine the distinguishing characteristics of two generations of technology entrepreneurship. Special selection of cases was performed for better results. For each case there were: public sources information collection; company history study; personal semiformalized interview with CEO or founders.

The qualitative analysis was performed which allowed us to define drivers and constrains for two waves of technology entrepreneurship development. The evolution trends regarding this type of business in the region were identified.

As a result of conducted study, it is possible to draw general conclusions on the main issues discussed. There were some tendencies to preserve the principles of creating and maintaining the technology business through different generations, but there have been some evolutionary changes.

Having considered the question of motivation for starting a business in the high-tech field, we found that most of it is related to the implementation of scientific results and getting additional income, rather than forced motivation. It is typical for both generations and has not changed. Thus, we can conclude that this motivation is typical for high-tech businesses in the area.
In the study, we found that the main most important resources for technology companies of all generations are people and intellectual property in the form of knowledge and experience of these people. Nowadays, entrepreneurs are gradually becoming aware of the need to formally protect their intellectual property, but they still do not trust the legal system and prefer to protect it as know-how. With regard to human capital, the quality and availability of highly qualified personnel for high-tech business has declined substantially over time. This shows the degradation of human capital in the country.

Also inviolable principle of doing technology business in Russia is to minimize external financing. This is manifested in both generations, all the studied companies prefer self-financing or grant programs, which allows to limit an external interference to the management of the company. However, in the second generation, one can see a greater willingness to investor’s entry, as owners of the companies realize that without them the development will be too slow. That is, despite the emergence of available venture capital in the 2000s, technological entrepreneurs are reluctant to use it.

If we consider the cases in terms of relationships with partners, one can find close links with scientific organizations which were the source for the first generation entrepreneurs. In the second generation this type of links is not observed, instead of it there are formal relationships defined by written contracts.

Certain knowledge and skills are required to start a business. In this regard, it should be noted that there were lack of necessary skills and knowledge in both generations, as founders often had scientific or technological background. To obtain the missing skills and knowledge entrepreneurs of both generations sought to learn and relied on their experience or someone else’s. However, first generation entrepreneurs had fewer opportunities for training and fewer experienced people in the environment.

The attitude to government support is more discreet in the first generation. Second generation entrepreneurs are more loyal to government support as the number of support programs had increased drastically. Some of second wave entrepreneurs have their business started precisely because of government support.

Among the problems that were mentioned by both generations representatives there were: lack of demand for innovative products in the country, the degradation of the industry, the high risks of this type of activity, resulting in low business activity in this area. A distinctive feature of the second generation of technology entrepreneurs is the sharp shortage of qualified engineering personnel.

Speaking about the company development strategy, both generations talk about niche strategy chose quality leadership strategy and adhere to a strong client orientation, focus on their core competencies and prefer to make outsourcing non-core activities.

Considering the external conditions for the development of technological entrepreneurship in the country, it is worth noting that the legal framework was formed, private property became better defended, the institutional environment
has become more favorable and orderly. Despite this, entrepreneurs still do not thrust the intellectual property protection system.

Public attitudes towards entrepreneurship eventually became more tolerant, and attitude toward technology entrepreneurship transferred from a positive to indifferent.

The market environment has become more favorable, but the market is gradually saturated and entry barriers are growing. The role of market methods of dealing with competitors has increased; one can observe the development of the business culture of market relations.

As a result of this exploratory study trends in the evolution of technological entrepreneurship in the region are revealed. The peculiarities of technology entrepreneurship development in the region with high scientific potential were formulated. In addition, the obtained results can be used for further studies of technology entrepreneurship in other regions.

Identified factors of technology entrepreneurship in the Nizhny Novgorod region will serve as the basis for local authorities to create programs for further development of technology entrepreneurship in the region.

ACKNOWLEDGMENTS

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REFERENCES


Keywords: Croatian SMEs, ambidextrous orientation, strategic ambidexterity
1. INTRODUCTION

In its original meaning, the ambidexterity refers to the ability to use both hands with equal dexterity. In the organizational context, ambidexterity is the ability of an organization to simultaneously exploit its current potential and to explore the future opportunities. Research of organizational ambidexterity assumes that that successful businesses are ambidextrous, that is, coordinated and efficient in its management of daily business needs and at the same time adaptive to changes from the environment (Raisch, Birkinshaw, 2008). It is based, on the one hand, on the exploitation of existing knowledge in terms of performing everyday tasks efficiently and achieving short-term goals, and on the other hand on the exploring new, innovative opportunities. The two most widespread meanings of organizational ambidexterity (Gibson, Birkinshaw, 2004) are structural ambidexterity and contextual ambidexterity. Structural ambidexterity mostly refers to the organizational structure of the firm, and contextual ambidexterity is focused on the behaviour of human resources in the organization. Research of the structural aspect of organizational ambidexterity is more appropriate in large firms due to the possibility to separate exploratory and exploitative processes both organizationally and strategically. While adapting for tomorrow requires change, flexibility and creativity, profits for today require order, control and stability (Volberda and Lewin, 2003).

The aim of this research is to examine the specificity of organizational ambidexterity in SMEs in the Republic of Croatia. The contextual and strategic aspect of the ambidexterity will be investigated, while the structural ambidexterity will be omitted. Furthermore, the impact of the ambidexterity on the performance of the firms will be studied.

Below this paper, the basic theoretical assumptions will be summarized and the results of the empirical research presented.

2. THEORETICAL OVERVIEW

The concept of ambidexterity was first outlined by Duncan (1967) and March (1991) in the field of organizational theory. Traditionally it was considered that firms tend to concentrate either on capabilities for exploitation or exploration (March 1991, cited in Wulf, 2010). Ambidexterity represents the approach by which organizations need to be effective in managing their today’s business demands and at the same time develop flexibility in adapting to new challenges and opportunities in the environment (Gibson, Birkinshaw, 2004).

In organizational framework, it is important to provide balance of organizational characteristics that allow for simultaneous flexibility and efficiency (Raisch and Birkinshaw, 2008, p. 380). In this context, ambidexterity is the ability of firms to manage complex organizational relations that enable short-term efficiency and long-term innovation (Tushman and Oreilly, 1996). Research on organizational ambidexterity often intertwines various areas: organizational learning, technological innovations (incremental vs. radical), organizational
adaptation (balance between continuity and change), strategic management (planned vs. autonomous strategic processes) and organizational design (efficiency vs. flexibility) (Wulf et al., 2010). Ambidexterity studies show that organizations that are able to achieve a high-level balance between exploitation and exploration will be more successful than others (He and Wong, 2004; Lubatkin et al., 2006; Wulf et al., 2010). Having focus just on one aspect can jeopardize the firm’s performance. For example, emphasis on short-term performance can result in obsolescence of organizational competences and inability of taking advantage of new business opportunities. Excessive focus on long-term success can cause a constant examination of organizational abilities and skills, which can lead to exorbitant and unnecessary changes and resource wastage. Obviously, achieving the right balance is a very complex challenge and has been referred to as “central paradox of administration” (Thompson, 1967, cited in Wulf, 2010). Consequently, ambidextrous organisations are complex organizations composed of multiple internally inconsistent architectures that are collectively capable of operating simultaneously for short-term efficiency as well as long-term innovation (O'Reilly and Tushman, 2004; Tushman and O'Reilly, 1996).

There are many papers on ambidextrous organizations and their related ability to manage opposites between continuity and change (e.g. Raisch, Birkinshaw, 2008; He, Wong, 2004; Lubatkin et al., 2006). However, a small number of papers is concerned with the ambidexterity of SMEs, and “A Small Business is not a Little Big Business” (Welsh, White, 1981), which unfolds a new stream of research in this sector.

Given the evident resource constraints in SMEs, there are some opinions that these firms must decide between operational efficiency and long-term success. Small businesses do not have the potential of a large firm to structurally and organizationally separate activities exclusively aimed at building new opportunities for long-term success in a special business unit. For that reason, the role of a manager and manager’s team in stimulating ambidexterity is crucial to SMEs (Lubatkin et al., 2006, p. 647). Their managers concurrently practice both entrepreneurial and operational roles. From the research perspective, the presence of organizational ambidexterity in SMEs should be observed in the context of the entrepreneur’s ambidextrous orientation or contextual ambidexterity. Entrepreneurs who demonstrate ambidextrous orientation initiate, encourage, reward and promote activities beyond existing, operational processes in order to pursue possibilities for exploration and exploitation of new business opportunities in the future. This is consistent with the previously mentioned area of contextual ambidexterity. In this research, contextual ambidexterity will be measured as an entrepreneur’s individual orientation which should indicate the flexibility of entrepreneur to reconcile different approaches to managing business: directing daily, operational efficiency and simultaneous exploration of new opportunities and perceiving potential opportunities (Gibson and Birkinshaw, 2004.; adapted from Young, 2009, p. 263).

In addition to contextual ambidexterity, this research also includes the aspect of strategic ambidexterity. The area of strategic management in
SMEs differs in relation to large firms and there is still no uniform theoretical framework which would explain the specificity of SMEs’ strategic behaviour. However, research has shown that SMEs with higher levels of strategic awareness have significantly higher longevity and its related performance. Strategic ambidexterity in this paper is examined as a variety of strategic activities within the existing and new strategic processes. According to Lubatkin et al. (2006, 649) these processes have similar content in small and large firms, but the obstacles encountered by SMEs are different.

Although, there are studies that have tested the effect of organizational ambidexterity on performance of the SMEs (e.g. Gibson, Birkinshaw, 2004; He, Wong, 2004), this correlation is not yet entirely theoretically clarified nor consistently empirically confirmed. This research will determine the joint and individual impact of contextual and strategic ambidexterity on the success of the surveyed SMEs.

Following, the results of the empirical research conducted among 190 SMEs in Croatia will be presented.

3. RESEARCH METHODOLOGY AND RESULTS

The purpose of this research is to identify the key features of organizational ambidexterity in the surveyed SMEs in the Republic of Croatia, and the correlation and impact of organizational ambidexterity on the performance of the firms. The method used in the research was a survey conducted as online questionnaire. The owners/entrepreneurs were contacted by e-mail with the request to fill in questionnaire accessed by the provided hyperlink. The database of the Financial Agency (FINA) was used for gathering information about the SMEs. It contained details of industry, number of employees, company size and headquarters. A request for participation in the study was sent at 1500 e-mail addresses selected by random sampling method. The rate of return was 11.5%, and the final research sample consisted of 190 enterprises, specifically 156 small- and 34 middle-sized enterprises. The research population included established small- and medium-sized enterprises (with 10 and more employees, and working for at least 7 years). Micro enterprises (companies with fewer than 10 employees) were excluded from the research population. In order to determine the potential of the surveyed firms, the questionnaire offered an option for the respondents to designate their firm as an innovative, high-tech or fast-growing enterprise. A total number of 46 (25%) firms were classified into one or more of the aforementioned categories.

The study of organizational ambidexterity was conducted by examining two groups of statements. The first group refers to the research of the entrepreneur’s ambidextrous orientation (contextual ambidexterity) and it included 5 statements (adapted from Young, 2009). The second group of statements pertains to the research of strategic ambidexterity, of which the first 6 statements investigated the efficiency of existing strategic processes, while the
other 6 statements explored the innovative potential of future strategic activities (Lubatkin et al., 2006). In further analysis, *strategic ambidexterity* (based on Wulf et al., 2010) will be used as an integrated construct.

The performance measures were depicted by statements in two categories. The entrepreneur’s perception of the firm’s success was measured by 3 statements describing its satisfaction (Davidsson, 1991; Hall, 1994; 1995; Young, 2009). Business performance measures comprised of 6 statements describing the level of various business performance areas in the surveyed firms (adapted from Gupta, Govindarajan, 1984; Young, 2009).

The statements were rated on a scale of 5 grades, with 1 representing the lowest rating (total disagreement with the statement), and 5 was the highest rating (total agreement with the statement).

The results of descriptive statistics - Organizational ambidexterity and performance of the surveyed firms

A descriptive analysis of the explored attitudes on contextual and strategic ambidexterity in SMEs can be found in the table below:

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Variables (statements)</th>
<th>Mean</th>
<th>Mod</th>
<th>St. deviation</th>
<th>Coeff. of skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTEXTUAL AMBIDEXTERITY</strong></td>
<td>3.52</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA1 Our management sometimes cause people to waste resources on unproductive activities.</td>
<td>2.82</td>
<td>2</td>
<td>1.210</td>
<td>.088</td>
</tr>
<tr>
<td>CA2 Our people often end up working at cross-purposes because they are given conflicting objectives.</td>
<td>3.15</td>
<td>4</td>
<td>1.253</td>
<td>-.145</td>
</tr>
<tr>
<td>CA3 Our firm encourages its people to challenge traditions and current practises.</td>
<td>3.97</td>
<td>4</td>
<td>.981</td>
<td>-.923</td>
</tr>
<tr>
<td>CA4 Management is flexible enough to allow the firm to respond to changes in markets.</td>
<td>3.84</td>
<td>4</td>
<td>1.064</td>
<td>-.841</td>
</tr>
<tr>
<td>CA5 If there is a shift in our business priorities, the firm can evolve rapidly to meet the change.</td>
<td>3.86</td>
<td>4</td>
<td>1.009</td>
<td>-.752</td>
</tr>
<tr>
<td><strong>STRATEGIC AMBIDEXTERITY</strong></td>
<td>3.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA1 Commits to improve quality and lower cost</td>
<td>3.50</td>
<td>3</td>
<td>.996</td>
<td>-.032</td>
</tr>
<tr>
<td>SA2 Continuously improves the reliability of its products and services</td>
<td>3.99</td>
<td>4</td>
<td>.858</td>
<td>-.804</td>
</tr>
<tr>
<td>SA3 Increases the levels of automation in its operations</td>
<td>3.38</td>
<td>3</td>
<td>1.081</td>
<td>-.307</td>
</tr>
<tr>
<td>SA4 Constantly surveys existing customers’ satisfaction</td>
<td>4.11</td>
<td>4</td>
<td>.838</td>
<td>-.975</td>
</tr>
<tr>
<td>SA5 Fine-tunes what it offers to keep its current customers satisfied</td>
<td>4.21</td>
<td>4</td>
<td>.813</td>
<td>-1.110</td>
</tr>
</tbody>
</table>
Reliability test was also performed, and Cronbach’s alpha is 0.682 for contextual ambidexterity and 0.859 for strategic ambidexterity, which indicates the acceptable and high reliability of the applied instrument.

Contextual ambidexterity is rated relatively high with considerably higher ratings of statements that measure orientation to new solutions and flexibility (statements CA3, CA4, CA5). In the scope of strategic ambidexterity, the highest average ratings were given to statements related to the firm’s orientation towards adjusting the offerings for existing customers (SA5; 4.21), increasing the satisfaction of existing customers (SA4; 4.11) and focusing on expansion of the customer base (SA6; 4.09). The lowest ratings received statements that describe the firm’s orientation towards aggressive entry into new market segments (SA11; 2.83), focus on new customer groups (SA12; 3.47) and focus on cost-cutting (SA1; 3.50).

Below, the average ratings of the investigated variables of organizational ambidexterity will be compared with the ratings awarded by the firms in the category with the potential (high-technology, fast-growing, highly innovative) and compared to other firms. Statistical significance of the difference in ratings will be provided.
<table>
<thead>
<tr>
<th>Variables (statements)</th>
<th>All firms in the sample (Median)</th>
<th>Firms with potential (Median)</th>
<th>Other firms (Median)</th>
<th>t-test</th>
<th>Sig (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTEXTUAL AMBIDEXTERITY</strong></td>
<td>3.53</td>
<td>3.77</td>
<td>3.45</td>
<td>2.597</td>
<td>.010</td>
</tr>
<tr>
<td>CA1 Our management sometimes cause people to waste resources on unproductive activities.</td>
<td>2.82</td>
<td>2.87</td>
<td>2.80</td>
<td>.346</td>
<td>.730</td>
</tr>
<tr>
<td>CA2 Our people often end up working at cross-purposes because they are given conflicting objectives.</td>
<td>3.15</td>
<td>3.09</td>
<td>3.17</td>
<td>.408</td>
<td>.684</td>
</tr>
<tr>
<td>CA3 Our firm encourages its people to challenge traditions and current practises.</td>
<td>3.97</td>
<td>4.35</td>
<td>3.85</td>
<td>3.081</td>
<td>.002</td>
</tr>
<tr>
<td>CA4 Management is flexible enough to allow the firm to respond to changes in markets.</td>
<td>3.84</td>
<td>4.30</td>
<td>3.69</td>
<td>4.557</td>
<td>.000</td>
</tr>
<tr>
<td>CA5 If there is a shift in our business priorities, the firm can evolve rapidly to meet the change.</td>
<td>3.86</td>
<td>4.22</td>
<td>3.75</td>
<td>3.289</td>
<td>.001</td>
</tr>
<tr>
<td><strong>STRATEGIC AMBIDEXTERITY</strong></td>
<td>3.68</td>
<td>4.00</td>
<td>3.58</td>
<td>3.541</td>
<td>.001</td>
</tr>
<tr>
<td>SA1 Commits to improve quality and lower cost</td>
<td>3.50</td>
<td>3.54</td>
<td>3.49</td>
<td>.339</td>
<td>.735</td>
</tr>
<tr>
<td>SA2 Continuously improves the reliability of its products and services</td>
<td>3.99</td>
<td>4.22</td>
<td>3.92</td>
<td>2.040</td>
<td>.043</td>
</tr>
<tr>
<td>SA3 Increases the levels of automation in its operations</td>
<td>3.38</td>
<td>3.74</td>
<td>3.27</td>
<td>2.932</td>
<td>.004</td>
</tr>
<tr>
<td>SA4 Constantly surveys existing customers’ satisfaction</td>
<td>4.11</td>
<td>4.24</td>
<td>4.07</td>
<td>1.197</td>
<td>.233</td>
</tr>
<tr>
<td>SA5 Fine-tunes what it offers to keep its current customers satisfied</td>
<td>4.21</td>
<td>4.28</td>
<td>4.18</td>
<td>.740</td>
<td>.460</td>
</tr>
<tr>
<td>SA6 Penetrates more deeply into its existing customer base</td>
<td>4.09</td>
<td>4.26</td>
<td>4.03</td>
<td>1.414</td>
<td>.159</td>
</tr>
<tr>
<td>SA7 Looks for novel technological ideas by thinking „outside the box“</td>
<td>3.77</td>
<td>4.43</td>
<td>3.56</td>
<td>5.907</td>
<td>.000</td>
</tr>
<tr>
<td>SA8 Bases its success on its ability to explore new technologies.</td>
<td>3.66</td>
<td>4.37</td>
<td>3.43</td>
<td>5.527</td>
<td>.000</td>
</tr>
<tr>
<td>SA9 Creates products or services that are innovative to the firm</td>
<td>3.59</td>
<td>4.35</td>
<td>3.35</td>
<td>6.072</td>
<td>.000</td>
</tr>
<tr>
<td>SA10 Looks for creative way to satisfy its customers’ needs</td>
<td>3.61</td>
<td>3.91</td>
<td>3.51</td>
<td>2.315</td>
<td>.022</td>
</tr>
<tr>
<td>SA11 Aggressively ventures into new market segments</td>
<td>2.83</td>
<td>2.98</td>
<td>2.78</td>
<td>1.000</td>
<td>.318</td>
</tr>
<tr>
<td>SA12 Actively targets new customers groups</td>
<td>3.47</td>
<td>3.67</td>
<td>3.41</td>
<td>1.334</td>
<td>.184</td>
</tr>
</tbody>
</table>

*Source: research.*
Contextual ambidexterity in firms with the potential for the last three statements (CA3, CA4 and CA5) that describe the entrepreneur’s orientation towards encouraging new solutions by employees, flexibility of the management team for change and flexibility of the firm was rated higher statistically significant. Concerning strategic ambidexterity, firms with potential have given higher grade to all statements. The statistical significance of higher ratings is confirmed for statements describing the focus of the firm with potential on the steadily increase of reliability of its products and services (SA2), increase level of automation of operational process (SA3) and focus on new technology solutions and overall new technology (SA7 and SA8) and focus on promoting creativity and innovation (SA9 and SA10).

The average ratings of composite variables of contextual and strategic ambidexterity display statistically significant higher ratings of firms with potential. This indicates their higher level of organizational ambidexterity.

In continuation, the analysis of performance was conducted in the surveyed firms. During the formulation of the questionnaire the performance measures were divided into two groups: entrepreneurial performance (EP) and business performance (PRF). Cronbach’s alpha of entrepreneurial performance measures in the surveyed firms is 0.705 and shows a high reliability of measurement, while business performance measures scored 0.914 and represent a very high reliability of measurement scale.

The average value of entrepreneurial performance demonstrates that entrepreneurs or responsible individual in the surveyed firms evaluate customer satisfaction (EP1) with the highest score (4.10), followed by employee satisfaction (EP2, 3.60), and the lowest grade was given to the satisfaction of the owner’s financial performance (EP3, 3.07). Business performance trends in all segments were rated slightly above the 3, which marked the stagnation of business performance over the past two years. This depicts a slight growth in all aspects of business over the past period.

The comparison of average performance ratings in firms with potential in relation to other firms demonstrates that customer satisfaction (EP1) and employee satisfaction (EP2) are significantly higher rated for firms with potential, while owner satisfaction (EP3) is rated higher, but without evidence of statistically significant difference. All business performance indicators are significantly higher rated in firms with potential and display slight growth in the past period. The evaluation of business performance in other firms stagnates with very small deviations from the average rating. The level of achievement of the strategic goals (SG1) in firms with potential is also evaluated significantly higher.
Descriptive analysis of entrepreneurial and business performance and t-test for independent samples (firms with potential and other firms)

<table>
<thead>
<tr>
<th>Variable (tvrdnje)</th>
<th>All firms in the sample (Mean)</th>
<th>Firms with potential (Mean)</th>
<th>Other firms (Mean)</th>
<th>t-test</th>
<th>Sig (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entrepreneurial performance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EP1 Our firm is achieving a high level of customer satisfaction.</td>
<td>4.10</td>
<td>4.37</td>
<td>4.01</td>
<td>2.651</td>
<td>.009</td>
</tr>
<tr>
<td>EP2 Our firm is achieving a high level of employee satisfaction.</td>
<td>3.60</td>
<td>3.85</td>
<td>3.52</td>
<td>2.563</td>
<td>.012</td>
</tr>
<tr>
<td>EP3 The financial stakeholders of our firm are very satisfied.</td>
<td>3.07</td>
<td>3.33</td>
<td>2.99</td>
<td>1.771</td>
<td>.078</td>
</tr>
<tr>
<td><strong>Business performance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRF1 Monthly cash flow</td>
<td>3.04</td>
<td>3.48</td>
<td>2.90</td>
<td>3.025</td>
<td>.003</td>
</tr>
<tr>
<td>PRF2 Gross profit margin</td>
<td>3.11</td>
<td>3.63</td>
<td>2.94</td>
<td>3.410</td>
<td>.001</td>
</tr>
<tr>
<td>PRF3 Total sales revenue</td>
<td>3.31</td>
<td>3.87</td>
<td>3.13</td>
<td>3.803</td>
<td>.000</td>
</tr>
<tr>
<td>PRF4 Number of fulltime staff changing</td>
<td>3.22</td>
<td>3.74</td>
<td>3.06</td>
<td>4.298</td>
<td>.000</td>
</tr>
<tr>
<td>PRF5 Change in market share of your firm</td>
<td>3.15</td>
<td>3.72</td>
<td>2.97</td>
<td>5.232</td>
<td>.000</td>
</tr>
<tr>
<td>PRF6 Sales from repeat customers</td>
<td>3.29</td>
<td>3.74</td>
<td>3.15</td>
<td>3.768</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Strategic goals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SG1 Our strategic goals are achieved in accordance with our plans and expectations.</td>
<td>3.26</td>
<td>3.61</td>
<td>3.15</td>
<td>2.785</td>
<td>.006</td>
</tr>
</tbody>
</table>

Source: research.

In conclusion, the results of the descriptive statistics indicate that there is a relatively high level of organizational ambidexterity in the surveyed SMEs, with somewhat significantly higher ratings of strategic than contextual ambidexterity. In firms with potential, both measured aspects of organizational ambidexterity are significantly higher rated in comparison to other firms. The analysis of performance and the level of achievement of the strategic goals suggest that in firms with potential all measured aspects of performance are significantly higher assessed.

**Results of correlation and regression analysis**

Correlation can be described as compliance in the variation of the value of two (or more) variables. It designates the correlation between variables. The following table shows the correlation between contextual and strategic ambidexterity with entrepreneurial and business performance measures and
with the level of achievement of strategic goals. The correlation of contextual ambidexterity with the achieved strategic goals ($r = 0.410, p = 0.000$) and with entrepreneurial performance measures ($r = 0.530, p = 0.000$) is significant, but with business performance measures there is a weak correlation ($r = 0.250, p = 0.000$).

The correlation between the strategic ambidexterity and the achieved strategic goals ($r = 0.435, p = 0.000$) and entrepreneurial performance ($r = 0.468, p = 0.000$) is significant, and with business performance there is also weak correlation ($r = 0.246, p = 0.000$).

Table 4

<table>
<thead>
<tr>
<th></th>
<th>CA</th>
<th>SA</th>
<th>EP</th>
<th>PRF</th>
<th>SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contextual ambidexterity</td>
<td>1</td>
<td>.373**</td>
<td>.530**</td>
<td>.250**</td>
<td>.410**</td>
</tr>
<tr>
<td>Strategic ambidexterity</td>
<td>.373**</td>
<td>1</td>
<td>.468**</td>
<td>.246**</td>
<td>.435**</td>
</tr>
<tr>
<td>Entrepreneurial performance</td>
<td>.530**</td>
<td>.468**</td>
<td>1</td>
<td>.435**</td>
<td>.544**</td>
</tr>
<tr>
<td>Business performance</td>
<td>.250**</td>
<td>.246**</td>
<td>.435**</td>
<td>1</td>
<td>.479**</td>
</tr>
<tr>
<td>Strategic goals</td>
<td>.410**</td>
<td>.435**</td>
<td>.544**</td>
<td>.479**</td>
<td>1</td>
</tr>
</tbody>
</table>

** significance level $p=0.000$

Source: research.

It can be concluded that there is a correlation between organizational ambidexterity and business success in the surveyed SMEs. The results of the regression analysis will be summarized below with the aim of determining the effect of organizational ambidexterity on the business success of the investigated firms.

Results of the three regression analysis are summarized in the table 5. In all models, prediction variables are contextual and strategic ambidexterity, and dependent variables are in the first model the entrepreneurial performance variables, in the second model business performance, and in the third model they are representing strategic goals.

The coefficient of determination in Model 1, where the impact of strategic and organizational ambidexterity on entrepreneurial performance measures ($R^2 = 0.366$) was tested, indicates that variables in the model share 36.6% of common factors, i.e. 36.6% of the variance (information) of entrepreneurial performance measures can be explained by the variables of contextual and strategic ambidexterity. Coefficient of determination in Model 2, where the impact of strategic and organizational ambidexterity on business performance measures ($R^2 = 0.090$) has been tested, suggests that variables in the model share 9% of common factors, i.e. 9% of the variance (information) of business performance measures can be explained by the variables of contextual
and strategic ambidexterity. The coefficient of determination in Model 3, where the impact of strategic and organizational ambidexterity on strategic objectives \( (R^2 = 0.261) \) was tested indicates that variables in the model share 26.1% of common factors, i.e. 26.1% of variance (information) of strategic goals can be explained by variables of contextual and strategic ambidexterity. Beta coefficients do not point to a significant difference between the impacts of two investigated aspects of organizational ambidexterity. In Model 1 contextual ambidexterity \( (ß = 0.433) \) has somewhat greater impact compared to strategic ambidexterity \( (ß = 0.335) \). Model 3 demonstrates slightly greater impact of strategic ambidexterity \( (ß = 0.451) \) in comparison to contextual ambidexterity \( (ß = 0.391) \). These differences can be explained by the fact that contextual ambidexterity represents the entrepreneur’s individual ambidextrous orientation and thus significantly influences its satisfaction with the business success. Strategic ambidexterity has, as expected, shown greater impact on the achievement of strategic goals.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R² Square</th>
<th>Adjusted R²</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.605</td>
<td>0.366</td>
<td>0.359</td>
<td>0.614</td>
<td>2.07</td>
</tr>
<tr>
<td>2</td>
<td>0.300</td>
<td>0.090</td>
<td>0.080</td>
<td>0.976</td>
<td>1.899</td>
</tr>
<tr>
<td>3</td>
<td>0.510</td>
<td>0.261</td>
<td>0.253</td>
<td>0.850</td>
<td>1.938</td>
</tr>
</tbody>
</table>

1. Predictors: (constant). SA i CA; Dependent Variable: PPC
2. Predictors: (constant). SA i CA; Dependent Variable: PRF
3. Predictors: (constant). SA i CA; Dependent Variable: SP

Source: research.

The success of prediction using regression model was tested by analysis of variance. It was found that the results of all models are statistically significant.

The conclusion can be formulated on the basis of presented results that confirm the assumed link between organizational ambidexterity and the performance of the investigated SMEs. The results of regression analysis show that organizational ambidexterity has a significant impact on entrepreneurial performance measures and the achievement of the strategic goals of the investigated SMEs. The impact on business performance measures is statistically significant, but small. These findings underline the importance of the ambidextrous approach in the sector of small- and medium-sized enterprises. Contextual ambidexterity emphasizes the need for entrepreneur’s orientation towards operational efficiency and the development of future potential in parallel. Strategic ambidexterity accentuates the need to use a variety of
strategic choices within current and future strategic activities. It is apparent that ambidexterity is one of the important factors of SMEs’ success. But, it can not be applied in SMEs structurally and organizationally by separating exploitative and exploration processes. In SMEs entrepreneur develops an ambidextrous context by undertaking operations efficiently and simultaneously thinking of strategic development. Employees adopt this way of thinking and working. SMEs can thus overcome some of its key weaknesses, namely resource constraints and the development of long-term strategic focus.

4. CONCLUSION

The research area of SMEs’ performance factors is always current and yet not sufficiently conceptually encompassed field. One of the factors that could help SMEs increase their chances of success is ambidexterity. The theoretical part of this paper attempted to clarify the notion of ambidexterity in the context of organizational theory and specificity in the sector of small- and medium-sized enterprises. Ambidexterity generally represents the firm’s ability to simultaneously engage in its operational and developmental processes with success. Unlike large firms, small businesses are not able to organizationally separate developmental processes. The entrepreneur’s ambidextrous orientation is a key factor in the development of ambidexterity in SMEs. This paper also includes the aspect of strategic ambidexterity because of the assumption that SMEs with more pronounced strategic development potential are more successful.

Empirical part of this paper contains the analysis of the study conducted in 190 Croatian SMEs. Descriptive analysis suggests a relatively high level of organizational ambidexterity in the researched SMEs, with strategic ambidexterity more pronounced than contextual. Statements pertaining to the development of existing business activities in relation to the development of new business have been rated higher. In the firms with potential (fast-growing, high-tech and innovative SMEs), organizational ambidexterity, as well as organizational performance and the level of achievement of strategic goals are evaluated with higher grades significantly. The correlation analysis results show a significant correlation between the variables of organizational ambidexterity and entrepreneurial performance measured by the entrepreneur’s satisfaction and the level of achievement of strategic goals. Relationship with business performance measures is statistically significant, but small. Regression analysis has shown significant influence of organizational ambidexterity on the performance of the researched SMEs. This confirms the importance of ambidexterity as one of the factors of SMEs’ success.

Future research streams should focus on conducting high-quality, in-depth studies using a case study method that would further clarify the specificity of the ambidextrous processes in SMEs.
REFERENCES


FINANCE
EMPIRICAL RESEARCH ON THE ACCOUNTING AND FINANCE STUDENTS’ OPINION ABOUT THE PERSPECTIVE OF THEIR PROFESSIONAL TRAINING AND CAREER PROSPECTS

Preliminary communication
UDK: 657-057.875:303.62
JEL classification: I21, J24, K38,

Abstract

The present paper focuses on studying, recording and presenting the point of view of Accounting and Finance students about their career opportunities and prospects. We considered obvious to make a correct and complete recording, in order to realize how much they are interested in their specialty and determined to follow a career based on their field of studies. Provided they are, they are supposed to be aware of their professional rights, as well as how easy it is for them to be absorbed into the labor market. In our days that the economic crisis affects our country and finding a job is very difficult, students will be supposed to know if they really want to deal in the professional sector and how much the object of their work will offer them a decent life in the society. Data were collected through questionnaires addressed to a sample of students.
Apart from a report concerning the profession of accountant, this work provides a short presentation of our institution Easter Macedonia and Thrace Institute of Technology (TEI EMTh) department of Accounting and Finance.

**Keywords:** accounting, professional rights, economic crisis

1. **INTRODUCTION**

Greece has been suffering from serious economic problems during the years of financial crisis, such as decrease of income and high rates of unemployment (OECD, 20016; European Parliament, 2013). One of the major economic hardships of a country is that of high unemployment, especially among young people searching for a job (International Labour Organization, 2014a; International Labour Organization, 2014c). Graduates of higher education institutions face a great number of difficulties in finding a job, mainly because of high competition and fewer jobs in the market (Shumilova et al., n.d.). This results in brain drain, as many graduates decide to go abroad in order to find a job relevant to their field of studies or to simply search for any kind of job to earn their living. However, according to the Association of Chartered Certified Accountants 2016, due to the fact that the global economy is fast changing, the accountancy profession will always be both necessary and rewarding, provided that its members have the knowledge, skills and abilities to help organisations sustain economic growth and compete nationally and internationally (Association of Chartered Certified Accountants, 2016). Therefore, it is necessary for the graduates of the Accounting and Finance Departments to be properly prepared and receive all the necessary qualifications in order to cope with the difficulties and needs of the market.

The purpose of this work is to record and evaluate the Accounting and Finance department students’ point of view concerning the relation between their studies and career opportunities and prospects. Besides, we tried to explore students’ awareness of their professional rights, as well as their intention to follow postgraduate studies after graduation. We also aimed at discovering the case of receiving different opinions between male and female students.

The paper is divided into five sections. After first section, in the second section we provide a short introduction of the department of Accounting and Finance, TEI EMTh; in the third we state our methodology, while in the fourth we indicate the results of our research. Finally, in the fifth section we make our conclusions.

2. **DEPARTMENT OF ACCOUNTING AND FINANCE, TEI EMTH**

2.1. **Some general and historical data**

The Department of Accounting and Finance, TEI EMTh (formerly TEI of Kavala) is among the first departments founded in the particular Institution.
As TEI of Kavala’s facilities were originally located in leased buildings around Kavala, our department initially operated in the premises of St. Silas area, and in 1992 it was transferred to the new main campus in St. Lukas. It is also the largest Department in the TEI as there are almost 3,500 enrolled students in it, while the number of students who actively participate in the educational process is around 2,100 (Department of Accounting and Finance TEI EMTh, 2017a).

The progress of the department and its standards of educational values are the basic reasons why it is one of the best in Greece. It is no coincidence that the Accounting and Finance department of TEI EMTh is the first choice for a significant number of university student candidates, nor is the fact that, despite the implementation of the “base grade 10” for entering tertiary education, all the positions available by the department are covered every year (Department of Accounting and Finance TEI EMTh, 2017a).

In addition to undergraduate education, the department offers the possibility of further specialization in postgraduate studies in three postgraduate programs. Despite the fact that the particular postgraduate studies programs have been operating for less than six years, the department has already succeeded in gaining the appreciation and admiration not only of the academic community but also of the employers (Department of Accounting and Finance TEI EMTh, 2017a).

2.2. **TEI graduates and job prospects**

Accounting and Finance Department graduates of the School of Management and Economics of Institutes of Technology, based on their specialized scientific and technical knowledge, get involved either in collaboration with other scientists or independently as Accountants in the private or public sector.

Specifically, they can work as:

- Assistant accountants initially, and later as accountants.
- Cost accountants
- Tax consultants
- Auditors
- Financial Managers
- Administrators
- Investment and Finance Consultants
- Financial Analysts
- Business Computerization consultants
- As lecturers at TEIs and vocational Lyceums
- As teachers in secondary Technical Vocational Schools

The graduates’ development progresses over the whole range of accounting hierarchy. They obtain license to act as accountants or tax
consultants, in accordance with the provisions of Presidential Decree 340/98, which was issued on the basis of Law 2515/97 (e-forologia, 2017; Department of Accounting and Finance TEI EMTh, 2017a).

3. RESEARCH METHODOLOGY

Our survey was conducted in April 2014 with the use of a questionnaire created for this purpose, which consisted of 17 multiple choice questions and was divided into three parts. The first part included demographic data; the second referred to the effectiveness of education in the specific department, and the third one to professional prospects. The questionnaires were sent either by email or Facebook, or distributed by hand. Data analysis and processing was performed with the IBM’s SPSS v17 with descriptive statistics. Absolute and relative frequencies (%) and averages were calculated.

4. RESULTS

Eighty students from the Accounting and Finance Department of the TEI EMTh participated in the survey. More specifically, out of 80 respondents, 30 were men (37.50%) and 50 women (62.50%), (see, Table 1).

Table 1

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEN</td>
<td>30</td>
<td>37.50%</td>
</tr>
<tr>
<td>WOMEN</td>
<td>50</td>
<td>62.50%</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100%</td>
</tr>
</tbody>
</table>

As far as the semester of study is concerned, 7.5% of the students who participated in the survey were in the second semester, 1.3% in the third, 22.5% in the fourth, 2.5% in the fifth, 16.3% in the sixth, 3.8% in seventh, 20% in last semester and finally 26.3% were students who finished their last semester but have not graduated yet (see, Table 2).

Table 2

<table>
<thead>
<tr>
<th>Semester</th>
<th>Percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd</td>
<td>7.5%</td>
</tr>
<tr>
<td>3rd</td>
<td>1.3%</td>
</tr>
<tr>
<td>4th</td>
<td>22.5%</td>
</tr>
<tr>
<td>5th</td>
<td>2.5%</td>
</tr>
<tr>
<td>6th</td>
<td>16.3%</td>
</tr>
<tr>
<td>7th</td>
<td>3.8%</td>
</tr>
<tr>
<td>8th</td>
<td>20%</td>
</tr>
<tr>
<td>Above 8th</td>
<td>26.3%</td>
</tr>
</tbody>
</table>
As far as the age of the respondents is concerned, the range was from 18 to 24 years of age. 22.5% were from 18 to 20 years old, 42.5%, from 20 to 22, 18.8% from 22 to 24 and 16.3% from 24 and above (see, Figure 1).

We note that in the following results we consider as a positive opinion the answers “I totally agree” and “I agree”, as neutral the answer “I neither agree nor disagree” and as negative opinion the answers “I totally disagree” and “disagree”. The majority of the respondents (52.6%) express a positive opinion on the curriculum of their department and its relation to the labor market, while 32.5% express neutral opinion and 15% a negative one (see, Figure 2).

In the question whether their studies provide them all the necessary skills needed in the labor market, students’ opinion is divided (see, Table 3).
Table 3

All the necessary skills needed in the labor market are provided through the educational process.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Number</th>
<th>Percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>I totally agree</td>
<td>6</td>
<td>7.5%</td>
</tr>
<tr>
<td>I agree</td>
<td>23</td>
<td>28.8%</td>
</tr>
<tr>
<td>I neither agree nor disagree</td>
<td>27</td>
<td>33.8%</td>
</tr>
<tr>
<td>I disagree</td>
<td>20</td>
<td>25%</td>
</tr>
<tr>
<td>I totally disagree</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>80</td>
<td>100%</td>
</tr>
</tbody>
</table>

The majority of respondents (47.5%) believe that after earning their accounting bachelor’s degree, they can successfully exercise the accounting profession, while 27.5% gave a negative answer and 25% were not certain about it (see, Figure 3).

Figure 3. The accounting bachelor’s degree is enough for those who want to work as accountants

The intention of the respondents to pursue postgraduate studies defer regarding gender. Men were rather positive (46.7%) to continue their studies, while only 10% were not. On the contrary, women’s answers were more divided, with 28% being positive in following a master’s program, while (33%) answered negatively (see, Figure 4).

Figure 4. Intention to follow postgraduate studies in relation with gender
Student’s intention to follow postgraduate studies abroad was also recorded in our research. The majority of the respondents (46.25%) have a neutral attitude towards the prospects of continuing their studies abroad. One out of three (36.25%) gave a positive response, while 18% of them were negative (see, Figure 5).

![Figure 5. Intention to follow postgraduate studies abroad](image)

Half of the respondents believe that employers appreciate the skills and knowledge accounting students acquire during their studies, 12.5% of them expressed a negative opinion, while 37.5% a neutral one (see, Table 4).

<table>
<thead>
<tr>
<th>Answers</th>
<th>Number</th>
<th>Percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>I totally agree</td>
<td>10</td>
<td>12.5%</td>
</tr>
<tr>
<td>I agree</td>
<td>30</td>
<td>37.5%</td>
</tr>
<tr>
<td>I neither agree nor disagree</td>
<td>30</td>
<td>37.5%</td>
</tr>
<tr>
<td>I disagree</td>
<td>10</td>
<td>12.5%</td>
</tr>
<tr>
<td>I totally disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>80</td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The majority of students (73.8%) appreciate the value of the bachelor’s degree in accounting very positively, as well as the possibilities and prospects for their future career that it provides them with. 20% of the respondents had a neutral opinion while only 6.25% a negative one (see, Table 5).
The bachelor’s degree in accounting provides job security.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Number</th>
<th>Percent Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>I totally agree</td>
<td>11</td>
<td>13.75%</td>
</tr>
<tr>
<td>I agree</td>
<td>48</td>
<td>60%</td>
</tr>
<tr>
<td>I neither agree nor disagree</td>
<td>16</td>
<td>20%</td>
</tr>
<tr>
<td>I disagree</td>
<td>5</td>
<td>6.25%</td>
</tr>
<tr>
<td>I totally disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>80</td>
<td>100%</td>
</tr>
</tbody>
</table>

Uncertainty about the students’ professional prospects, probably due to the economic crisis, is reflected on the high percentage of negative responses (“I totally disagree” and “Disagree” answers) reaching 37.5% as well as in their neutral ones, which are also 37.5%. Only 25% of the respondents (“I agree” and “I totally agree” answers) believe that their bachelor’s degree in accounting provides job security (see, Figure 6).

Figure 6. After completing your studies you will have good job opportunities

The majority of respondents (43.8%) believe that it will probably take them 1 to 2 years to find a job, 21.3% 2 to 3 years, 20% over 3 years, while only 15% of them believe they will find a job in less than 1 year. 57.5% of the students believe that their future work will be related to the subject of their studies. One further point that can be made is that 31.25% of them do not exclude the possibility of dealing with a job that is completely unrelated or only marginally related to their studies. Lastly, it is important to note that the percentage of those who exclude the possibility of finding a job completely related to their field of studies is 10.25%.

Concerning the sector of the labor market they think it will be easier for them to find a job, 61.3% of the respondents believe that it will be easier to find a job in the private sector. On the contrary, it seems that accounting students do not count on the public sector at all, as only 3.8% of them believe that it is easy
to be absorbed by it. This small percentage reflects the fact that people are aware of the impact the economic crisis has had on the public sector in recent years. Finally, 35% of the students answered that they would choose to become self-employed, and this shows that they do not exclude the profession of accountant in the future (see, Table 6).

Table 6

In which sector of the labor market do you think it will be easier to find a job?

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Number</th>
<th>Percent Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Sector</td>
<td>3</td>
<td>3,8</td>
</tr>
<tr>
<td>Private Sector</td>
<td>49</td>
<td>61,3</td>
</tr>
<tr>
<td>Self-employed</td>
<td>28</td>
<td>35,0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100,0</td>
</tr>
</tbody>
</table>

The majority of respondents (55%) have a positive view (“I agree” and “I totally agree” answers) of their professional rights. 33.75% of them express a neutral attitude, while 11.25% a negative one (“I totally disagree” and “Disagree” answers) (see, Figure 7). Based on the above percentages it is evident that students consider their professional rights sufficient to help them find a job.

5. CONCLUSIONS

Our survey has clearly shown that on the whole students regard their bachelor’s degree in accounting and finance as remarkable and trustworthy. The same is true for the curriculum of their department, which they believe meets the requirements of the labor market. As far as the educational process and resources
are concerned, their opinions differ, and therefore it is not easy for us to come to a conclusion. Also, we should mention that a fairly large percentage of students would like to continue their studies at a higher level, with some of them having in mind that they may follow a postgraduate course abroad.

With regard to their job security, students’ responses reflect the situation on the labor market. We can conclude that despite the fact that they strongly believe that their bachelor’s degree in accounting will provide them with job prospects and that employers particularly appreciate their knowledge on their subject, it will be very difficult for them to find a job easily and perhaps it will be delayed for at least 1 to 2 years. Besides, it is worth mentioning that students exclude the public sector and believe that working in the private one is more possible. Finally, students do not exclude the possibility of searching for a job abroad.

Lastly, it should be mentioned that an interesting element that has emerged from the survey is the large proportion of students who are not aware of their professional rights, even though they consider them worthwhile. We can easily conclude that this is a disadvantage for someone searching for a job, compared with a prospective employee who is aware of his professional rights and therefore can easily move towards the job market and target it successfully.

An interesting topic for further research could be the employers’ perspective on the accounting graduates and the skills they have developed during their studies, as well as a survey on their professional rights. As nowadays there is growing competition among graduates in the search for jobs, and job seekers want to secure a suitable career, another issue worth surveying could be to what extent further studies affect job security.

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Department of Accounting and Finance TEI EMTh, 2017a, The Department, accessed on 10/06/2017 from http://ad2.teikav.edu.gr/ad_en/


Abstract

Inevitably the turbulence of social events, the Black Swans, will impact the economic growth and stability significantly. The polarized media and the populism amplify this impact during the survival period of the social event. To observe the impact of the event, using the leading indices such as the volatility of the financial market is a common approach of reflecting the sensitivity of the event. In the democratic society, the presidential election is the most significant social event that gives the uncertainty of the existing political courses in many perspectives. Arguably, especially when this election occurs in a divided society, the public opinions of the major media collide with the “silent” populism, will magnify the financial turbulence drastically. Mr. Donald Trump has been considered as a black swan since he became the president candidate of the Republicans Party (GOP). Many pessimistic people speculated he would jeopardize the economy if he won the election. This paper examined the poll statistics and the stock indices; not only be this paper able to disclose how the controversial election impacted the financial market, but also to show the deviation between the polls conducted by the major media and the result of the election by rigorous analytical processes. Lastly, the proposed analytic framework can be applied to any critical social events that has financial impact or not.

Keywords: Market Dynamics, Business Analytics, Analytic Framework, Black Swan Effect
1. INTRODUCTION

A *Black Swan* event refers to a highly improbable occurrence (Taleb, 2010) (Suárez-Lledó, 2011) with the attributes of: (1) it is subjective and arguable—since the event has not occurred yet, it was usually brought out by a group of “visionary” people, and later on it become a popular saying; (2) it is impossible to predict—too many unknown or hidden factors that tangle together and could hardly prove its existence through rigorous methodology; (3) it carries a massive impact—people perceive there would be significant negative result if that event does occur; (4) its shock value is stunning owing to the ignorance of the event—the shock would impact the society and eventually devastate the economic; and (5) its potential impact is a composite effects of non-linear behaviors—people would change the attitude about the event through time.

To further elaborate the nature of the concept of such a *Black Swan*, the Figure 1 illustrates how the event is created and later evolved or decade through time. The *Opinion Group* addressed a *Black Swan* event might occur at the beginning. Such an event attracts the attention of *Public Opinion*; based on the receivers’ *Personal Interests*, people changes their attitude and take actions to respond the *Perceived Impacts*. The essence of such an event evolves owing to the accumulative effects of actions. The changed event intensifies the *Media Propagation* that also will influence the *Opinion Group* to elaborate the concept and posit the risks further; it also reinforces the acknowledgement to the *Public Opinion*. Either the impact really occurs or more important events flood into the attention, this event will eventually decade anyway. This influence loop demonstrates the non-linearity perfectly; since such an event hardly occurs, therefor it always decades through time.

![Figure 1. The Black Swan Lifecycle](image)

Mr. Donald Trump has been considered as a black swan since he became the president candidate of the Republicans Party (GOP). Many pessimistic people speculated he would jeopardize the economy, especially the financial market (Taylor & Williams, 2007), if he won the election. This paper proposes a streamlined
analytical framework, using the *Trump Black Swan* (see next paragraph) as the example, from identifying the research questions, collecting these datasets, preprocessing these datasets, to correlate the social events and the stock market.

2. **THE TRUMP BLACK SWAN**

The major media posited *Donald Trump* as a Black Swan event if he had won the presidential campaign. This paper collected the news, total 21 articles, from the following sources, the Table 1 illustrates the articles from their news media or magazines.

<table>
<thead>
<tr>
<th>Media</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>News Week</td>
<td>Why Donald Trump’s Election Victory Isn’t a “Black Swan Event” (McCabe, 2016)</td>
</tr>
<tr>
<td>Washington Times</td>
<td>Donald Trump and the Real Black Swan Event-The Actual Aberration was the Election of Barack Obama (Crowley, 2016)</td>
</tr>
<tr>
<td>Politico Magazine</td>
<td>The Black Swan President - Donald Trump Is the Biggest Unknown Ever to Take Control of the White House. What’s the Worst-case Scenario? The Best? As the Country Waits to Find out, Politico Magazine Asked 17 Experts to Game out a Trump Presidency. (Politico Magazine, 2016)</td>
</tr>
<tr>
<td>CNBC</td>
<td>‘Black Swan’ Author-Nassim Taleb Says: Don’t Worry about a Trump Presidency (Wang, 2016)</td>
</tr>
<tr>
<td>Yahoo Finance</td>
<td>Nassim Taleb: Donald Trump’s Election Win Was No ‘Black Swan’ (Roche, 2016)</td>
</tr>
<tr>
<td>Forbes</td>
<td>Debunking ‘Black Swan’ Events of 2016 (Kuznetsov, 2017)</td>
</tr>
<tr>
<td>The Week</td>
<td>Donald Trump, Black Swan (Millman, 2016)</td>
</tr>
<tr>
<td>Live Mint</td>
<td>Why 2016 Was the Year of Black Swans - While Black Swan Events Generally Have a Negative Connotation, Some of them Might Be the Harbinger of More Positive Developments in the Long Run. (Siddhu, 2017)</td>
</tr>
<tr>
<td>Rooster Global News Network</td>
<td>Understanding Brexit and Trump as Black Swan Events (Hill, 2016)</td>
</tr>
<tr>
<td>Investors</td>
<td>A Trump Win - The Black Swan of 2016? (Socas, 2016)</td>
</tr>
<tr>
<td>Psychology Today</td>
<td>Donald Trump Is a Black Swan - The Most Interesting Aspect of Trump’s Rise is its Unpredictability. (Dietrich, 2016)</td>
</tr>
<tr>
<td>The Federalist</td>
<td>Read More than Wikipedia before Declaring Trump’s Election was a Black Swan Event - Donald Trump’s Election was no Black Swan Event. The Error Here Lies in the Misunderstanding of Black Swan Probability. (McCubbin, 2016)</td>
</tr>
<tr>
<td>Stansberry Churchouse</td>
<td>The Best Hedge for a President Trump Black Swan (Iskyan, 2017)</td>
</tr>
<tr>
<td>Global Research (CA)</td>
<td>Trump and the “New Deal” of Modern Politics: Black Swans, White Sharks and Golf Diplomacy (Kampmark, 2016)</td>
</tr>
</tbody>
</table>
### Table of Articles

<table>
<thead>
<tr>
<th>Source</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre for International Governance Innovation</td>
<td>Trump is a Black Swan - The Age of Disruption: A Series about the Risks to Globalization and the Postwar Order as the 45th President of the United States is Inaugurated (Harley, 2017)</td>
</tr>
<tr>
<td>Bloomberg</td>
<td>Another Black Swan for Commodities (and Everything Else) (Denning, 2017)</td>
</tr>
<tr>
<td>Market Watch</td>
<td>Geopolitical Black Swans are the Stock Market’s Biggest Risk - Trump’s Unpredictability and Eagerness to upset the Apple Cart Raise the Chance of a Crisis-Induced Swoon (Gold, 2017)</td>
</tr>
<tr>
<td>Motley Fool</td>
<td>Is a Donald Trump Presidency a Black Swan Event for Pharma Stocks? -Donald Trump Wins! What does this Unexpected Turn of Events Mean for Pharmaceutical Stocks? (Budwell, 2016)</td>
</tr>
</tbody>
</table>

This paper conducted a series of text mining processes against the above articles to: (1) calculate the term frequency; (2) calculate the co-occurrence for each term; (3) extract keywords based on the co-occurrence; and (4) generate a word cloud map, illustrated in Figure 2, the font sizes of terms are according to their frequencies.

![Figure 2. The Word Cloud about Trump Black Swan](image)

It is obvious that many commentators discussed that Trump was a Black Swan or not, from those articles; this event could affect the global stock market, being a potential risk factor, even raising a war.

If Trump were a Black Swan, the stock market would respond to the potential risk after the polls (in favor of him) had been released. This paper hypothesizes that the stock market would be shy if Trump led Clinton in the polls. Therefore, this paper collected the quotes of the stock market and the polls history, examined the correlation between these two factors to see if the Trump
Black Swan effect did have some influence on the market as those commentators expected before.

3. THE SOURCE AND DERIVED STOCK DATASETS

The source datasets, S&P500, NASDAQ, and DJI, were collected from the Yahoo Finance\(^1\) website from 2016-01-01 to 2017-05-27. Each dataset contains the following fields: (1) Date—the transaction date; (2) Open—the beginning quote; (3) High—the highest quote; (4) Low—the lowest quote; (5) Close—the last quote; (6) AdjClose—the quote after closing; and (7) Volume—the traded quantity for the date.

The mean quotes of the S&P500 dataset are in the range from 5207.123 to 5255.360, the standard deviations are in the range from 466.753 to 479.064, and Table 2 illustrates the detail descriptive statistics.

<table>
<thead>
<tr>
<th>S&amp;P500</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>1833.400</td>
<td>2414.500</td>
<td>2166.071</td>
<td>143.958</td>
<td>20723.890</td>
<td>--0.126</td>
<td>-0.698</td>
</tr>
<tr>
<td>High</td>
<td>1847.000</td>
<td>2418.710</td>
<td>2174.447</td>
<td>141.573</td>
<td>20042.865</td>
<td>--0.096</td>
<td>-0.730</td>
</tr>
<tr>
<td>Low</td>
<td>1810.100</td>
<td>2412.200</td>
<td>2156.789</td>
<td>147.533</td>
<td>21766.112</td>
<td>--0.177</td>
<td>-0.650</td>
</tr>
<tr>
<td>Close</td>
<td>1829.080</td>
<td>2415.820</td>
<td>2166.729</td>
<td>144.354</td>
<td>20837.950</td>
<td>--0.135</td>
<td>-0.692</td>
</tr>
<tr>
<td>AdjClose</td>
<td>1829.080</td>
<td>2415.820</td>
<td>2166.729</td>
<td>144.354</td>
<td>20837.950</td>
<td>--0.135</td>
<td>-0.692</td>
</tr>
<tr>
<td>Volume</td>
<td>1.58E+09</td>
<td>7.60E+09</td>
<td>3.80E+09</td>
<td>7.28E+08</td>
<td>5.30E+17</td>
<td>1.274</td>
<td>3.520</td>
</tr>
</tbody>
</table>

The mean quotes of the NASDAQ dataset are in the range from 5207.123 to 5255.360, the standard deviations are in the range from 466.753 to 479.064, and Table 3 illustrates the detail descriptive statistics.

<table>
<thead>
<tr>
<th>NASDAQ</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>4218.810</td>
<td>6207.040</td>
<td>5231.640</td>
<td>472.475</td>
<td>223233.055</td>
<td>0.205</td>
<td>-0.865</td>
</tr>
<tr>
<td>High</td>
<td>4293.220</td>
<td>6217.340</td>
<td>5255.360</td>
<td>466.753</td>
<td>217858.129</td>
<td>0.230</td>
<td>-0.881</td>
</tr>
<tr>
<td>Low</td>
<td>4209.760</td>
<td>6196.660</td>
<td>5207.123</td>
<td>479.064</td>
<td>229502.314</td>
<td>0.176</td>
<td>-0.852</td>
</tr>
<tr>
<td>Close</td>
<td>4266.840</td>
<td>6210.190</td>
<td>5234.299</td>
<td>473.129</td>
<td>223851.059</td>
<td>0.207</td>
<td>-0.864</td>
</tr>
<tr>
<td>AdjClose</td>
<td>4266.840</td>
<td>6210.190</td>
<td>5234.299</td>
<td>473.129</td>
<td>223851.059</td>
<td>0.207</td>
<td>-0.864</td>
</tr>
<tr>
<td>Volume</td>
<td>7.68E+08</td>
<td>4.41E+09</td>
<td>1.89E+09</td>
<td>3.37E+08</td>
<td>1.13E+17</td>
<td>2.162</td>
<td>10.920</td>
</tr>
</tbody>
</table>

\(^1\) URL: https://finance.yahoo.com/
The mean quotes of the DJI dataset are in the range from 18597.221 to 18747.209, the standard deviations are in the range from 1429.090 to 1475.412, and Table 4 illustrates the detail descriptive statistics.

Table 4. The DJI Dataset Descriptive Statistics

<table>
<thead>
<tr>
<th>DJI</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>15691.620</td>
<td>21128.910</td>
<td>18673.603</td>
<td>1447.686</td>
<td>2095794.934</td>
<td>0.110</td>
<td>-0.944</td>
</tr>
<tr>
<td>High</td>
<td>15897.820</td>
<td>21169.109</td>
<td>18747.209</td>
<td>1429.090</td>
<td>2042298.350</td>
<td>0.134</td>
<td>-0.971</td>
</tr>
<tr>
<td>Low</td>
<td>15450.560</td>
<td>21051.410</td>
<td>18597.221</td>
<td>1475.412</td>
<td>2176839.425</td>
<td>0.066</td>
<td>-0.918</td>
</tr>
<tr>
<td>Close</td>
<td>15660.180</td>
<td>21115.551</td>
<td>18680.918</td>
<td>1450.573</td>
<td>2104163.047</td>
<td>0.099</td>
<td>-0.946</td>
</tr>
<tr>
<td>AdjClose</td>
<td>15660.180</td>
<td>21115.551</td>
<td>18680.918</td>
<td>1450.573</td>
<td>2104163.047</td>
<td>0.099</td>
<td>-0.946</td>
</tr>
<tr>
<td>Volume</td>
<td>4.59E+07</td>
<td>5.73E+08</td>
<td>1.71E+08</td>
<td>1.07E+08</td>
<td>1.15E+16</td>
<td>0.909</td>
<td>-0.280</td>
</tr>
</tbody>
</table>

These source datasets require additional derived fields for further analysis, the Table 5 illustrates the formulae of these derived fields: (1) Scale—the discrepancy between the highest and the lowest quote; (2) Net—the quote difference between the end and the beginning of the date; (3) Qty—the logarithm of the Volume; and (4) Score—the hypothetic value, the square root of the summation of Scale, Net, and Qty, taking the spherical distance, will be used to describe the market behavior.

Table 5. The Derived Field Formulae for Further Analysis

<table>
<thead>
<tr>
<th>Derived Field</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td>High - Low</td>
</tr>
<tr>
<td>Net</td>
<td>Close - Open</td>
</tr>
<tr>
<td>Qty</td>
<td>Log(Volume)</td>
</tr>
<tr>
<td>Score</td>
<td>$\sqrt{\frac{1}{3} \sum_{i=1}^{3} (y_i)^2}$</td>
</tr>
<tr>
<td>Normalizer(x)</td>
<td>$\frac{x_i - \min(x)}{\max(x) - \min(x)}$</td>
</tr>
</tbody>
</table>

Based on the finding of these descriptive statistical figures, apparently, the source datasets have their quote ranges respectively, therefore, to make comparisons among themselves; all quotes must be normalized first. The formula (5) shows the idea of the normalization; after the normalization, each normalized
field has the value between \( 0 \) (the minimal value) and \( 1 \) (the maximal value). This paper streamlined the above-mentioned calculation, illustrated in Figure 3.

![Figure 3. The Derived Fields Calculation Process Flow](image)

After the last step of the calculation, all field values are normalized for further analysis, Table 6 illustrates the sample result data of S&P500.

<table>
<thead>
<tr>
<th>Date</th>
<th>Open</th>
<th>High</th>
<th>Low</th>
<th>Close</th>
<th>AdjClose</th>
<th>Volume</th>
<th>Scale</th>
<th>Net</th>
<th>Qty</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-01-04</td>
<td>0.341</td>
<td>0.317</td>
<td>0.321</td>
<td>0.327</td>
<td>0.327</td>
<td>0.398</td>
<td>0.221</td>
<td>0.631</td>
<td>0.607</td>
<td>0.903</td>
</tr>
<tr>
<td>2016-01-05</td>
<td>0.352</td>
<td>0.329</td>
<td>0.334</td>
<td>0.321</td>
<td>0.321</td>
<td>0.318</td>
<td>0.210</td>
<td>0.523</td>
<td>0.526</td>
<td>0.771</td>
</tr>
<tr>
<td>2016-01-06</td>
<td>0.299</td>
<td>0.298</td>
<td>0.299</td>
<td>0.293</td>
<td>0.293</td>
<td>0.384</td>
<td>0.249</td>
<td>0.687</td>
<td>0.594</td>
<td>0.942</td>
</tr>
<tr>
<td>2016-01-07</td>
<td>0.260</td>
<td>0.257</td>
<td>0.241</td>
<td>0.217</td>
<td>0.217</td>
<td>0.490</td>
<td>0.455</td>
<td>0.453</td>
<td>0.687</td>
<td>0.940</td>
</tr>
<tr>
<td>2016-01-08</td>
<td>0.253</td>
<td>0.234</td>
<td>0.215</td>
<td>0.194</td>
<td>0.194</td>
<td>0.417</td>
<td>0.481</td>
<td>0.346</td>
<td>0.625</td>
<td>0.861</td>
</tr>
<tr>
<td>2016-01-11</td>
<td>0.229</td>
<td>0.203</td>
<td>0.183</td>
<td>0.191</td>
<td>0.191</td>
<td>0.446</td>
<td>0.506</td>
<td>0.492</td>
<td>0.650</td>
<td>0.959</td>
</tr>
<tr>
<td>2016-01-12</td>
<td>0.233</td>
<td>0.219</td>
<td>0.205</td>
<td>0.216</td>
<td>0.216</td>
<td>0.379</td>
<td>0.439</td>
<td>0.627</td>
<td>0.588</td>
<td>0.965</td>
</tr>
<tr>
<td>2016-01-13</td>
<td>0.245</td>
<td>0.219</td>
<td>0.155</td>
<td>0.133</td>
<td>0.133</td>
<td>0.485</td>
<td>0.973</td>
<td>0.000</td>
<td>0.683</td>
<td>1.188</td>
</tr>
<tr>
<td>2016-01-14</td>
<td>0.164</td>
<td>0.186</td>
<td>0.131</td>
<td>0.179</td>
<td>0.179</td>
<td>0.493</td>
<td>0.884</td>
<td>0.849</td>
<td>0.690</td>
<td>1.407</td>
</tr>
<tr>
<td>2016-01-15</td>
<td>0.124</td>
<td>0.118</td>
<td>0.106</td>
<td>0.114</td>
<td>0.114</td>
<td>0.563</td>
<td>0.462</td>
<td>0.694</td>
<td>0.744</td>
<td>1.117</td>
</tr>
</tbody>
</table>

Lastly, this paper combined these three datasets into one model, illustrated in Figure 4, the process began with the loading these collected datasets, conducted the calculation mentioned above, merged these derived datasets into one result dataset, and save that one dataset for further analysis.
To make comparisons against all Score values, the Figure 5 illustrates the line chart showing the various behaviors respectively. It is worth noting that the maximal Scores of NASDAQ and DJI occurred on the same date, 2016-06-24.
4. THE POLL DATASET

This paper collected the 2016 USA presidential election poll statistics, *Trump vs Clinton*, from *RealClearPolitics*\(^2\), the dataset covered the polls from multiple sources (total 29 sources, illustrated in Table 6) over the campaign (from 2016-01-07 to 2016-12-23, total 259 polls). The dataset consists of the follow fields: (1) Date—the poll released date; (2) *Clinton*—the percentage of favor *Clinton* polls; (3) *Trump*—the percentage of favor *Trump* polls; and (4) *Spread*—the difference between these two polls (*Trump\%* - *Clinton\%*).

<table>
<thead>
<tr>
<th>The Poll Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC News Tracking</td>
</tr>
<tr>
<td>ABC/Wash Post Tracking</td>
</tr>
<tr>
<td>Associated Press-GfK</td>
</tr>
<tr>
<td>Bloomberg</td>
</tr>
<tr>
<td>CBS News</td>
</tr>
<tr>
<td>CBS News/NY Times</td>
</tr>
<tr>
<td>CNBC</td>
</tr>
</tbody>
</table>

Based on the poll statistics, *Trump* lead 29 polls over the 259 (11.2%); the Figure 6 illustrates the comparison in a bar chart which consists of two parts, the upper and the lower parts. The upper part shows the polls that *Trump* lead; the lower part is when *Clinton* took lead. The number is the difference between the two polls. It is obvious that *Clinton* lead *Trump* in most of the polls (88.8%).

5. THE CORRELATION OF TRUMP BLACK SWANS

This paper hypothesizes that the stock market would reflect the trades negatively if Trump lead the polls next to the transaction date (mostly was tomorrow or the following business day). To analyze the correlation between the Quotes and the Polls favor Trump datasets, joining these two datasets according to their dates (the poll date and the next trading date) is essential, the Figure 7 illustrates the analytic process. The process applied the co-relation among the Scores and conducted the polynomial regression analysis to find the appropriate power of the endogenous variables, the Scores. The reason why this paper chose the polynomial approach instead of the general linear one is because the stock quotes behaves sinusoidal.

![Figure 7. The Analytic Process for Correlation](image)

The Spread values are all negative; it means the stock market reflected otherwise when Trump’s polls took lead but were not significantly correlated. The Table 8 illustrates the model statistics of the correlation.

<table>
<thead>
<tr>
<th></th>
<th>DJI</th>
<th>NASDAQ</th>
<th>S&amp;P500</th>
<th>Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>DJI</td>
<td>1</td>
<td>0.968</td>
<td>0.906</td>
<td>-0.108</td>
</tr>
<tr>
<td>NASDAQ</td>
<td>0.968</td>
<td>1</td>
<td>0.944</td>
<td>-0.099</td>
</tr>
<tr>
<td>S&amp;P500</td>
<td>0.906</td>
<td>0.944</td>
<td>1</td>
<td>-0.116</td>
</tr>
<tr>
<td>Spread</td>
<td>-0.108</td>
<td>-0.099</td>
<td>-0.116</td>
<td>1</td>
</tr>
</tbody>
</table>

To further investigate this correlation behavior, this paper conducted the regression tests and got the following model statistics, illustrated in Table 9. The polynomial exponent of 2 seems having better fitness according to the $P > |t|$ values. The coefficients show the opposite directions of these two exponents; certainly, the exponent of 1 model is linear regression which coincides with the above co-relation. In exponent of 2 model, DJI and S&P500 were favor in Trump’s poll lead, but NASDAQ was not.
The Polynomial Regression Model Statistics

| Variables | Exponent | Coeff.  | Std. Err. | t-value | P > |t| |
|-----------|----------|---------|-----------|---------|-----|----|
| Score     | DJI      | 1       | -12.134   | 25.785  | -0.471 | 0.642 |
|           | NASDAQ   | 1       | 27.059    | 25.209  | 1.073 | 0.292 |
|           | S&P500   | 1       | -4.786    | 12.896  | -0.371 | 0.713 |
| Score     | DJI      | 2       | 27.573    | 77.855  | 0.354 | 0.726 |
|           | NASDAQ   | 2       | -51.534   | 67.623  | -0.762 | 0.452 |
|           | S&P500   | 2       | 0.797     | 26.977  | 0.030 | 0.977 |
| Intercept |          |         | 1.758     | 1.149   | 1.530 | 0.137 |

If take exponent of 2 as the reference model, there is a concaved regression line of the NASDAQ and DJI respectively. The pivot points of these concaved lines show the opposite behaviors but at near the same timing, the Figure 8 illustrates these behaviors. DJI was pro-Clinton and NASDAQ was not before the pivot points; but after that, they switched the favors. The coefficient of S&P500 is too small to consider the significance.

Figure 8. The Polynomial Regression against Scores
6. THE STOCK MARKET BEHAVIOR AFTER THE ELECTION

To understand whether the Trump Black Swan effect affected the stock market or not, this paper filtered the datasets limited the trading dates after 2016-11-08 (the election completed date) but within the same November. From the line chart below, illustrated in Figure 9, the Score behavior of all the selected stocks were nearly the same for this period.

![Figure 9. The Stock Market Behavior after the Election](image)

The Table 10 shows the correlation statistics among the Scores; which substantiates the Score behaviors were almost the same.

<table>
<thead>
<tr>
<th></th>
<th>S&amp;P500</th>
<th>NASDAQ</th>
<th>DJI</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&amp;P500</td>
<td>1</td>
<td>0.865</td>
<td>0.883</td>
</tr>
<tr>
<td>NASDAQ</td>
<td>0.865</td>
<td>1</td>
<td>0.891</td>
</tr>
<tr>
<td>DJI</td>
<td>0.883</td>
<td>0.891</td>
<td>1</td>
</tr>
</tbody>
</table>

7. CONCLUSION

Many Black Swans were brought out by the media but few could give the convincing evidence to prove whether the perceived impacts were true or not. For the Trump Black Swan case, the financial market did not respond as pessimistic as previously expected. A further research question should be asked; will the political populism di-route or affect the economic course? Maybe not as solid as the perception; more substantial empirical evidences are required to prove the theory. This paper discloses a feasible and operable framework to investigate the correlation between the event and the measurable impact. However, the behavior of stock market is driven by optimistic and the
pessimistic forces; many of them are unknown. The presidential election is a significant event; the stock market might have the same behavior right after the election and yet awaiting to prove.

On the other hand, this paper did not consider the velocity (how fast the Scores changed) and the momentum (how fast that Scores velocity changed). These should disclose more insights and sensitivity about the event. But this will be the extended research direction of this paper.

REFERENCES


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INFORMATION TECHNOLOGY
DO OLDER PEOPLE BENEFIT FROM DIGITAL SERVICES?

Original scientific paper
UDK: 004-053.9
JEL classification: J14, L86, O33, Z13

Abstract

Numerous literature sources as well as practice studies evident numerous benefits enabled by information and communication technology (ICT) implementation in society. Namely, information and communication technology has been contributed to broadband access to (i) education, (ii) governance (iii) administration and public institution (iv) health and medical services, (v) touristic activity, etc. The purpose of the paper is to understand how older people have been adapted in the complex process of informatisation. In that context, the benefits of digital society for the older population will be discussed. The potentially related obstacles will be analyzed, too. Our presumption is that informatisation significantly facilitated the integration of services. The related question is: Is the mentioned process followed by inclusion or by marginalisation of older people as users? In the empirical part the comparative analysis between older population in Croatia and Belgium will be provided. In the final part the authors will integrate the theoretical presumptions with data interpretation based on the sample (n=70) collected in both countries. Data interpretation, as well as research implications are enclosed in the conclusion.

Keywords: Information and communication technologies (ICT), digital services, social inclusion, elder population
1. INTRODUCTION

Concerns about social inclusion in the information based world (also known as e-society) as well as about sharing benefits from the digital services enabled by the wide ICT integration in the society, has been already discussed for a longer period of time, and related to the different factors and inducements. Earlier, the approaches to the concerns were quite simple and based on negative effects of globalization, only (Beck, 1992, Castells, 1999). Over time, the process of social inclusion has been recognized as more complex than before. In accordance with that, the research focus related promotion of social inclusion and attention has been shifted to wider range of social resources, namely social, physical, digital and human resources (Zheng & Walsham, 2008, p. 223). Moreover, Warschauer (2002) closely related the issues of social exclusion in an information based society with the expression “digital divide“, stressing just the access to technological resources as starting point for social inclusion problem solving.

Although digital divide is discussed from various perspectives (Finn & Wright, 2011), in this research we focus on older population and follow Gilhooly et al. (2009, p. 19) consideration that “the digital divide is mainly by age”. In the context of e-society inclusion, the digital divide impedes the potential of further isolation of older people as those mainly without ICT skills, since the growing number of public, commercial, private and any other services are transferred into the Internet.

Following the above mentioned research, the intention of this study is two-sided. Firstly, we present relevant theoretical framework for outstanding area considerations, and secondly, to explore the ICT integration in two EU countries from the perspective of elderly, and thus provide an insight into the social inclusion of knowledge base of the elderly.

1.1. ICT potential and society

The ICT potential refers to different technological solutions and platforms, with the capacity to improve all human activities in the society. It includes some, even elder, ICT solutions and trends, such as (i) multicore and hybrids, (ii) cloud computing and cloud/Web platforms, (iii) user interface developments, (iv) social networks and social software, (v) Web mashups, (vi) ubiquitous computing, (vii) contextual computing, augmented reality, (viii) semantics and (ix) virtualization (Gartner Research, 2008). ICT potential also includes latest, even disruptive technologies, such as: (i) artificial intelligence and advanced machine learning, (ii) intelligent apps, (iii) intelligent things, (iv) Digital Twin, (v) blockchain and distributed ledgers, (vi) conversational system, (vii) service architecture, (viii) digital technology platforms and (ix) adaptive security architecture (Gartner Research, 2016).

In spite of quite astonishing ICT potential to serve and improve activities on supply and on demand side, Global Information Technology Report
(WEF 2015) indicates, general lag in current ICT solution recognition, as well as in its readiness to use it and apply it in the society. The stated report also indicates a certain gap between countries that use the Internet technologies and social media and, on the other side, those who do not use that ICT potential. Accordingly, the same source states that, developed countries continue to be the leading countries in the world in the context of readiness to use ICT, followed by post-transition and developing countries as the others who are still tipping.

1.1.1. ICT integration into the society

ICT arguably has the potential to provide human benefit in a number of areas in order to achieve the above and other humanistic goals. Such humanistic goals include improvement of education, provision of social and other services to the public, health, and well-being, work-life balance, environmental sustainability, democracy and self-determination, freedom, emancipation, poverty reduction, and social equity (Venable, Pries-Heje, Bunker, & Russo, 2011, p. 210). ICT acts as an integration tool that bridges people (Zheng & Walsham, 2008, p. 223), specially has the potential for elderly and other deprived groups of society to take part in social matters. There is a sense of the “imperative” – that it is increasingly a requirement, rather than a matter of choice, to own or to have easy access to a networked computer (Simon, 2006, p. 484). We take this fact for granted although it has not been like that forever. Information circulates via the internet, television, radio, books, newspapers and magazines or is transported by travelers, who help spread them. Thus, “urban/virtual tribes”, instead of staying as locally attached “tribes”, have become part of the scenery of each and every city worldwide (Rodriguez, Busco, & Flores, 2015, p. 71). During the period 2010–2014, services especially adapted for wireless communication networks had the highest entropy value and the highest binding force; and visible signaling systems were associated with several technology fields having a high potential to converge with other technology fields (Han & Young Sohn, 2016, p. 1).

Mainly the old and frail have been disenfranchised from a healthy social life. New technology promises to greatly reduce this problem (Pearson, 2006, p. 10). However, likelihood of internet engagement is shown to rapidly decrease with age, and patterns of disengagement are most pronounced amongst older people (Hill, Beynon-Davies & Williams, 2008).

Luo and Bu (2016, p. 200) present the logic that ICT enhances firm performance as important channels or facilitators of effective knowledge sharing and integration. ICT is critical investment that generates satisfactory returns for emerging economy enterprises, yet this investment–return relationship is further contingent upon the macro- and micro-level conditions facing these enterprises. ICT actually adds more value to productivity when a focal emerging economy is less economically developed, and when a focal firm reaches foreign markets or its quality control and assurance is superior (Lu & Bu, 2016, p. 200). Tutusaus, Schwartz and Smit (2016) state that organizational factors (financial and managerial autonomy), size, networks, individual factors, intrapreneurship, maturity and technological lock impact ICT’s investments and adoption.
Almerich et al. (2016) consider that technological competences influence on pedagogical competences. Hsieh and Zmud in (Aparecida de Mattos & Barbin Laurindo, 2017, p. 49) noted that, through infusion, the introduction of technology to business processes and learning can lead to innovative use of ICT. Tacit knowledge is a necessary element in enhancing innovation, but it is not sufficient, as cognitive and normative closeness may reduce the number of innovation by reducing access to new information and by reducing the ability to recognize the value of such information (Johannessen & Olsen, 2011, p. 160). Despite the promising benefits the spontaneous virtual teams can provide, they are confronted with great challenges throughout their lifecycles (Tong, Yang, & Teo, 2013, p. 361).

Information and Communication Technology’s (ICT) integration through the existence of a critical mass of Internet users allows quick diffusion of electronic communication in the medical practice, which translates as a new way to look at the doctor-patient relationship (Reis, Pedrosa, Dourado, & Reis, 2013, p. 1303). Authors also challenge the simplistic view that implementing health management information systems will translate directly to efficiency gains (Noir & Walsham, 2008, p. 313). The goal of the Internet of Things is to create an integrated ecosystem for devices to communicate over the Internet through efficient inter-operation among Device to Device communication technologies that make up the ecosystem (Bello, Zeadally, & Badra, 2017, p. 52). Vragov and Kumar (2013, p. 440) propose in their paper the policy that requires that governments should invest more in technologies that support multi-lateral communication and negotiation among citizens, and that citizens should use better voting mechanisms than simple majority voting to make decisions. Recent developments in ICT can change the way strategic organizational decisions are negotiated and voted upon (Vragov & Kumar, 2013, p. 440).

ICT (Nocentini, Zambuto, & Menesini, 2015, p. 52) constitutes suitable tools for interventions with children and adolescents promoting their emotional, psychological and social wellbeing. Recently, in the field of bullying and cyberbullying prevention, some programs started to be implemented using the benefits offered by the virtual environments (serious game, virtual reality, online platforms, internet activities, technological solution). Exposure to higher education reduces the digital divide in ICT’s usage (Zaidi, Fernando, & Ammar, 2015, p. 95). However, within the sample of battered immigrant women religiosity contributed to the increase of the digital divide and ICT’s usage (Zaidi, Fernando, & Ammar, 2015, p. 95).

Individual end-users appear to be best integrated within a virtual platform or through local public-private partnerships where they do not necessarily have to travel, to benefit from collaboration and share their views (Finn & Wright, 2011, p. 284). Lee, Son and Kim (2016, p. 51) state that in an always connected communication environment, users of social networking services (SNSs) need to pay continuous attention to the overwhelming volume of social demands from SNSs. These increased energy requirements may cause SNS fatigue, which can lead to physical and psychological strain. Using the
transactional theory of stress and coping as the overarching theory, the study of Lee et al. (2016, p. 51) regards overload (i.e., stressors) as a core determinant of SNS fatigue (i.e., strain) and identifies three dimensions of overload: information overload, communication overload, and system feature overload. Lee, Lee and Hwang (2015, p. 426) confirmed the well-known negative effect of extrinsic motivation on intrinsic motivation in the context of the ICT acceptance.

1.2. Role of Digital Services for the elderly

The growing number of the ageing population will put pressure on the social care and health care systems and will lead to a reduced availability of care staff. To deal with these challenges ICT and assistive technologies will play an important role to help people stay healthy and live independently at home for a longer time (Siegel & Dorner, 2017, p. 32).

Whilst it is encouraging that managers are generally positive about older hotel employees, older workers are still under-represented in many hospitality businesses (Jenkins & Poulston, 2014, p. 64). Older workers make less use of ICT in their job, use less complicated applications and have more difficulties in using ICT (de Koning & Gelderblom, 2006, p. 467). Elderly ICT’s empowerment is not a matter of social skills, ICT skills, or complementary skills, but is more likely to result from their being interested in ICT and ICT-based activities. Learning activities in ICT-based activities and participation frequency were found to be predictors of both meaning and competence/self-determination dimensions (Hur, 2016, p. 318). Despite increased Internet access and affordability, older people still face challenges in learning Internet skills. Country type, economic challenges and cultural beliefs need to be considered in minimizing the grey divide. Governments recognize the importance of funding such teaching but evidence-based research must continue to inform policy to maximise funding and solve the many physical age and cultural issues affecting older people’s access to Internet skills learning (Nycyk & Farooq, 2017, p. 1).

Vacek and Rybenska (2016, p. 453) state that: “Generally we can say that the older the person is the more likely it will be for him or her that the controlling, and especially the understanding, of ICT will be complicated. Other factors that may affect the ability to learn how to operate a computer and navigate in ICT can be attained from the person’s education level or economic situation, or by the fact of what kind of life the senior citizen leads. Finally, it is also necessary to take into account the problems that senior citizens often face with the very technical aspects of the device that they are trying to use. A recurring problem seems to be the fact that they don’t sufficiently understand the individual steps and principles of the use of ICT”. It is necessary to identify functions and features of ICT products and applications that fit with individual dispositional characteristics of older adults and to invest in resources to train and facilitate their understanding, autonomy, and self-realization of the benefits of ICT (Vroman, Arthanat, & Lysack, 2015, p. 165).

Communication solutions could provide beneficial effects to keep in touch with family and friends. ICT systems can give aged people the possibility
to feel less lonely by having regularly video-based talks to relatives, friends, neighbors or caregivers. In residential settings increased social support via ICT could lead to a decreased level of social isolation and depression in elderly and can have positive effects to health and satisfaction (Siegel & Dorner, 2017, p. 34). Meneses Fernandez et al. (2017, p. 342) have stated that senior citizens use ICT to find information, and that they have a need and desire to communicate with others and to be entertained.

Obviously, the rising concerns of the ICT literature became the digital divide. Although the digital divide refers primarily to the distinction between those who use ICT, such as the internet, email and mobile phones, and those who do not (Abbey & Hyde, 2009, p. 225), over time, it became one of the main ethical issues regarding ICT in society, peer to peer to the privacy, data protection, intellectual property. Forthcoming challenges to society faces with include changes to the way humans are perceived and the role of humans and technology in society. This includes changing power structures and different ways of treating humans (Stahl, 2011, p. 140).

2. EMPIRICAL RESEARCH

2.1. Research question, hypotheses and methods

The main research question set as “Are elderly included in the society”? is considered as presumption of the benefit from digital services. The related sub-questions are:

- Are the elderly using computers, Internet services, and mobile devices?
- What is their general perception (attitude) of ICT?
- How do they perceive (evaluate) own ICT skills?

In accordance with above stated, we define the main research framework based on variables such as: a) ICT usage by elderly, b) ICT perception by elderly, and c) ICT knowledge/skills perception by elderly.

With broader intention to retrieve general insight in social inclusion of elderly in Croatian and Belgium information based society, we set the following hypothesis:

The elderly in Belgium are better included in information based society than the elderly in Croatia.

The research participants are older people (i.e. 60 and more) in two country, Croatia and Belgium. Croatia and Belgium, are both European countries, with different historical and political backgrounds. Croatia is post transition developing country, still new member of European Union; Belgium, is developed country with older EU membership.

Each variable is examined by particular items associated with its nature (Table 1)
Table 1

Research variables, types and items

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Question type</th>
<th>Item (survey question)</th>
<th>Item code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT usage</td>
<td>YES/NO answers</td>
<td>Do you have own computer?</td>
<td>A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Have you ever used a computer?</td>
<td>A2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Have you ever attended any ICT related course?</td>
<td>A3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Have you ever used web searching engines?</td>
<td>A4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Have you ever use Internet banking?</td>
<td>A5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Does ICT help you in public services providing?</td>
<td>A6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Have you ever ordered products via the Internet?</td>
<td>A7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do you use electronic mail (e-mail)?</td>
<td>A8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do you have own mobile phone?</td>
<td>A9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do you have Internet access on mobile device?</td>
<td>A10</td>
</tr>
<tr>
<td>ICT persuasion</td>
<td>Accordance with the statements</td>
<td>„Internet is safe“</td>
<td>B1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>„Someone might steal my personal information over the Internet“</td>
<td>B2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>„Internet is tricky thing“</td>
<td>B3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>„My family members spend too much time at computer“</td>
<td>B4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>„The computer has a useful purpose“</td>
<td>B5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>„ICT leads to alienation and solitude“</td>
<td>B6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>„ICT is useful in education“</td>
<td>B7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>„ICT destroy health“</td>
<td>B8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>„ ICT is useful in public services“</td>
<td>B9</td>
</tr>
<tr>
<td>ICT knowledge/skills perception</td>
<td>1-5 scale use</td>
<td>General ICT literacy</td>
<td>C1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Web navigation skills</td>
<td>C2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Keyboard buttons familiarity</td>
<td>C3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social network familiarity</td>
<td>C4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Computer terminology awareness</td>
<td>C5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E-mail frequent use</td>
<td>C6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Microsoft Office tools familiarity</td>
<td>C7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Global ITC trends awareness</td>
<td>C8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internet banking familiarity</td>
<td>C9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mobil devices usage</td>
<td>C10</td>
</tr>
</tbody>
</table>

Source: Authors’ research

Within previously defined research framework, the questionnaire was used as the research instrument, containing questions relevant for the analysis of each research variables. The authors designed elemental questionnaire to cover the all main research purpose and offer answers to all research sub-questions.

To verify the hypothesis the set of 3 observed varaibles presented above in Table 1 is analyzed. The questionnaire was distributed as a voluntary option to the basic sample of 100 people. The total of 70 (70%) participants, more specifically, 35 in Croatia and 35 in Belgium fulfilled the questionnaire. For processing the collected data MS Excel 2013 is used. To test set hypotheses, descriptive statistics analysis were performed on the mentioned data set.
2.2. Research results and interpretation

The results enclosed in Table 2 present the percentage of positive answers regarding ICT usage by elderly in both country.

Table 2

<table>
<thead>
<tr>
<th>Item code</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>A5</th>
<th>A6</th>
<th>A7</th>
<th>A8</th>
<th>A9</th>
<th>A10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Croatia</td>
<td>51,4</td>
<td>54,3</td>
<td>8,6</td>
<td>57,1</td>
<td>22,9</td>
<td>45,7</td>
<td>25,7</td>
<td>51,4</td>
<td>80,0</td>
<td>42,9</td>
</tr>
<tr>
<td>Belgium</td>
<td>74,3</td>
<td>74,3</td>
<td>42,9</td>
<td>37,1</td>
<td>74,3</td>
<td>80,0</td>
<td>51,4</td>
<td>71,4</td>
<td>65,7</td>
<td>57,1</td>
</tr>
</tbody>
</table>

Source: Authors’ research, N=70

General insight in the results (Table 2) indicated that Croatian population mostly provides themselves with mobile devices (80%). It is also notable the certain familiarity with Internet search provided by using web searching engine (57,14%). The computer (54,29%) and e-mail (51,43%) is also used by more than half respondents. Furthermore, as presented in the same table, the Belgian population are recognized ICT role in public services providing (80%), owning mobile device (65,71%), using computer (74,29%) and web search engines (74%).

The results enclosed in Figure 1 indicate the significant difference in ICT usage among Croatian and Belgium older people. The Belgian older people in 8 of 10 items reveal better ICT habits comparing with Croatian people. Only web searching engine usage mobile device hold are revealed as closer to Croatian people. It means that 20% more Croatian older people practice web search and 14, 29 % more Croatian people comparing with Belgium have mobile devices. The t test value (p=0,015) approve that the elderly in Belgium are better in ICT usage than the elderly in Croatia. The visualisation of results is enclosed in Figure 1.

![Figure 1 Differencies in ICT usage by countries](image)

Source: Authors’ research, N=70
Regarding variable ICT persuasion by elderly, the results are presented below, in Table 3 numerically and Figure 2 visually:

### Table 3

<table>
<thead>
<tr>
<th>Level of accordance</th>
<th>Not agree Croatia</th>
<th>Not agree Belgium</th>
<th>Not sure Croatia</th>
<th>Not sure Belgium</th>
<th>Completely agree Croatia</th>
<th>Completely agree Belgium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item code</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>25,7</td>
<td>31,4</td>
<td>51,4</td>
<td>57,1</td>
<td>22,9</td>
<td>11,4</td>
</tr>
<tr>
<td>B2</td>
<td>8,5</td>
<td>11,4</td>
<td>34,3</td>
<td>17,1</td>
<td>57,1</td>
<td>71,4</td>
</tr>
<tr>
<td>B3</td>
<td>20</td>
<td>5,7</td>
<td>20</td>
<td>8,6</td>
<td>60</td>
<td>85,7</td>
</tr>
<tr>
<td>B4</td>
<td>28,6</td>
<td>54,3</td>
<td>17,1</td>
<td>20</td>
<td>54,3</td>
<td>25,7</td>
</tr>
<tr>
<td>B5</td>
<td>2,9</td>
<td>17,1</td>
<td>17,1</td>
<td>11,4</td>
<td>80</td>
<td>71,4</td>
</tr>
<tr>
<td>B6</td>
<td>17,1</td>
<td>14,3</td>
<td>20</td>
<td>42,9</td>
<td>62,9</td>
<td>42,9</td>
</tr>
<tr>
<td>B7</td>
<td>0</td>
<td>2,9</td>
<td>11,4</td>
<td>8,6</td>
<td>88,6</td>
<td>88,6</td>
</tr>
<tr>
<td>B8</td>
<td>22,9</td>
<td>25,7</td>
<td>28,6</td>
<td>42,9</td>
<td>48,6</td>
<td>31,4</td>
</tr>
<tr>
<td>B9</td>
<td>2,9</td>
<td>8,6</td>
<td>2,9</td>
<td>8,6</td>
<td>82,9</td>
<td>82,9</td>
</tr>
</tbody>
</table>

*Source: Authors’ research, N=70*

Furthermore, neither the Croatians (51,43%) nor the Belgians (57,14%) are quite sure if the Internet is safe or not. ICT is perceived as useful in public services (82,86%) according each country outputs. The majority of Croatians (57,15) as well as Belgians (71,43) are assured in possibility of stealing private information over Internet. Croatian elder population perceives ICT as a means with useful purpose (80%), quite close to Belgian (71,43%). The relevant percentage of Belgians (85,71%) perceive Internet as „tricky thing“, the Croatians are just a little bit less dubious (60%). Unlike the Belgians, the majority of Croatians are in accordance with the following: associated family members spend too much time at the computer (54,29%) and ICT correlate with solitude (62,86%). Usefulness of ICT in education is highly approved (88,57%) in both samples. The visualisation of differences between ICT persuasion according both countries is presented in Figure 2.

*Source: Authors’ research, N=70*
Although the differences in ICT persuasion by elderly are evident, according t tests (p>0.05) they are not statistically significant.

Processing data related to third research variable output the results presented in Table 4.

<table>
<thead>
<tr>
<th>Item code</th>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>County</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>Croatia</td>
<td>43</td>
<td>9</td>
<td>31</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Belgium</td>
<td>26</td>
<td>14</td>
<td>46</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>C2</td>
<td>Croatia</td>
<td>40</td>
<td>17</td>
<td>20</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Belgium</td>
<td>9</td>
<td>9</td>
<td>23</td>
<td>34</td>
<td>26</td>
</tr>
<tr>
<td>C3</td>
<td>Croatia</td>
<td>43</td>
<td>17</td>
<td>11</td>
<td>20</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Belgium</td>
<td>23</td>
<td>9</td>
<td>20</td>
<td>37</td>
<td>11</td>
</tr>
<tr>
<td>C4</td>
<td>Croatia</td>
<td>46</td>
<td>20</td>
<td>14</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
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Source: Authors’ research, N=70

As far as ICT knowledge/skills are considered, Belgian population assessed its own ICT knowledge/skills as average regarding 1 to 5 scale. Quite interestingly is the fact that 40% of them are highly familiar with internet banking and rate their related knowledge with the highest grade (i.e grade 5). Almost half of them (43%) rate their email using skills with the highest grade, too. The percentage of Croatian people rating their knowledge with the worst grade (i.e.grade 1) is higher than percentage of Belgians according each observed item. The visualisation of differences between ICT knowledge/skills perception according both country is present in Figure 3.
Figure 3 Differences in ICT knowledge/skills perception by countries
Source: Authors’ research, N=70

According to t test value (p=0.00) the relevant difference is present only between Croatians and Belgians regarding perception of theirs knowledge with the lowest grade (i.e. grade 1). For each other grade the difference is not statistically significant (i.e. p>0.05). Generally, the visualisation of differences (Figures 1-3) between both countries regarding all observed variables, indicates that Belgian people are more ready to new technology acceptance at the daily level.

And last, but not the least, the research results shows that 70% Belgians use Google Chrome as preferred Internet browser, while 45% Croats use Google Chrome followed by Internet Explorer (30%) and Mozzila Firefox (25%).

Among portals, such as Booking.com, Tripadvisor.com, Airbnb.com Expedia.com and Cheaptickets.com, the Booking.com is the preferred portal in each countries (35% users in Belgium and 25% in Croatia.). On the other side, 35% Croats as well as Belgians do not use any portal for accommodation reservation, while 54% Belgians and 77% Croatians do not use any on line channels namely Cheapflights.com, Kayak.com or some air company web pages, for air ticket purchasing. Finally, online shopping is also unfamiliar category regarding the both countries.

In summary, the proposed hypothesis can be accepted from the aspect of ICT usage variable, only. Regarding other two variable, the hypothesys can not be accepted, what leads to the conclusion that, although the elderly in Belgium more benefit from the digital services and thus are better included in information based society than elderly in Croatia, the differences are not statistically significant. In any case, we consider possible opportunity that some further research based on the larger sample would not necessary output the same comparative analyses results.
CONCLUSION

Brief insight in the above enclosed results indicates the presence of social inclusion process in progress. In spite the fact that the Belgian elderly reveal better and above average ICT usage comparing with Croatian elderly, both populations recognize and use ICT, mainly for business purposes, quite less as entertainment media. We consider those results as an indicator of slow, but certain shift towards having more benefits from the digital services enabled by the broad ICT integration in the society.

Furthermore, neither the Belgians neither Croatians are confident in the fact whether Internet is safe or not. This output is expected and argued as closely related with numerous ICT security problems and threats (Grimes, 2012) including hacking user profiles, cyber crime, hacktivists, malware mercenaries, intellectual property theft, all in one malware, phishing, and sometimes even compromised Web, which, unfortunately, appears on daily base globally. On the other side, Neves and Navaro (2012) study focused on how the elderly in Lisbon use and perceive ICT, the authors argue that Internet was also recognized as insecure, moreover dangerous place, by all participants, “but never conceptualized as an obstacle or a motive to prevent its usage”.

Finally, following the ICT knowledge/skills perception results, Croatia, more than Belgium has to face with the fact that relevant efforts have to be taken particularly by younger and educated people to achieve proper inclusion of elderly in information based society.

This research supports the presumption that informatisation facilitates the integration of services, just if followed with the social inclusion of all society members. Theoretical insight in ICT integration into the society as well as the role of ICT for elderly presented various aspects and approaches to social inclusion. It also highlights the complexity of an outstanding area and induce new dedicated research.

Having in mind relatively small research sample as the main research limitation we are aware that research based on the larger sample will provide less or more different results. Undoubtedly, the results of such research would enable, to a certain extent, modified research topic interpretations, such as: the majority of the elderly perceive themselves as ready to new technology acceptance; or just the opposite, the majority of the elderly present themselves as technophobic faced with numerous difficulties in e-society including lack of digital literacy or problems of accessibility and usability. Anyhow, the younger generation is expected to provide quite appropriate support to encourage elderly in information based society and help them to benefit more from digital services.

Consequently, one of the fruitful future research should be design to analyze the supporting role of younger generation in social inclusion of elderly in information based, even more sustainable, society.
REFERENCES


MARKET ANALYSIS OF THE
TELECOMMUNICATIONS MARKET – THE
CASE OF CROATIA

Abstract

The structure of the telecommunications market is an extremely important factor in the development of each country. Generally, it can be said that the structure of the market is moving from a monopoly, which initially defined the Croatian market, through liberalization into an oligopolistic market, and then finally into a market of monopolistic competition. The mobile networks industry is characteristically a natural monopoly since only a limited number of companies can remain within the market equilibrium, regardless of the size of the market. The aim of this research is to determine the characteristics and specifics of the telecommunication market in Croatia. Furthermore, by conducting an in-depth analysis of the telecommunication services in Croatia, conclusions will be drawn about the current market competitors, the marketing aspect as well as the legal regulations within this field.

Keywords: telecommunications industry, competition, regulation
1. INTRODUCTION

The structure of the telecommunications market is an extremely important factor in the development of each country. Specifically, by increasing the competition within the market, the government allows for the prices of services to decrease, making them more accessible to a broader population. It is due to telecommunications that the use of information in trading, as well as trading information, has become the paradigm of the new economy.

The aim of this research is to determine the characteristics and specifics of the telecommunication market in Croatia.

The aims of this paper are to analyze the market situation in the telecommunication services market in the Republic of Croatia, to determine the main competitors and their market shares, the concessionaires, the managing structure and their ownership shares within the market in Croatia and to determine what kind of protection is received by consumers.

The research questions that need to be addressed in this paper are the following:

1. What are the main competitors in the telecommunication services market in Croatia and what are their market shares?
2. Are there strategic alliances within this sector?
3. Are telecommunication companies in Croatia foreign or domestic?
4. What kind of consumer protection is present with regard to the oligopolistic market?

The data necessary for this research will be collected from secondary sources by browsing the Internet and Internet databases as well as the expert literature, by analyzing strategic documents, statistical data, and by conducting a primary research of the top three telecommunications operators (HT, VIPnet and Tele2).

1.1. Literature review

The Republic of Croatia belongs to the circle of transitional countries and since its independance it has commenced with the build-out of the quality information system which represents quality basis for the general economical development (Brekalo, 2008, p. 343). The telecommunications market makes a very complex and lively business environment within which business processes that ensure the efficient realization of telecommunication services need to be ensured. The business processes used in the telecommunications network for the realization of services are very complex, which is the result of a very complex business environment. In order to successfully manage such processes, a management network to ensure the necessary activities for the realization of the service is needed (Markulin, Musa, 2015, p. 670). Various telecommunication service providers operate on the telecommunications market. Operators offer users a variety of voice, image, data, and video transfer services. The rapid
advancement of telecommunications technology has led to the creation of a large number of different services (Kavran, Grgurević, Milinović, 2012, p. 64). In condition of complex and competitive telecommunication market time reaction of Telecommunication Operator in case of implementation new telecommunication service is very important (Musa, Markulin, 212, p. 549).

The telecommunications industry in developed countries, but also in transition economies, is one of the most important branches of the economy. Today, it is generally understood as a motor of development, and its role in the dynamics of development is even more highlighted (Sabolić, 2007, p. 21). Telecommunications are of strategic interest in all states and thus in the Republic of Croatia the obligation was determined for all owners to give priority to the transmission of messages relating to the security or defense of the state or to a large scale danger for human lives and property (Brekal, 2008, p. 344). The telecommunications industry was considered a natural monopoly because it was believed that there was room for only one telecommunications operator in the market. Monopolies have been considered to be a public service that guaranteed service to everyone and because of the importance of the so-called network industries (gas, electricity, water, telecommunications), the states considered that it was important to consolidate them within one company due to the strategic and economic reasons (Mastelić, Grubišić, 2013, p. 418). Until July of 1999, there was monopoly in the Croatian market of telecommunications. However, the competition to T-Mobile has been introduced in the 1999. and due to this fact the quality of telecommunication services has been increased, the prices have been lowered and at the same time the fiscal revenue to the state budget has been growing because the number of users has been significantly bigger, especially in the area of mobile telecommunications and Internet services (Brekal, 2008, p. 343).

The technological revolution, through computers and digital technology in the 80s and 90s of the 20th century, has radically changed the telecommunications sector, creating opportunities for new operators (competitors) to enter the market because the governments realized that the monopoly constrains the development of new markets and services (Mastelić, Grubišić, 2013, p. 418). Very important innovations in the world of telecommunications appeared in the second part of the 1990’s together with a general wave of liberalization all around the world, showing on the one hand that inventions existed before, but suggesting on the other hand that competition probably accelerated their adoption and diffusion (Flacher, Jennequinb, 2008, p. 1). In its original form, telecommunications presented a distance communication. Today, in the forefront stands out the telecommunications industry which, besides the communications devices, covers a broad spectrum of consumer electronics and thus provides a broad infrastructure for every modern company in the global market competition. Telecommunications revolution and modern technology have enabled the creation of the global economic network of the 21st century, changing the way people live and work (Klaić, Turek, 2002, p. 101). Therefore, today’s telecommunications networks connect virtually all the countries of the world with huge transmission capacities. To the development of the
opportunities for global information transfer with the outstanding development of telecommunications technology has also contributed the persistent construction of telecommunications networks around the world (Sabolić, 2007, p. 21). At the present stage of development of telecommunication and wireless communications technologies improving the quality of telecom services is most nagging problem. Telecom services is constantly being improved by increasing the speed of data transmission, greater mobility of users, expanding the range of services, improving the utilization of radio frequency spectrum and the degree of network equipment intellectuality and subscriber gadgets (Rzayev, 2015, p. 193). Modern times present the “time of inflation” of products and services. In the case of highly developed and middle-developed countries (including Croatia), there is a ruthless struggle for each user. In such conditions it is necessary to respond to every request of the user (Bosić, Vukšić, Ivančan, 2006, p. 18).

Telecommunications have contributed to the underlying effect of globalization and thus become the “leading force that at the same time creates a huge global economy and makes its parts less or more powerful” and therefore has a major impact on national security issues (Klaić, Turek, 2002, p. 101). Assessing the performances of the possible regulation policies thus appears very important in order to guarantee the development of the sector in the near future but also in the long term. This is all the more important since telecommunications development generates important positive externalities on the whole economy and society. Competition liberalization (and already the perspective of liberalization) induces a higher performance measured through the increase of productivity, the decrease in price and the improvement of the quality of services (Flacher, Jennequinb, 2008, p. 1). Thanks to telecommunication, the use of information in trading as well as the information trading has become the paradigm of the new economy. Therefore, the development of telecommunications and information systems is one of the prerequisites for the country’s overall economic progress. However, world-wide, but also in the narrower environments, there is a multidimensional problem of “digital divide” between the rich and the poor. There is not only a gap between different countries, but also within the country there is a gap between different regions, i.e. between different categories of the population (Sabolić, 2007, p. 21). Telecommunication market is becoming more and more complex. Increasing number of new services, increasing number of customers who requests more services at once, migration from one kind of service to another (e.g. migration from PSTN service to VoIP), migration of customers from one Operator to another, different requests of Agency for Telecommunication etc. are some of reasons why telecommunication market is complex and dynamic. Dynamic of new processes introduction and changes in existing processes is very large. It is very important that processes can support all possible situations during the service provisioning, customer migration or service migration (Musa, Markulin, 212, p. 549). As far as market dynamics is concerned, it can be concluded with certainty that at this time there is no more dynamic activity than mobile communications. Evidence for such a claim represents an incredible increase in the number of mobile communications users over the past years. After determining the services that are of strategic importance to the UMTS (Universal Mobile Telecommunications Service)
operator management, it is necessary to provide to the user a certain service in the best quality way. Today more than one hundred UMTS networks are used in the world and because of the strong competitive market conditions, it is necessary to ensure business excellence to the customers (Bosilj, Vukšić, Ivančan, 2006, p. 18).

The great saturation of the telecommunications market is the cause of the increasingly marked competition among telecommunications companies. This competition every day includes more and more Internet access providers, such as cable and wireless network operators. Telecommunications companies have to redefine their role in the market and develop new business models to create new sources of revenue, overcome current problems and gain competitive advantage. Possible solution lies in the transformation of telecommunications companies into business entities characterized by a strong customer orientation and high levels of innovation. In such a scenario, it will no longer be the most important to optimally utilize the transmission capacities and network infrastructure, but to efficiently automate and coordinate the relationship between each individual user and network operator from one side, and the network provider and digitized content provider on the other side of the value chain (Podobnik, 2007, p. 1). Every user of telecommunication services is using services depending on their needs. In order for operators to place their services better on the market or to discover potential new users, it is possible to apply the process of segmentation. Earlier, the telecommunications operators were developing the network and did not take into account the needs of individual users, and the market was viewed as a whole. Today, operators offer a variety of tariffs and tariff models to cover all the users’ groups and increase the efficiency of their business. With the process of segmentation of the telecommunications market, the telecommunications operators divide the market into segments. There are different criteria that can be used in the segmentation. Each of the criteria helps the operators to connect more easily the users with a particular service or with a number of different services (Kavran, Grgurević, Milinović, 2012, p. 64). Telecommunications companies, driven by increasing competition in the telecommunications market, are seeking new solutions and services to increase the productivity and reduce the costs. One of the proposed solutions is the introduction of the concept of the service orientation that represents the model in which the system logic is divided into smaller, separate parts of logic. These smaller parts can be independently distributed over the network (Ljubi, 2007, p. 1).

Development of the new generation telecommunications network as well as increased user expectations force the operators to offer new services faster in order to remain competitive on the market. Therefore they need to find new, more efficient ways to develop and deliver the services faster. In the light of major changes in the telecommunications market, telecommunications companies must focus on creating an adaptable service infrastructure, thus reducing costs, giving incentives to the innovations and creating new services, and reducing customer dissatisfaction by constantly exceeding their requirements to increase service quality (Ljubi, 2007, p. 1).
1.2. Model and Data

The primary research required for this examination was conducted by a method of in-depth interviews of experts using a standardized interview. Using a predefined set of questions three people belonging to the field of telecommunications were interviewed (one of the regional sales managers for Tele2, one of the regional managers for VIPnet and one of the sector directors of the T-HT). Complete information on interviewed persons can be obtained only on request, but with the respect of the right to their anonymity for the general public.

In Table 1 are showed questions and shortened responses of the interviewed managers.

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<th>Question</th>
<th>Similarities in statements</th>
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<td><strong>How do you assess the rivalry in the telecommunications market in Croatia?</strong></td>
<td>The average rating of the rivalry levels present on the telecommunications market is 4, or in other words a strong rivalry. Operators monitor each other and a situation such as the one with the Revolution promotion presented by Tele2, when VIPnet and HT decided not to take any action until they realized that more and more users were leaving for the competition, could not happen again. Tele2 continues even today to be a “challenger” on the Croatian market by constantly attacking competition with its sales campaigns because both VIPnet and HT have their own low-tariff networks (Bonbon and Tomato) which are used to “fight off” Tele2.</td>
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<td><strong>Will certain strategic changes, in your opinion, occur within large telecommunication operators? And if so, what would be the direction of these changes?</strong></td>
<td>Interviewees from VIPnet and HT agree that there may be strategic changes in the telecommunications market in the near future given the trend of globalization, the day-to-day progress of technology and the expansion of the operators.</td>
<td>Interviewee from Tele2 claims that in the near future, during the next year, there will be no changes. He claims that Tele2 will remain the cheapest, followed by VIPnet. HT will remain in the last place due to its high service prices connected to the quality of the provided signal.</td>
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**Are you influenced by the OTT (Over the Top) players? If so, how do they affect your business?**

OTT players have a significant influence on telecommunications operators in terms of reducing the amount of traditional mobile telecommunications services, while simultaneously increasing the amount of data packages and selling more expensive, “smart” devices that use services such as Skype, Facebook, Whatsapp, etc. This has contributed to the shift in the telecommunications service market because all operators reduced within their tariff packages the amount of conversation and text messages, while increasing data packages. In the near future, by the end of this year, the tariff options should consist of increasingly more data packages and a decreasing quantity of conversation and SMS packages.

**What are the key factors for your success?**

As a key success factor, VIPnet emphasizes the quality, reliability and customer relationship, while HT points out the quality of products and services, as well as customer relations, a complete portfolio, convergence, quality and size of sales channels, financial stability and the investment in infrastructure and new technologies.

Interviewee from Tele2 points out that the key factor of Tele2’s success is actually a low business segment. Tele2 is more based on private users than on business ones since the current share of private users is 95%, while the share of business users is only 5%. Their strategic goal is to increase the share of business users to 10%, and to reduce the share of private users to 90%. Tele2 is therefore aimed at private users, young people and those who need basic services.

**How does the State, by granting concessions, affect your business?**

Since the State has charged the “entry fee” to all three operators, there is no incentive to introduce a new operator in order to “destroy” the existing ones, mostly due to the fact that the State from each of them, per concession, receives an annual amount. Therefore, no new operators will be entering the existing market in the near future. Each operator wishes for the State to reduce the concession fees, and since a different concession fee is charged for calls, data packages and SMS, data packages are being increasingly used due to their lower cost if compared to the higher fees for calls and SMS.
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<th><strong>Which entities in the consumer protection sector affect your business?</strong></th>
<th>HAKOM influences the most the operator’s business segment (up to 90%). As far as consumer protection organizations are concerned, they have almost no impact on the actions of the operators, although complaints are often received from such associations. HAKOM is in fact the main and only genuine protection mechanism for consumers and operators alike, as operators may sue each other as well, and it is HAKOM’s function to determine whether this action is in accordance with the law or not.</th>
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<td><strong>How do you assess the strategic position of your company in Croatia with regard to its position in other EU countries where you operate?</strong></td>
<td>Interviewee from HT argues that their strategic position is good since HT is the market leader in all segments. The regulatory environment largely determines the expansion to other countries in the region. VIPnet is at the very top within Croatia together with HT, as it is in Germany with Deutsche Telekom. It is the first private mobile operator and leader in innovation within the telecommunications market in Croatia. Interviewee from Tele2 states that Tele2 was established in Sweden where it holds the position of a market leader while within the Croatian telecommunications market it retains the position of a “challenger”. The goal of Tele2 is to reach the second place in Croatia with regard to private users, but not business ones since VIPnet is preferred by business users.</td>
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<td><strong>What did it mean for your company to enter the Croatian market?</strong></td>
<td>Interviewee from VIPnet states that the entering of the Croatian market meant creating competition in mobile telephony, a new market choice for consumers, innovations, and a better price/quality ratio. Interviewee from HT states that HT has long been present on the Croatian market, and the introduction of new technologies, especially in ICT, has further ensured their leadership position. Interviewee from Tele2 states that the entry of Tele2 into the Croatian market was significant for the company since they entered a new market. For them, coming to the Croatian market was an entry point to a different part of Europe. Starting from Croatia Tele2 expanded to the Austrian and German market. Even the customer service for the German and Austrian markets is located in Croatia due to a less expensive workforce.</td>
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<td><strong>Are there a lot of newcomers in your market? If so, how do they affect your business?</strong></td>
<td>All three interviewees agree that there are no newcomers in the telecommunications market, but only low-tariff networks in already existing companies (Bonbon and Simpa in HT and Tomato in VIP).</td>
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<td><strong>How do you assess the demand trends in the telecommunications market? How will this affect the price movements?</strong></td>
<td>Interviewees from VIPnet and HT believe that in view of the increased sales of telecommunications products and services, the demand for “smart” phones could increase in the future. The use of minutes of calls in the fixed and mobile networks is decreasing and that there is an increasing demand for larger amounts of data traffic within mobile communications, as well as higher capacities within fixed data services. The current market trends are the following: convergence, unlimited packages and a synergy with ICT and cloud services and solutions.</td>
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<td><strong>Given the current situation in the telecommunications market, what would be the best way to grow and develop telecommunications companies?</strong></td>
<td>Interviewee from Tele2 believes that demand depends on the seasons and that all operators have some ups and downs throughout the year. There is no real growth because Croatia is a country with a small population so that users only switch from one operator to another. He believes that in the next two years there may be an increase in prices since Croatia has the cheapest prices of telecommunications services in the European Union.</td>
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<td><strong>Interviewee from VIPnet claims that the ratio of cost/quality, the quality service and the operator reliability would be the best way to stimulate growth and development of telecommunications companies. Interviewee from HT thinks that the best way would be turning towards convergent services and solutions, including Cloud and ICT. Interviewee from Tele2 argues that all operators are now targeting a variety of data services in order to increase the number of users since exclusively offering call services and SMS can no longer attract users.</strong></td>
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What is your comment on the current market situation and future trends in the telecommunications market?

It is highly likely that only three existing operators will remain on the market due to the high costs of entering the market. In the future, regulations should not restrict investments and the price levels should not fall if users expect the further development of the infrastructure, and therefore services. The subsidies for mobile devices, especially smart phones, with regard to their price increase, have their limitations. Future telecommunication will be based on 5G networks and high speed Internet. The development of devices will in fact occur every few months, so the biggest challenge for all operators will be to follow these development trends and data packages allowing in such a way for the users to profit as well.

Source: authors’s own research

2. DISCUSSION

The structure of the telecommunications market was considered a natural monopoly in almost all transition countries, including the Republic of Croatia. By liberalizing the market, the monopoly market turns into an oligopolistic one and then into a monopolistic competition. An immovable telecommunications market is located between an oligopolistic one and a perfect competition, while a mobile telecommunications market is still oligopolistic. However, by privatizing the state telecom a so-called “quasi-liberalized market” was formed, where an “independent regulator” protects the interests of a privatized telecommunications operator, with a monopoly on fixed telephony services, all of this allowed by the state itself. The “semi-liberalized” market allows for the ability to control the entry of any new entities that are not verified by existing operators. In that way the dominant operators want to secure themselves from potentially dangerous companies with developed telecommunications sectors (Klaić, Turek, 2002, p.109).

Within the Croatian telecommunications market a notion of a dominant position within the market appears where the participants act relatively arbitrarily, with one operator having over 40% market share (HAKOM, 2015), as shown in the Figure 1. Prior to the liberalization process, Croatia was technologically more advanced than the other transition countries, ranked as an average European Union country according to the density of users of the fixed communications network. The mobile communications networks in Croatia are the “crown” of electronic communications. Not only is Croatia not lagging behind the European Union, but according to key indicators of telecommunication services, it is one of those countries that are above the European average, ranging from the coverage
of the Internet access signal, high speeds of data transmission as well as usage habits. More and more citizens use “smart” phones to access the Internet, so Croatia has a huge revenue growth in that segment, but it also records an even greater growth in data traffic (ICT Business, 2015).

T-Mobile Croatia is the first mobile network in Croatia allowing it to hold a monopolistic position on the market. A few years later, VIPnet entered the Croatian telecommunications market, which resulted in a 50% price reduction, and the improvement of service quality. A few years later the Swedish Tele2 entered the market, and with its lower prices influenced the existing market operators (VIPnet and HT) to adjust their prices as well. Today, when there are three operators present on the market, HT is specifically selected by those who have friends and relatives on that network, VIPnet is selected by those who seek a specific quality of technical support and professionalism, while Tele2 is selected primarily for the prices.

![Figure 1 The share of mobile communication network operators with regard to the number of users, December 2015.](https://www.hakom.hr/UserDocsImages/2016/e_trziste/GOD%20HRV%202015_Tr%C5%BEi%C5%A1ni%20udio%20prema%20broju%20korisnika_pokretna.pdf)

By analyzing and exploring the available literature, it has not been established that there are strategic alliances in this sector. However, the two largest operators of fixed networks purchased the smaller operators. No two large operators can merge on the telecommunications market because HAKOM does not allow it. Nevertheless, large operators can buy smaller operators like VIPnet’s acquisition of B.net and Amis Telekom, and HT’s acquisition of Iskon, together with the acquisition of the rights to manage Optima Telekom. After Vipnet takes over Metronet and the merging of H1 Telekom and Optima Telekom, under HT management, the current market will have two large telecommunications
operators with all segments of the business - fixed telephony, mobile telephony and ICT solutions and services. Within the mobile telephony sector there is also Tele2, which fails to significantly compete with HT and VIPnet, even though for a while they were expected to enter the fixed telephony sector by buying one of the smaller operators. Since Tele2 did not enter the fixed telephony sector, while VIPnet acquires Metronet together with the merger of H1 Telekom with Optima Telekom, a strong duopoly will define the fixed telephony sector, while the mobile telephony, with its three operators will remain an oligopoly. Therefore the market will continue to be pressured by the mutual competition of these three operators (ICT Business, 2016).

All three telecommunications operators are mostly foreign-owned. Deutsche Telekom AG predominantly owns HT. The majority owner of the Croatian Telekom d.d. (HT) is Deutsche Telekom Europe B.V. with a share of 51%. Deutsche Telekom Europe B.V. is owned in its entirety by the Deutsche Telekom Europe Holding B.V. which in turn is owned in its entirety by the Deutsche Telekom Europe Holding GmbH. Deutsche Telekom Europe Holding GmbH is entirely owned by Deutsche Telekom AG. The Croatian Homeland War Veterans Fund owns 7% while the Croatian Government’s Center for Restructuring and Sales holds 2.9% of the shares. The remaining 39.1% of shares are in the hands of private and institutional investors such as the Raiffeisen Mandatory Pension Funds as one of the largest shareholder. VIPnet d.o.o., as the first private mobile operator in Croatia, is part of the Telekom Austria Group and a strategic partner of Vodafone, the leading European mobile operator. Telekom Austria, which is a 100% owner of VIPnet in Croatia, is a highly positioned and one of the largest telecommunications company in Austria and abroad. Tele2 is a telecommunications company that deals with GSM mobile communications. The parent company was founded in 1993; it operates in 11 countries and has more than 24 million users. The company started its operations in Sweden in 1993 and in Croatia in 2005. In Croatia in 2015 there are 823,480 users of their services. The company “Tele2” was founded by the Swedish company “Tele2 Sverige Aktiebolag” and is entirely owned by Swedish entities.

There are many institutions involved in consumer protection, regardless of the oligopolistic market. In addition to market inspections and consumer associations, the biggest agency for the protection of consumers is HAKOM (Croatian Regulatory Agency for Network Operations). In order to ensure consumer protection within the telecommunications market, it is essential to ensure transparency, to find an effective way to address out-of-court disputes and to accelerate the process of changing the operators for the end-user. The research conducted by the 2015 European Commission has shown that most consumers believe that mobile phone operators and telecommunications companies do not respect their rights as consumers, which is a significant drop in confidence levels compared to previous years. Also, almost two-thirds of consumers do not know what their consumer rights are when signing a contract on “the street” or outside of the telecommunications center, which they later want to cancel (Lider media, 2015). That is why the companies, with the support of competent institutions, need to interact more proactively with consumers and
be more transparent in their business practices. Consumers, on the other hand, need to inform themselves more about their rights, the services offered by the telecommunications operators, as well as about the corresponding institutions and consumer associations that can provide them with advice and support. The Telekom Association protests HAKOM for not complying with the legal obligation to provide end-users of electronic communications services with an independent cost estimate resulting from the price of public communications services, a type of tariff calculator, even though it would make it extremely easy for the users to select a new operator and tariff.

3. CONCLUSIONS

One of the most significant specifics of the telecommunications market is the oligopolistic market and the liberalization process. Through the process of liberalization from the natural market monopoly an oligopolistic market develops where a small number of sellers of a particular service are active, characterized by a high degree of interdependence in the activities of all of the participants. Also, another specificity of the telecommunications market is the emergence of a dominant position on the market, i.e. the position enjoyed by the leading company, enabling it to downgrade or prevent the development of an effective competition in the relevant market, allowing it to mostly behave independently of its competitors, consumers and users.

By analyzing the revenues of the telecommunication services market by segments, it is noted that the revenues from the telephony services in the mobile public network are absolutely dominating, followed by the revenues from telephony services in a fixed public network. The mobile phones are the industry’s largest growth sector, and in many countries, both developed and developing, the number of mobile subscribers has already exceeded the number of fixed lines. However, in the mobile telecommunications industry, the number of operators is traditionally limited by constraints stemming from a limited electromagnetic spectrum. By observing the entire market at a macro level, it would be beneficial to encourage competitiveness that would lower the prices of telecommunications services, and hence the aforementioned dissemination of information, which would bring the offered services closer to the developed countries of the world. Many considered the telecommunications market a safe investment, but the significant decline that followed in 2011-2012 fuelled pessimism. The growth of the Internet and television sectors can hardly compensate the decline in growth present in the telephone service sector, and therefore the stagnation of the market represents the most optimistic option at the moment.

The primary research indicated that there is a strong rivalry between operators within the telecommunications market, with operators constantly keeping track of each other regarding promotional campaigns so as not to lose existing users to another operators due to a more favorable offer. For this very reason, but also because of price changes that took place in March 2016, there
should be no major strategic changes occurring in the near future. The only possible changes relate to the offered packages by reducing the amount of minutes and SMS messages, and increasing the amount of data traffic in view of the increased trend of using social networks, Skype, Whatsapp, etc.

The quality of services and products, reliability, customer relations, financial stability, investments in the infrastructure and new technologies are all being pointed out as key factors for the success of telecommunications services. The State at the moment does not have a significant impact on the telecommunications operators’ business since the operators had to pay the “entry fee” needed to become part of the telecommunications market. Today, the State would not benefit by allowing the entry of a new operator because such a decision would “destroy” the existing operators from whom it is already profiting through the annual concession payments. Thus, the telecommunications market for mobile networks will surely in the foreseeable future remain an oligopolistic market. HAKOM has the biggest influence on telecommunications operators’ business by monitoring the activities of the operators, addressing customer complaints and regulating the relations between operators. The best way for the telecommunication operators to grow and develop is to optimize the price/quality ratio, but also to meet the needs of the user by increasing data traffic within tariff packages.

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Book with an author


Journal paper


*Paper published in conference proceedings*


*Internet resource*


THE IMPORTANCE OF USING ICT IN THE RURAL TOURISM OF THE ZADAR COUNTY

Abstract

Rural tourism, as a new way of tourism evolved from the combination of ecotourism and agro-tourism, has been considered as good way of economic and social revitalization in the world. We can say that ICTs are necessary components of doing business in rural tourism. This article shows the usage of basic ICTs in rural tourism of the Zadar County. It is therefore necessary to encourage stronger collaboration between all relevant institutions in order to implement ICT in rural tourism which can make Croatian tourism much more competitive. The aim of this article was to determine importance of ICTs in the future of rural tourism development in Zadar County.

Keywords: Rural tourism, Zadar County, ICT, challenges, implementation

1. INTRODUCTION

Tourism sector is one of the first services sectors to adapt and use information and communication technology (ICT) for promoting its services. Nowadays, ICT has deeply affected the way business is performed and organizations compete (Porter, 2001; referenced in Mavri and Angelis, 2009, p. 113). Rural tourism is a special form of tourism, which is characterized by natural environment and distance from urban areas (Clarke, Denmanb, Hickmanc & Slovak, 2001) reference in (Sedmak, Planinc, Kociper, & Planinc, 2016, p. 339). Rural Tourism has become an internationally recognised activity and has been considered by a greater portion of the world as a panacea for economic and social development of rural communities. It is also seen as real and sustainable support to the socio-economic problems in the rural areas and an important source of livelihood for the rural population (Tchetchik, Fleischer & Fleischer, 2008; Doohyun et al., 2014; Ezeuduji, 2013a, 2013b, 2014),
Globally, international bodies and national governments, Non-Governmental Organizations (NGO’s), policy makers and institutions in the field of development see tourism as a viable tool for the development of rural areas. As a result, tourism has become the key word in rural development initiatives, in projects to alleviate poverty and in the conservation of cultural diversity of indigenous communities (Doohyun et al., 2014). Roberts and Hall (2001) estimated that tourism in rural areas 15 years ago represented 10-20% of all tourism activity, but according to Ehrlich (2014) European rural tourism was accountable for 15% of total bed capacity (Sedmak, Planinc, Kociper, & Planinc, 2016, p. 339). Zadar County is predominantly rural. Of the total of 229 settlements in the Zadar County, 210 belong to the rural area (or 92%) (Udruga Ravni Kotari (2017). Ruralna konferencija: Potencijali ruralnog razvoja Zadarske Županije, http://udruga-ravni-kotari.hr/2017/02/23/ruralna-konferencija-potencijali-ruralnog-razvoja-zadarske-zupanije-unrezavanje-razmjena-iskustva/, accessed: 30.6.2017.). Next figure shows the position and the area map of the Zadar County.

The research focuses on online analysis how rural householders in Zadar County use the basic ICTs. The research paper finds that we have low percentage of ICT use in rural tourism of the Zadar County and that Government, Ministry of tourism, County Tourist board, Rural Development Agency of Zadar County and Association for Rural Development “Ravni Kotari” should help rural tourist householder with ICT education.

2. THE ROLE OF ICTs IN TOURISM

From the competitiveness point of view, ICTs play a critical role for tourism organizations and destinations (Buhalis 1998, 2003; O’Connor, 1999; Sheldon, 1997; Poon, 1993). Information and Communication Technologies (ICT) is umbrella term for technological developments for the Umbrella term
for technological developments for the Production, analysis, storage, search, distribution and use of information ICT includes a combination of hardware, software, telecommunications, Netware, groupware Human-ware (Waghmode and Jamsandekar, 2013). According to (Bethapudi, 2013, p. 67) information communication technologies (ICTs) have been transforming tourism globally. By maintaining their price leadership in the market or by differentiating their product and services, tourism companies can gain competitive advantage if ICT is managed properly. (Poon, 1993; Werthner & Klein, 1999; Xiaoqiu Ma, J. et. al., 2003). ICT enable travellers to access reliable and accurate information as well as to make reservations in a fraction of the time, cost and inconvenience required by conventional methods (O’Connor, 1999). Successful ICT deployment requires innovative management to constantly review developments and adopt suitable technological solutions in order to maximize organizational competitiveness (Buhalis & O’Connor, 2005). Information and Communications Technology, according to Connolly and Olson (2000) is the single greatest force affecting change in the hospitality industry. However, as in the case of other sectors, the rate of adoption of ICTs has been found to be quite uneven across the hotels (Hoontrakul & Sahadev, 2007, p. 535). Sedmak, Planinc, Kociper, & Planinc (2016, p. 342) research shows that the most important factor affecting the performance are perceived benefits from ICT use. According to (Leatherman, 2000; Milne, Mason, Roberts, Nodder, Ateljević & Cameron, 2005), it was expected that younger, more educated managers and those operating in more complex business systems tend to use ICT more efficiently (Sedmak, Planinc, Kociper, & Planinc 2016, p. 342). The deployment of information and communication technologies (ICT) is crucial for the competitiveness of rural tourism businesses (Polo Peña & Frias Jamilena, 2009), so rural tourism companies have embraced these technological advances that have made a positive contribution to their quick expansion in recent years (Ruiz-Molina, M.E., Gil-Saura, I., & Moliner-Velazquez, B., 2015). Despite the benefits that ICT brings for the promotion, communication and bussines of tourism firms located in rural areas, they tend to present lower levels of ICT adoption (De Noronha Vaz et al., 2006) so we have different levels of adopted technology between those businesses located in urban and rural locations (Reino, Frewa & Albacete-Sâezb, 2010). In order to better understand the situation of ICT implementation in rural tourism of the Zadar County the research question can be define as: What percentage of rural householders is using basic ICTs in the County of Zadar?

3. **SOME STATISTICAL INDICATORS HOW TOURISTS USE ICT IN CROATIA**

Tourism is usually defined as services for people travelling to and staying outside their usual environment for less than one consecutive year for leisure or for business purposes (Mavri & Angelis, 2009, p. 114). ICTs in this industry consist of various components that include computerized reservation systems, teleconferencing, video, video brochures, management information
systems, airline electronic information systems, electronic funds transfer, digital telephone networks, smart cards, mobile communication, e-mail, and Internet (Waghmode and Jamsandekar, 2013). The figure below shows the importance of internet use as a source of tourist information.

![Figure 1](image_url)  
*Figure 1. The source of information when tourists decide to come in Croatia*  

The following table shows the importance of constant improvement of the content of web pages, as a percentage of 41.5% from 2010 and 51.3% from 2014, shows exactly that the official website of the tourist boards extremely important in their use of information on the selection of destinations. This is another indication that the Internet is an essential medium in communicating and attracting tourists to Croatia.

**Table 1**  
The source of tourist information by type of website

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Web site of tourist board (national, regional, local)</td>
<td>42.0</td>
<td>36.7</td>
</tr>
<tr>
<td>Web site of accommodation</td>
<td>41.5</td>
<td>51.3</td>
</tr>
<tr>
<td>„Online“ tourist agency (OTA)</td>
<td>35.4</td>
<td>33.6</td>
</tr>
<tr>
<td>Social media (Facebook, TripAdvisor, Instagram, Twitter…)</td>
<td>30.1</td>
<td>38.6</td>
</tr>
</tbody>
</table>

*Source: Croatian tourism in numbers, Issue 1, 2015., p. 11. and Attitudes and Expenditures of Tourists in Croatia – TOMAS 2010., Institute for Tourism, Zagreb, 2010.*
The table below shows the importance of online reservation from 2014. It shows exactly that the highest percentage of reservation make through accommodation and transport and the lowest through renting services.

Table 2

<table>
<thead>
<tr>
<th>Service*</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation</td>
<td>73,4</td>
</tr>
<tr>
<td>Transport</td>
<td>71,3</td>
</tr>
<tr>
<td>Excursions</td>
<td>50,0</td>
</tr>
<tr>
<td>Tickets for concerts, events, exhibitions etc.</td>
<td>39,8</td>
</tr>
<tr>
<td>Rent a car, rent a boat, rent a bicycle/motorcycle</td>
<td>40,4</td>
</tr>
</tbody>
</table>

Source: Croatian tourism in numbers, Issue 1, 2015., p. 11.
*Multiple response. Data for those who booked a service in advance.

The next table shows the accommodation facilities booking in destination from 2014. It shows that the highest percentage of booking accommodation was established direct with accommodation establishment.

Table 3

<table>
<thead>
<tr>
<th>Booking channels</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directly with an accommodation establishment</td>
<td>42,5</td>
</tr>
<tr>
<td>Through a travel agency</td>
<td>26,1</td>
</tr>
<tr>
<td>No prior booking</td>
<td>27,7</td>
</tr>
<tr>
<td>Other</td>
<td>3,7</td>
</tr>
<tr>
<td>Total</td>
<td>100,0</td>
</tr>
</tbody>
</table>

Source: Croatian tourism in numbers, Issue 1, 2015., p. 12.

Globalization of tourism activities (Cooper & Wahab, 2001) and the wider application of ICT in tourism (Sigala 2007) commonly create new dynamic environment where innovation concept and its associated transformation in operative solutions applied in practice, has become of great importance (Garbin Praničević & Zovko, 2016, p. 41). All the data in all upper tables show the importance of using ICTs in tourism and that it will also have influence on the future development of the rural tourism in Zadar County, because nowadays modern tourists are well educated, informed and have accesses to global market to choose immediately what they want to search and then connect with the owner about details of accommodation, price, payment, etc. We can see from table nu. 2. that more than 70% of accommodation is booked online and that rural householders in Zadar County must implement more ICTs in their business in order to achieve better sales, better online visibility and better promotion.
4. SOME FACTS ON RURAL TOURISM IN CROATIA

The importance of rural tourism can be primarily seen in the very important interaction with agricultural production, the production of traditional products, presentation of heritage, traditional gastronomy and tourist services, i.e. in the utilisation of existing resources. In the Republic of Croatia, rural space takes up 91.6% of the total area, which makes an enormous potential for the development of rural tourism (Demonja, 2013). The development of rural tourism in Croatia intermittently started in the beginning of 1990s, when the Ministry of Tourism of the Republic of Croatia started the initiatives for its development, and the first activities included field surveys, gathering of information, training initiators and creating prerequisites for its development. The dynamics of stronger development of tourism in rural households and Croatian rural tourism in general started in 1998. During this year, 32 tourist rural households were registered in the Republic of Croatia (Mišćin & Mađer, 2008.), reference in (Demonja, 2014, p. 74-75). Tourist rural family households, besides tourism offer, also attract guests by design/appearance, i.e. attractiveness of the households or buildings where guests are offered different catering and tourist services. In the case of the attractiveness of tourist rural family households, a crucial importance has traditional architecture and the manner of construction. Most of those surveyed classified their facilities in a group of traditional (indigenous) or partly traditional buildings (Demonja, 2014, p. 79).

5. METODOLOGY

The research was carried out between June 25th till June 30th 2017. According to data received from State Administration Office in Zadar County, online analysis was conduct on rural tourist householders in the County of Zadar. Research included some basic ICTs like: having official web page and e-mail, presence on social media, google maps location and review on Web or TripAdvisor. This research was conducted in order to understand the importance for implementing ICTs in rural tourism in Zadar County and to evaluate its positive and negative impact.

6. USAGE OF ICTs IN THE RURAL TOURISM OF THE ZADAR COUNTY

ICT is used as a general term for diverse set of technologies which enable users to create, access, disseminate, store, manage, and communicate information in a digital format. ICT include computer hardware and software applications, encompassing: mobile phones, computers, network hardware, internet, telecommunication systems and so on, as well as the various related services and applications. In recent years there has been a groundswell of interest in how computers and internet can best be harnessed to improve social communication at different levels, which has propelled research and innovation
in the area of ICT and social digital media (SDM), leading to the emergence of what has come to be known as participatory technologies such as Web 2.0. Overall, although ICT and social media are conceptually different, they are intertwined and inextricably connected. And they converge when mobilized as resources for or employed as means in social change, a process that entails altering social patterns of a society, which can involve economic development, political progress, cultural change, social revolution, etc. (http://wpmu.mah.se (2017). ICT and Social Media: Definitional Issues and the Relationship, http://wpmu.mah.se/nmict11group1/2011/10/30/2-ict-and-social-media-definitional-issues-and-the-relationship/, accessed: 28.6.2017.)

In the table below the basic use of ICTS by rural tourist households were analysed according to data from the State Administration Office in Zadar County. The following table 4 shows the number of TRFH\(^1\) in Zadar County. From this table it is evident that not only we have small usage of ICTS but we don’t have even enough basic usage of ICTS by tourist rural family householders in Zadar County.

<table>
<thead>
<tr>
<th>No.</th>
<th>Location</th>
<th>Type of accommodation</th>
<th>Type of service</th>
<th>Official webpage</th>
<th>Official E-mail</th>
<th>Social media</th>
<th>Google maps location</th>
<th>Trip Advisor or Web review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lepuri</td>
<td>Rural house</td>
<td>Accommodation/F&amp;B(^2)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2.</td>
<td>Nadin</td>
<td>Excursion place - Winery</td>
<td>F&amp;B</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Facebook &amp; YouTube</td>
<td>Yes/Both</td>
</tr>
<tr>
<td>3.</td>
<td>Smilčić</td>
<td>Rural house</td>
<td>Accommodation/F&amp;B</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4.</td>
<td>Radešinovci</td>
<td>Konoba/Taverns</td>
<td>F&amp;B</td>
<td>No</td>
<td>Yes</td>
<td>Facebook &amp; Instagram</td>
<td>Yes/Both</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Polača</td>
<td>Konoba/Taverns/ Wine and Oil domestic product</td>
<td>F&amp;B</td>
<td>Yes</td>
<td>Yes</td>
<td>Facebook, Instagram &amp; YouTube</td>
<td>Yes/Both</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Zemunik</td>
<td>Excursion place</td>
<td>F&amp;B</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>7.</td>
<td>Galovac</td>
<td>Excursion place</td>
<td>F&amp;B</td>
<td>No</td>
<td>Yes</td>
<td>Facebook &amp; Web review</td>
<td>Yes/No</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Jasenice</td>
<td>Konoba/Taverns</td>
<td>F&amp;B</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>9.</td>
<td>Kruševo</td>
<td>Excursion place</td>
<td>F&amp;B</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>10.</td>
<td>Obrovac</td>
<td>Restaurant/Rooms/ Camping</td>
<td>Accommodation/ F&amp;B</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>11.</td>
<td>Poličnik</td>
<td>Excursion place</td>
<td>F&amp;B</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>12.</td>
<td>Rava</td>
<td>Excursion place</td>
<td>F&amp;B</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>13.</td>
<td>Rtina</td>
<td>Excursion place - Camping</td>
<td>F&amp;B/ Accommodation</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>14.</td>
<td>Sali</td>
<td>Excursion place</td>
<td>F&amp;B</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>15.</td>
<td>Tribanj</td>
<td>Camping/ Konoba/ Taverns</td>
<td>Accommodation/ F&amp;B</td>
<td>Yes</td>
<td>Yes</td>
<td>Facebook &amp; No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>16.</td>
<td>Ždriško</td>
<td>Excursion place</td>
<td>F&amp;B</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>17.</td>
<td>Galovac</td>
<td>Rooms</td>
<td>Accommodation</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>18.</td>
<td>Murvica</td>
<td>Rooms</td>
<td>Accommodation</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>19.</td>
<td>Seljine</td>
<td>Room/Apartment</td>
<td>Accommodation</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>20.</td>
<td>Starigrad-Paklenica</td>
<td>Rooms</td>
<td>Accommodation</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

\(^1\) Tourist rural family householders  
\(^2\) Food and Beverage
From the table we can see that majority of rural households in Zadar County didn’t implement even basics of ICTs in their business. Only 17.8% of rural households has official internet page, 35.7% of them has e-mail address and just 32% is present on social media like Facebook, Instagram or YouTube. If we take a look on google maps location category we can see that 39.2% has that useful help for tourists to find your place. Only 21.4% has TripAdvisor and/or other Google/Facebook review where tourists can write their impression about your place, service, accommodation and food. The results of this research paper implies a conclusion that tourist rural households need help of the relevant institutions. First of all institution such as Government and Ministry of Tourism need encourage with financial resources Tourist board of Zadar County, Rural Development Agency of Zadar County and Association for Rural Development “Ravni kotari” founded in 2014., to create professional education courses and seminars about ICT use in rural tourism in order to increase and speed up low and slow implementation of ICTs among rural tourist householders in Zadar County. The good education start point was I.st Conference in Zadar County about rural tourism called: “Rural Development Potentials of the County of Zadar - Networking and Exchange of Experience” held in 2nd of March, 2017..

Secondly, all rural householders need to be part of new founded Association of Rural Tourism of Croatia in order to create a good perspective of common global market performance, implementing strategy, proposing and creating amendments to the law, collecting information on trends in rural tourism etc.

7. CONCLUSION

With the help of ICT rural areas can achieve better visibility, communication, integration into economic and tourism flows, marketing of products and services and finally better quality of life for the local population. Furthermore, ICTs allow reduction of the production costs, increased productivity, they boost efficiency and effectiveness and have positive impact on performance, growth, and development of new products (Barba-Sánchez, Martínez-Ruiz & Jiménez-Zarco, 2007; Consoli, 2012; Shanker, 2008) reference in (Sedmak, Planinc, Kociper, & Planinc, 2016, p. 340). Residents of rural areas are still not sufficiently affiliated to attend seminars and education and have little trust in their local self-government units leading to the lack of participation in projects
co-financed by the local, national and European levels. (Udruga Ravni Kotari (2017). Ruralna konferencija: Potencijali ruralnog razvoja Zadarske Županije, http://udruga-ravni-kotari.hr/2017/02/23/ruralna-konferencija-potencijali-ruralnog-razvoja-zadarske-zupanije-umrezavanje-razmjena-iskustva, accessed: 30.6.2017.). According to the results of the research we can say that majority of rural households in Zadar County didn’t implement even basics of ICTs in their business. In this research despite the benefits of ICT for the promotion, sales, bussines and communication, householders located in rural areas have lower levels of ICT adoption like it was mentioned in the research (De Noronha Vaz, Morgan & Nijkamp, 2006). Also, different levels of technology have been adopted between those firms located in urban and rural locations like in the research (Reinoa, Frewa & Albacete-Sáezb, 2010). Unfortunately, this type of research paper was not found to compare it with the results of this research, but we can, regarding the results of the research, make partial conclusion, although this paper did not compare rural and urban area, that even in Zadar County householders in rural area tend not to use ICTs despite its numerous advatneges.

Limitations of this study were only the basic elements of using ICT from one side, and from another that some data about names of the objects of the rural householders were missing in the table form State Administration Office in Zadar County, so one part of the analysis was carried out according to the name of the owner, street and place which maybe effected on the final result of the research, because of incomplete data. Future research can encompass a real level of ICT education among rural householder in Zadar County and suggestion how and where they want to learn it with special emphasis of their expectations.

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Natura Jadera (http://natura-jadera.com/karte/karta.html; access: 4.7.2017.)


INNOVATION
Abstract
Nowadays, the vast majority of scholars admit that innovation in many countries is a key to a fast economic development which enables a high level productivity and quality of life. As European Innovation Scoreboard 2016 states, “Innovation grows the EU’s knowledge economy, it enhances our competitiveness and it creates a prosperous future for all Member States”. Nevertheless, though the European Union is constantly seeking convergence, the members are still divided to modest, moderate, strong innovators and innovation leaders. Therefore, it is crucial to constantly analyse all drivers and determinants of successful national-level innovation performance. The authors of this article suggest that culture is one of the influencing factors because EU countries differ significantly by their social norms, morals, values, traditions and behaviors which may also affect the innovative capacity of a society. Thus, the purpose of this study is to explore the link between nation’s cultural background and country-level innovation performance. Systemic review of scientific economic literature, comparative judgement and regression analysis were used in order to reach the conclusions. The data from European Innovation Scoreboard and scores of six Hofstede’s cultural dimensions were applied in the empirical analysis. The representative results show that the dimensions of indulgence and individualism are positively while power distance and uncertainty avoidance are negatively related to national innovation performance.

Keywords: EU, innovation, Hofstede’s dimensions
1. INTRODUCTION

“Countries may not be able to increase their rates of innovation simply by increasing the amount of money spent on research and development or industrial infrastructure. They also may need to change the values of their citizens to those that encourage innovative activity” (Shane, 1993).

Researchers suggest a significant relationship between a nation’s culture and its level of innovativeness (Barnett, 1953; Shane, 1992; Patterson, 1999; Hayton and Zahra, 2002; Hussler, 2004; Didero, Gareis, Marques, Ratzke, 2008; Lundvall, 2009; Kaasa and Vadi, 2010; Ofori-Dankwa, 2013; Kaasa, 2013; Khan, Cox, 2017).

In order to prove the mentioned relationship, different instruments and data were used. Self-employment rates, royalty and license fees, trademarks, technology adoption rates, patents, R&D expenditures and even a number of research centers were adopted as variables of innovation (Khan, Cox, 2017). For the cultural part, scientists were choosing between Values Orientation Theory (Kluckhohn and Strodtbeck, 1961), Trompenaars and Hampden-Turner (Trompenaars and Hampden-Turner, 2004), GLOBE (House, Hanges, Javidan, Dorfman, Gupta, 2004), European Social Survey (Kaasa, 2009) and Hofstede’s Cultural Dimensions Theory (Jones and Teegan, 2001; Rinne, Steel, Fairweather, 2012; Syed, Malik, 2014; Prim, Filho, Zamur, Di Serio, 2017).

Despite the fact that the topic has been widely analyzed, it is still relevant because the results provided by researchers differ significantly. For a detailed analysis, the authors used data from European Innovation Scoreboard 2016 and the scores of Hofstede’s Cultural Dimensions. It is important to note that the last dimension of Indulgence versus Restraint was presented only several years ago, therefore, hardly any studies which measure the impact on national innovation performance take into account all six cultural dimensions. The authors of this research seek to assess whether innovation performance in Europe is culture-specific by filling in this gap.

This article is started with a literature review, followed by a presentation of European Innovation Scoreboard and six Hofstede’s dimensions. Thereafter, similarities and differences of EU Member States are demonstrated and statistical analysis is used to examine the relationship between culture and innovation.

2. LITERATURE REVIEW

It is generally agreed that the national culture can be defined as a distinctive set of norms, beliefs, values and behaviors within the population of a country. Despite all criticism (Steenkamp, 2001; Brons, 2006; Javidan, House, Dorfman, Hanges, De Luque, 2006), the most recognized and cited study about identification and measurement of the dimensions of culture has been provided by the Dutch researcher Geert Hofstede (Dickson, Hartog, Mitchelson, 2003). As for now, six dimensions of culture are proposed - Power Distance, Individualism
versus Collectivism, Masculinity versus Femininity, Uncertainty Avoidance, Long Term versus Short Term Orientation and Indulgence versus Restraint (for more comprehensive information, see paragraph 2.1.).

Most of researchers, such as Shane (1993), Herbig and Dunphy (1998), Hussler (2004) or Rinne, et. al (2012) discovered a negative relationship between Power Distance and innovative performance (see Table 1). According to Kaasa (2013), low power distance cultures, which emphasize subordinates’ autonomy in decision making, promote innovation, entrepreneurship and inventions. On the contrary, societies with high power distance cultures tend to discourage innovation and creativity.

While analyzing the dimension of Individualism, it can be noted that scientists admitted its’ either positive or no effect on innovation. Kaasa, Vadi (2010), Ali, J. Ali, I. (2012) found no effect while Shane (1993) posited that the characteristics associated with highly individualistic cultures spur high levels of innovation and invention. Herbig, Dunphy (1998) added that individuals living in such societies have more reasons to expect compensation and recognition for inventive and useful ideas.

Table 1
The relationship between cultural dimensions and innovative performance

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Effect on innovation</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Distance</td>
<td>Positive</td>
<td>Kaasa, Vadi (2010)</td>
</tr>
<tr>
<td></td>
<td>Neutral</td>
<td>Rinne, et. al (2012)</td>
</tr>
</tbody>
</table>

*Source: authors’ own contribution*
Even earlier than G. Hofstede has proposed his model, Barnett (1953) postulated a positive correlation between the individualism of a society and its innovative potential: the greater the freedom of the individual to explore and express opinions, the greater the likelihood of new ideas coming into being. The latest research by Khan, Cox (2017) also suggests that challenging the status quo (high Individualism) helps the creativity and innovation flourish.

Shane (1993), Williams, McQuire (2005), Ali, J. Ali, I. (2012) stated that Masculinity is believed to have no particular effect on economic creativity while Kaasa, Vadi (2010), Kaasa (2013), Khan, Cox (2017) came up with the results which showed a negative relationship in the matters of innovation performance. According to Nakata, Sivakumar (1996), in feminine societies the focus is on people and a more supportive climate can be found. Sharing of information, the promotion of collaboration, a warm, non-conflictive climate and socio-emotional support help employees to cope with the uncertainty related to new ideas (Kaasa, 2013; Khan, Cox, 2017).

Uncertainty Avoidance is the fourth cultural dimension, which, as a majority of researchers explained, has a negative effect on innovation performance. Shane (1993), Waarts, van Everdingen (2005) presented arguments to emphasize that cultures with strong uncertainty avoidance can be more resistant to innovations, meanwhile Hussler (2004) introduced a culture-based taxonomy of innovation performance, according to which societies which accept uncertainty are those who attain better innovation level. Finally, a study Syed, Malik (2014) confirmed that cultures with low Uncertainty Avoidance tend to adopt new technology more readily than cultures with relatively high Uncertainty Avoidance.

The dimension of Long Term Orientation, formed in 1991, is generally recognized as having a positive effect on innovation performance. Herbig’s and Dunphy’s (1998) findings confirmed that societies characterized as Long-Term Orientated ones have higher innovation capacities. Khan, Cox (2017) also indicated that an encouragement of achievement and long-term thinking (they called it pragmatism) are very important features of innovative nations. In 1999, Patterson proposed that in countries with a higher value of Indulgence, people have more sense of control over their lives, i.e. they believe that they can have some impact on themselves and their surroundings. Fifteen years later, Syed, Malik (2014) confirmed that indulgent societies may encourage innovation as a way to continually satisfy drives related to having fun and enjoying life. Therefore, Khan, Cox (2017) concluded that indulgent cultures tend to create new technology as a way to improve life.

All in all, the results of previous research prove that the final innovation performance may develop on the basis of a combined effect of cultural dimensions. As it was mentioned before, there are only several studies which use all 6 Hofstede’s cultural dimensions. Hence, it is of great importance to fill in this research gap and explore types of cultures which are more innovative than others. In the following paragraphs, the analysis is done in the context of European Union.
3. CULTURE AND INNOVATION IN EU: CURRENT SITUATION

3.1. Hofstede’s cultural dimensions

Originally, the theory of Geert Hofstede proposed four dimensions along which cultural values could be analyzed: Power Distance Index, Individualism versus Collectivism, Masculinity versus Femininity and Uncertainty Avoidance Index. All of the four dimensions in that model were derived from Hofstede’s analysis of an existing IBM employee database.

Due to the criticism for limitations of the model, such as an old data, one company approach and too few dimensions, in a subsequent publication Hofstede (1991) added a fifth dimension - Long Term Orientation versus Short Term Orientation. It was based on a study of students’ values in 23 countries around the world, using a Chinese Values Survey (CVS), initiated by Michael Harris Bond. In 2010, Michael Minkov’s World Values Survey data analysis of 93 representative samples of national populations allowed Geert Hofstede a new calculation of the fifth and led to identify the sixth and last dimension: Indulgence versus Restraint (Itim International, 2017).

The relative positions on the dimensions (see Table below) are expressed in a score on a 0-100 point scale. If a score is under 50, the culture scores relatively low on that scale and if any score is over 50, the culture scores high.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Short description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Distance Index (PDI)</td>
<td>The degree to which the less powerful members of a society accept and expect that power is distributed unequally.</td>
<td>Low – society strives to equalize the distribution of power and demand justification for inequalities of power. High – society accepts a hierarchical order in which everybody has a place.</td>
</tr>
<tr>
<td>Masculinity versus Femininity (MAS)</td>
<td>The degree to which the members of a society either seeks for achievement, heroism, assertiveness and material rewards for success or prefer cooperation, modesty, social care and quality of life.</td>
<td>Low – feminine society that is oriented to the process and consensus. High – masculine society that is driven by competition, achievement and success.</td>
</tr>
<tr>
<td>Uncertainty Avoidance Index (UAI)</td>
<td>The degree to which the members of a society feel uncomfortable with uncertainty, ambiguity, something away from the status quo.</td>
<td>Low – society that prefers to maintain time-honored traditions and norms while viewing societal change with suspicion. High – society that has pragmatic approach: encourages thrift and efforts to prepare for the future.</td>
</tr>
<tr>
<td>Long Term Orientation versus Short Term Orientation (LTO)</td>
<td>The degree of a society’s preference for either short-term fulfillment of social obligations or long-term orientation to the future, thrift and persistence.</td>
<td>Low – society that fosters virtues related to the past and present, keeps and honors the traditions. High – society that views adaptation and circumstantial problem-solving as a necessity.</td>
</tr>
<tr>
<td>Indulgence versus Restraint (IND)</td>
<td>The degree to which the members of a society either freely satisfy their basic needs and desires or follow strict social norms.</td>
<td>Low – society that suppresses and regulates the gratification and has a tendency to cynicism and pessimism. High – society that possesses a positive attitude and optimism and places a higher degree of importance on leisure time.</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Individualism versus Collectivism (IDV)</td>
<td>The degree to which the members of a society are integrated into groups.</td>
<td>Low – collectivistic society, loyalty and relationships are of high importance. High - preference for a loosely-knit social framework in which individuals are expected to take care of themselves and their immediate families only.</td>
</tr>
</tbody>
</table>


Hofstede (2011) explains that national culture scores should not be used for stereotyping individuals and the links are statistical. Furthermore, it is important to note that the scores reflect values transferred from parents to children which rarely change in later life so they can be assumed to be stable over period of time. As there is no standard for the degree of cultural dimensions, scores reflect the differences between societies and the relative position to each other (Beugelsdijk, Maseland, Hoorn, 2015). Hence, on the basis of 6 Hofstede’s dimensions, next paragraph is devoted for the analysis of EU Member States’cultural features.

### 3.2. Culture in EU: current situation

Austria and Denmark have the lowest scores on Power Distance Index (see Figure 1). Individuals living in these countries demonstrate independence and a strong seek for equal rights. Other 11 countries, starting from Ireland up to Hungary, also have a relatively small score which represents the encouragement of democratic forms of participation, trust between different hierarchical levels, direct and participative communication. All other States and especially Slovakia and Romania share quite different features of national cultures. Relatively, people there tend to accept centralized decision structures, unequal distribution of power, extensive use of formal rules and paternalistic power relations.

While analyzing the dimension of Masculinity versus Femininity, it can be stated that Sweden, Latvia, the Netherlands, Denmark, Lithuania and Slovenia have the most feminine societies in the European Union (see Figure 2). All individuals living in the mentioned countries are supposed to be modest, tender, and concerned with the quality of life, conflicts there are solved through negotiation and consensus rather than force. Highly masculine countries like Italy, Austria, Hungary or Slovakia, on the contrary, share the dominant values such as clearly distinct gender roles, competitiveness and a great emphasis on material success and economic growth.
Figure 1 Power Distance

Figure 2 Masculinity versus Femininity

Figure 3 Uncertainty Avoidance

Figure 3 represents the level of uncertainty avoidance. The comparison shows that in the cultures of Denmark, Sweden, Ireland and United Kingdom unpredictable future situations are welcomed with curiosity rather than stress. The rest of Member States try to reduce the risks to the minimum by strict behavioral codes, laws. According to Hofstede (2011), high score in uncertainty avoidance also means higher stress, emotionality, anxiety, neuroticism and poorer self-control.

The fourth dimension is Long Term versus Short Term Orientation. As explained by Hofstede (2011), it is related to the choice of focus for people’s efforts: the future or the present and past. Ireland and Portugal hold the lowest scores (see Figure 4) and have cultures classified as normative where individuals respect the traditions but also have an immediate need for spending, consumption and focus on achieving quick results. Contrarily, people living in long term oriented cultures like Estonia, Lithuania, Belgium and Germany can be characterized as persistent individuals who believe that most important events in life will occur in the future and whose values are learning, adaptiveness, accountability and self-discipline.

Figure 5 illustrates the level of individualism and collectivism in the countries. It can be seen that the United Kingdom has the most individualistic society which appreciates privacy, prevails tasks over relationships and seeks for unique personal contribution to the community. Quite the opposite, countries such as Portugal, Slovenia, Bulgaria, Romania, Croatia and Greece have the consciousness of “we” rather than “I”. Group goals and cooperating with others is a norm, an individual is of value only insofar as he serves the group.

The sixth dimension Indulgence versus Restraint is complementary to Long term versus Short-Term Orientation and is mainly related to national levels of subjective happiness and life control (Hofstede, 2011). The data in Figure 6 shows that societies of Latvia, Bulgaria, Estonia, Lithuania and Romania are extremely restraint. People in general feel less happy and less healthy, they have stricter moral discipline and more introverted personalities if compared to other EU Member States.

In contrast to the mentioned countries, it can be noted that individuals living in Greece, Luxembourg, Finland, Belgium, Austria, Ireland, Malta, the Netherlands, United Kingdom, Denmark and Sweden (Sweden being on the top) tend to put much more emphasis on their leisure time, individual happiness and well-being.
Figure 4 Long term orientation

Figure 5 Individualism versus Collectivism

Figure 6 Indulgence versus Restraint

To sum up, though the members of European Union are quite close from the geographical point of view, their cultural norms and values can be surprisingly different. Therefore, it is necessary to analyze whether these differences can influence the innovative capacity of the countries. Results are presented in the paragraph 4.

3.3. European innovation scoreboard

The European Innovation Scoreboard (EIS) – previously Innovation Union Scoreboard – provides a comparative analysis of innovation performance in EU Member States, other European countries, and regional neighbors (European Commission, 2016). It was introduced as a part of the Lisbon strategy and evaluates, on a yearly basis, relative strengths and weaknesses of national innovation systems. For now, EIS consists of three main types of indicators and eight innovation dimensions, capturing in total 25 different indicators (see Table 3). Enablers show the main drivers of innovation that are external to the firm, firm activities capture innovation efforts at the firm level and outputs capture the outputs of firm activities.

<table>
<thead>
<tr>
<th>Main type</th>
<th>Innovation dimension</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Human resources</td>
<td>1.1.1 New doctorate graduates per 1000 population aged 25-34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.1.2 Percentage population aged 30-34 having completed tertiary education</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.1.3 Percentage youth aged 20-24 having attained at least upper secondary level education</td>
</tr>
<tr>
<td>Enablers</td>
<td>Open, excellent and attractive research systems</td>
<td>1.2.1 International scientific co-publications per million population</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.2.2 Scientific publications among the top 10% most cited publications worldwide as % of total scientific publications of the country</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.2.3 Non-EU doctorate students as percentage of all doctorate students</td>
</tr>
<tr>
<td></td>
<td>Finance and support</td>
<td>1.3.1 R&amp;D expenditure in the public sector as percentage of GDP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.3.2 Venture capital investment as percentage of GDP</td>
</tr>
<tr>
<td>Firm activities</td>
<td>Firm investments</td>
<td>2.1.1 R&amp;D expenditure in the business sector as percentage of GDP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.1.2 Non-R&amp;D innovation expenditures as percentage of turnover</td>
</tr>
<tr>
<td></td>
<td>Linkages &amp; entrepreneurship</td>
<td>2.2.1 SMEs innovating in-house as percentage of SMEs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.2.2 Innovative SMEs collaborating with others as percentage of SMEs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.2.3 Public-private co-publications per million population</td>
</tr>
<tr>
<td></td>
<td>Intellectual assets</td>
<td>2.3.1 PCT patents applications per billion GDP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.3.2 PCT patent applications in societal challenges</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.3.3 Community trademarks per billion GDP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.3.4 Community designs per billion GDP</td>
</tr>
</tbody>
</table>

Table 3

The structure of European Innovation Scoreboard
3.1 Outputs

- SMEs introducing product or process innovations as percentage of SMEs
- SMEs introducing marketing or organisational innovations as percentage of SMEs
- Employment in fast-growing enterprises (average innovativeness scores)

3.2 Economic effects

- Employment in knowledge-intensive activities (manufacturing and services) as percentage of total employment
- Medium and high technology product exports as percentage of total product exports
- Knowledge-intensive services exports as percentage of total service exports
- Sales of new-to-market and new-to-firm innovations as percentage of turnover
- License and patent revenues from abroad as percentage of GDP


Based on the calculated average innovation performance, Member States fall into four different categories: Innovation Leaders with innovation performance well above the EU average, Strong Innovators with innovation performance above or close to the average, Moderate Innovators with the performance below the average and Modest Innovators which are well below the average.

As it can be seen in the figure above, Romania and Bulgaria currently are at the bottom of performance scale. 14 States – Croatia, Latvia, Lithuania, Poland, Slovakia, Hungary, Spain, Portugal, Italy, Czech Republic, Malta, Estonia and Cyprus belong to Moderate Innovators. Countries, which appear to be Strong Innovators, are Slovenia, France, Austria, Luxembourg, United Kingdom, Belgium and Ireland. Finally, the top innovators in EU are the Netherlands, Germany, Finland, Denmark and Sweden.

Hence, it is clear that regarding innovation performance, there is a lack of homogeneity within European Union. Next paragraph is dedicated for the analysis of the possible reasons of this imbalanced situation.

Figure 7 Innovation performance in EU Member States

Source: authors’ based on European Commission (2016)
4. RESEARCH METHODOLOGY

Data selection. For the detailed analysis of the relationship between country’s innovation performance and the cultural features of citizens, a few types of indicators were engaged:

1. Indicator showing the level of country’s innovativeness, i.e. Summary Innovation Index (SII). The score ranges from a minimum value of 0 to a maximum value of 1;

2. Indicators revealing the cultural features of a country, i.e. 6 Hofstede’s cultural dimensions – Power Distance Index (PDI), Individualism versus Collectivism (IDV), Masculinity versus Femininity (MAS), Uncertainty Avoidance Index (UAI), Long Term Orientation versus Short Term Orientation (LTO) and Indulgence versus Restraint (IND). The scores range from a minimum value of 0 to a maximum value of 100.

The indicators were obtained from the European Innovation Scoreboard 2016 (European Commission, 2016) and Hofstede’s center (Itim International, 2017).

Research methods. For the interpretation of the research results, correlation coefficients were calculated and regression analysis was applied. Presence or absence of the relationship between the selected indicators was established using Pearson’s correlation method, followed by a multiple linear regression.

Sample. 27 Member States of the EU (except Cyprus, for which no Hofstede dimensional scores were available).

5. RESULTS AND DISCUSSION

Firstly, it was checked whether all data is normally distributed. The variable “Individualism versus Collectivism” did not have a normal distribution. Therefore, logarithmic, and, later on, second power transformation was applied.

A correlation analysis of Summary Innovation Index and 6 Hofstede’s cultural dimensions was conducted and the results are presented in Table 4. Power Distance, Masculinity, Uncertainty Avoidance and Long Term Orientation all appeared to be negatively related to innovation scores (respectively $r=-.645; r=-.129; r=-.562; r=-.130$). The rest of dimensions - Individualism and Indulgence correlated positively ($r=.828; r=.524$).
Table 4

Correlations between the innovation indicator and cultural dimensions

<table>
<thead>
<tr>
<th></th>
<th>SII</th>
<th>PDI</th>
<th>MAS</th>
<th>UAI</th>
<th>LTO</th>
<th>IND</th>
<th>IDV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summary Innovation Index</strong></td>
<td>1</td>
<td>-.645**</td>
<td>-.129</td>
<td>-.562**</td>
<td>-.130</td>
<td>.828**</td>
<td>.524**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.000</td>
<td>.529</td>
<td>.003</td>
<td>.528</td>
<td>.000</td>
<td>.006</td>
</tr>
<tr>
<td><strong>Power Distance Index</strong></td>
<td>-.645**</td>
<td>1</td>
<td>.207</td>
<td>.581**</td>
<td>.133</td>
<td>-.499**</td>
<td>-.516**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.000</td>
<td>.310</td>
<td>.002</td>
<td>.518</td>
<td>.009</td>
<td>.007</td>
</tr>
<tr>
<td><strong>Masculinity versus Femininity</strong></td>
<td>-.129</td>
<td>1</td>
<td>.160</td>
<td>.081</td>
<td>-.078</td>
<td>.090</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.529</td>
<td>.310</td>
<td>.435</td>
<td>.695</td>
<td>.705</td>
<td>.663</td>
</tr>
<tr>
<td><strong>Uncertainty Avoidance Index</strong></td>
<td>-.562**</td>
<td>.581**</td>
<td>.160</td>
<td>1</td>
<td>.032</td>
<td>-1.40*</td>
<td>-1.55**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.003</td>
<td>.002</td>
<td>.435</td>
<td>.877</td>
<td>.043</td>
<td>.003</td>
</tr>
<tr>
<td><strong>Long Term Orient. vs Short Term Orientation</strong></td>
<td>-.130</td>
<td>.133</td>
<td>.081</td>
<td>.032</td>
<td>1</td>
<td>-1.40*</td>
<td>.140</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.528</td>
<td>.518</td>
<td>.695</td>
<td>.877</td>
<td>.038</td>
<td>.494</td>
</tr>
<tr>
<td><strong>Indulgence versus Restraint</strong></td>
<td>.828**</td>
<td>-.499**</td>
<td>-.078</td>
<td>-.400*</td>
<td>-.408*</td>
<td>1</td>
<td>.394*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.000</td>
<td>.009</td>
<td>.705</td>
<td>.043</td>
<td>.038</td>
<td>.047</td>
</tr>
<tr>
<td><strong>Individualism versus Collectivism</strong></td>
<td>.524**</td>
<td>-.516**</td>
<td>.090</td>
<td>-.557**</td>
<td>.140</td>
<td>.394*</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.006</td>
<td>.007</td>
<td>.663</td>
<td>.003</td>
<td>.494</td>
<td>.047</td>
</tr>
</tbody>
</table>

The relationship between country’s innovation performance and the cultural dimensions Masculinity versus Femininity and Long term orientation versus Short term orientation was not statistically significant (respectively p=.529>0.05; p=.528>0.05). Therefore, the first assumption was that countries with lower levels of power distance and uncertainty avoidance and higher levels of individualism and indulgence could be more successful innovators.

The correlation method can only tell how the values of variables co-vary. Hence, in order to make a stronger claim and demonstrate how independent variables cause the dependent variable, regression analysis was applied. The table below presents the key statistics of the multiple linear regression model. The cultural dimensions explain the SII results of a given country in more than 75%.

Table 5

Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.870*</td>
<td>.758</td>
<td>.737</td>
<td>.078</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Indulgence versus Restraint, Power Distance

A statistical significance test showed that the dimensions Uncertainty Avoidance Index and Individualism versus Collectivism were not significant (respectively p=.178>0.05; p=.480>0.05). Therefore, a regression model was built with SII as a dependent variable and Power Distance Index (coef. -.0,02, p=.016<0.05) and Indulgence versus Restraint (coef. .005, p=.000<0.05) as independent variables. The final results of t-test are presented in Table 6.
Table 6

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.360</td>
<td>.074</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>Power Distance</td>
<td>-.002</td>
<td>.001</td>
<td>-.309</td>
<td>-2.606</td>
</tr>
<tr>
<td>Indulgence versus Restraint</td>
<td>.005</td>
<td>.001</td>
<td>.674</td>
<td>5.693</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Summary Innovation Index

It was checked and approved that the independent variables are non-random, the expected value of the disturbance term is zero, the error term is independently distributed and not correlated, and there is no exact linear relationship between independent variables. Therefore, the created model is in accordance with the Gauss-Markov Theorem.

The final proposed regression model: \( \text{SII} = 0.36 - 0.02 \text{PDI} + 0.05 \text{IND} \). It demonstrates that a 1 point increase in Power Distance score results in a 0.02 point decrease in Summary Innovation Index, ceteris paribus. Meanwhile, a 1 point increase in Indulgence score results in 0.05 point increase in SII, ceteris paribus. As it was indicated before, the top innovators in EU are the Netherlands, Germany, Finland, Denmark and Sweden. These countries also have the smallest power distance (see Figure 1) and highest indulgence scores – see Figure 6 (except Germany, which is more restraint rather than indulgent). This data additionally proves the significance of the model.

Thus, it can be concluded that in order to improve their national innovation performance, countries should try to reduce corruption rates, seek for more equal distribution of power and trust between different hierarchical levels. Moreover, it is very important to change the direction of policy measures so that individuals living in a country could feel happier and healthier. A positive attitude and optimism help in finding inspiration which encourages technological changes. Meanwhile balance between work and leisure, ensured social security, favorable economic conditions, less of stereotypical attitude make a huge impact on psychological health and stability which automatically influences capabilities to innovate.

CONCLUSIONS

The European Union is constantly seeking convergence, yet the innovation performance of members is unequal. Currently, the modest innovators are Romania and Bulgaria while the Netherlands, Germany, Finland, Denmark and Sweden are the innovation leaders.
Academics agree that national culture, especially in terms of Hofstede’s cultural dimensions, has a significant impact on innovation. Nevertheless, though the majority claim that innovative societies have the characteristics of high individualism, low power distance and low uncertainty avoidance, the final results of research studies are dissimilar because of the usage of different variables.

The particular research confirmed that innovation performance in EU is culture-specific. Using Summary Innovation Index as a dependent variable and six Hofstede’s cultural dimensions as the independent ones, it was found out that Power Distance and Uncertainty Avoidance are negatively related to countries’ innovation scores (respectively $r=-.645$; $r=-.562$). On the contrary, Individualism and Indulgence correlated positively ($r=.828$; $r=.524$). The dimensions of Masculinity versus Femininity and Long Term versus Short Term Orientation were not significant.

The regression analysis showed that the final innovation performance can develop on the basis of two dimensions – Power Distance and Indulgence ($SII=0.36-0.02PDI+0.05IND$). The findings concerning the effect of Power Distance are in line with the results of Shane (1993), Kaasa (2013), Herbig, Dunphy (1998), Hussler (2004), Rinne, et. al. (2012) while the discovered effect of Indulgence confirms the research results of Khan, Cox (2017) and Prim, Filho, Zamur, Di Serio (2017). This means that societies willing to increase their national innovation level need to give more emphasis to the distribution of power and demand justification for inequalities so that individuals would feel more motivation to innovate, be recognized and rewarded for these activities. Finally, ensured social security, balance between work and leisure, as well as elimination of stereotypes and strict social norms, could also make a huge impact on capabilities to innovate.

REFERENCES


MACROECONOMICS
INSTITUTIONAL GEARING, INNOVATION AND ECONOMIC GROWTH: EMPIRICAL ESTIMATION FOR 32 ECONOMIES

Abstract

The objective of the paper is to estimate the relationship between institutional gearing and economic growth for 32 economies of the world. For this it is considered that institutional gearing is the positive effect that one institution has over another, but also above all the system that generates innovation. In addition, other variables were included that affect innovation. To do this, we estimate a data model panel with fixed effects for the period 2011-2015. The results show that institutional gearing, high technology exports and capital stock have a positive effect on economic growth. We conclude that the positive effect of the existence of an institution on another institution and on the system of innovation (institutional gearing) has a positive effect on the economic growth of the countries used.

Keywords: institutional gearing, economic growth, innovation
1. INTRODUCTION

Several papers have demonstrated the links between economic growth and innovation (Schumpeter, 1984, Romer, 1990, Grossman and Helpman, 1991, Aghion and Howit, 1998, Nelson, 2007). Barro and Sala-i-Martin (1996) point out that research and development activities and the stock of human capital are the main source of inventions. From the above, a group of studies have confirmed their relationship with innovation and economic growth (Coe, Helpman and Hoffmaister, 2009, Marroquin and Rios, 2012, Rendón, 2014, Valera and Sifontes, 2014). However, there is empirical evidence showing a negative relationship between these variables for specific regions (Benhabib and Spiegel, 1994; Ulku, 2004 and Rendón and Ochoa, 2014).

Fu, Pietrobelli and Soete (2011) show that the promotion of research and development activities is an innovation strategy aimed at the assimilation, adaptation and creation of new technologies; through a panel data study they show that exports have a significant impact on economic growth. These results coincide with Ffrench-Davis’s (2002) research; Ciarli and Giuliani, (2005); Hausmann and Klinger, (2007); Aditya and Roy, (2007); Rodriguez, (2009) and Lee, (2011).

According to Lundvall (1992, 2007, 2010) the process of innovation represents a complex system involving the interaction of a number of agents and institutions. On the one hand, universities, research centres, companies and individuals will share knowledge to create new products and services. On the other hand, institutions will be in charge of providing a regulatory framework that protects their rights, provides the appropriate legal environment, and offers programmes and policies that motivate agents to innovate (Lundvall, 1992, Freeman 1993, Nelson 1993, Dutrénit, 2009). However, the systemic approach to innovation does not recognise (at least explicitly) that the efficiency of one institution increases or decreases the efficiency of another (Aoki, 2007, 2011, Amble, 2007, Fernández and Alfaro, 2011; Lo-Vuolo, 2013; Acemoglu and Robinson, 2013); It is for this reason that we propose the construct of institutional gearing to recognise and measure the collaborative, cohesive and directed work developed by institutions in the processes of innovation (Borges and Saucedo, 2017).

From the institutional gearing construct, we developed an index of institutional gearing for 32 developed and developing economies (6 liberal market economies, 9 coordinated market economies, and 17 hierarchical market economies (Scheider y Korcher, 2012)). Considering the duality of results and including a new variable, it is pertinent to question whether there is a relationship between institutional gearing, R&D investment, capital stock and high technology exports with economic growth. For this, an econometric model of data panel was considered that allows the relationships among different variables to be studied, and to mix the time dimension with the transversal section, which allows making greater statistical inferences (Robledo, 2012).

The results show a significant and positive relationship between institutional gearing, high technology exports and capital stock with economic growth.
growth. However, R&D investment has a negative relationship with economic growth, because such a variable is instrumental and depends on the level of education of the population, the number of researchers, absorption capacities, among others (Benhabib And Spiegel, 1994).

The main conclusions are: the countries with the highest levels of institutional gearing are those that have achieved the greatest economic growth, that is why countries with low institutional mechanisms, especially Latin American ones, require transformations in an institutional capacity (Hall, Sobel and Crowley, 2010 and Doner and Schneider, 2015), since they need to have a regulatory framework that provides security to the economic entities involved in innovation (Saucedo and Borges 2016), thus achieving greater economic growth.

2. LITERATURE REVIEW

Research has demonstrated the positive relationship between innovation and economic growth, with different methodologies, variables and country selection. Research and development activities, human capital and capital stock are strongly and positively related to economic growth (Coe, Helpman and Hoffmaister, 2009, Marroquín and Ríos, 2012, Rendón y Ochoa, 2014, Valera and Sifontes, 2014).

Marroquin and Ríos (2012) show through a study data panel for Mexico, the positive effect of investment in research and development activities with economic growth. On the other hand, Rendón (2014) performs a panel data study for 6 Latin American countries, finding a positive effect among such variables. However, Benhabib and Spiegel (1994) conduct a study for a number of countries and find a negative relationship between human capital accumulation and R&D investment with economic growth rates. Similar results were obtained by Ulku (2004) and Rendón and Ochoa (2014).

According to Fu, Pietrobelli and Soete (2011) the promotion of R&D activities is an innovation strategy aimed at the assimilation, adaptation and creation of new technologies; It can be said that there is a relationship between high technology exports with innovation and economic growth (Ffrencha-Davis, 2002, Ciarli and Giuliani, 2005, Hausmann and Klinger, 2007, Aditya and Roy, 2007, Rodríguez, 2009 and Lee, 2011).

Lee (2011) conducts a study to estimate the relationship of high technology exports with economic growth, in his analysis he considers 71 developed and developing countries; Applying an econometric test, he concludes that economies tend to grow faster when they have specialised in the export of high technology compared to those that specialise in the export of textile or food products. This makes it possible to identify a direct and positive relationship between high technology exports and economic growth. Also, Aditya and Roy (2007) conduct a panel data study for 65 developed and developing countries, finding that the diversification and composition of exports are determinants of economic growth; however, this relationship differs from each group of countries.
Hall, Sobel and Crowley (2010); Dias and Tebaldi (2012) and Kim, Lee, Park and Choo (2012) demonstrate a positive relationship between institutions, human capital and capital stock with innovation and economic growth in developed and developing countries. However, Kim, Lee, Park and Choo (2012) conclude that patent protection is an important variable for innovation and for economic growth in developed countries, but not in developing countries. This is due to the fact that developing country institutions benefit a small group of people (Amable, 2007, Acemoglu and Robinson, 2013, Schneider and Karcher, 2012), as well as lacking a reliable and secure regulatory framework for agents involved in the various economic processes.

Thus, empirical research findings show a mixed picture, making clear the relationship - positive or negative - between determinants of innovation, institutions and economic growth. However, none consider the institutional gearing, which recognises joint and collaborative work (among institutions) aimed at improving innovation processes (Saucedo and Borges, 2016), in addition to being considered a pillar of national innovation systems and economic growth (Borges and Saucedo, 2017).

3. DATA AND METHODOLOGY

3.1 Data

The paper seeks to observe the impact of institutional gearing and the determinants of innovation on the economic growth rate of 32 developed and developing countries for the period 2011-2015.

The institutional gearing indicator contains two sub-indices: input index (stability of laws, rule of law and effective government) and product index (patents, competitiveness and company-university links).

The procedure for calculating the institutional gearing index consists in obtaining a weighted average for both sub-indices:

- The standard deviation was calculated for each variable from the 32 countries
- We divided 0.01 among the standard deviations to find the weighting of each variable

\[ A_i = \frac{0.01}{\text{standard deviation}} \]

- Once the weights were obtained, the weighted average of each sub-index was calculated:

\[ \text{Weights (Z)} = A_i / \sum_{i=1}^{3} A_i \]

- Subsequently, each variable was multiplied by its weight, then added and the value of each sub-index was obtained:
Once the procedure was performed, a simple mean of the two sub-indices was estimated to quantify the institutional gearing indicator.}

Table 1

Variables used in the data panel, unit of measurement, definition and sources.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unit</th>
<th>Definition</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Dependent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Domestic Product, constant prices</td>
<td>% Change</td>
<td>Total value at constant prices of final goods and services produced within a country for a specified period of time, such as one year.</td>
<td>International Monetary Fund, World Economic Outlook Database, April 2016</td>
</tr>
<tr>
<td>B. Independents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional gearing</td>
<td>From 1 to 100</td>
<td>Indicator that recognises the joint and collaborative work carried out by the institutions in the field of innovation. It is subdivided into inputs (effective government, rule of law and stability of laws) and products (number of patents, competitiveness index and collaborative university-enterprise research).</td>
<td>Own elaboration with data from: WIPO (2016); WEF (2016), Global Innovation Index (2016) and Rule of Law (2016)</td>
</tr>
<tr>
<td>High technology exports</td>
<td>US dollars at constant prices, 2010</td>
<td>They are products with high R&amp;D intensity.</td>
<td>World Bank, 2016</td>
</tr>
<tr>
<td>Gross capital formation</td>
<td>% GDP</td>
<td>It includes investment in new and existing fixed assets of the economy plus net changes in the level of inventories.</td>
<td>World Bank, 2016</td>
</tr>
<tr>
<td>Investment in Research and Development</td>
<td>% GDP</td>
<td>Public and private expenditure incurred to increase the stock of knowledge and use of it for new applications.</td>
<td>World Bank, 2016</td>
</tr>
</tbody>
</table>

Sources: Own elaboration with data from World Bank (2016), International Monetary Fund (2016), WEF (2016), GII (2016) and Rule of Law (2016).

The above data were obtained for 32 developed and developing economies, specifically Argentina, Australia, Austria, Germany, Belgium, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Denmark, Ecuador, El Salvador, Ireland, Japan, Mexico, Netherlands, Nicaragua, Norway, Panama, Paraguay, Peru, Sweden, Switzerland, United Kingdom, United States, Uruguay and Venezuela.
3.2 Methodology

With the information provided by international institutions, a panel data analysis was applied for 17 Latin American (Hierarchical Market Economies), 9 coordinated (Coordinated Market Economies) and 6 liberal (Liberal Market Economies) economies in the period 2011-2015.

Considering the impact of institutions on economic growth (Álvarez et al, 2009, Hall, Sobel and Crowley, 2010, Dias and Tebaldi, 2012, Kim et al, 2012) and the perspective that innovation arises as a consequence of knowledge, human capital, investment in R&D activities, and the volume of high-technology exports (Aditya and Roy, 2007; Coe, Helpman and Hoffmaister, 2009; Fu, Pitrobell and Soete, 2011; Marroquin and Rios, 2012, Rendon and Ochoa, 2014), we estimate the following equation:

\[
lgr_t = \beta_0 + \beta_1 \text{lig}_t + \beta_2 \text{lrd}_t + \beta_3 \text{lhte}_t + \beta_4 \text{lcs}_t + \beta_5 \text{time}_t + U_{it}
\]  

Where:

- \(lgr\) = logarithm of the growth rate of GDP
- \(lig\) = logarithm of institutional gearing index
- \(lrd\) = logarithm of research and development activities
- \(lhte\) = logarithm of high technology exports
- \(lcs\) = logarithm of capital stock
- \(time\) = variable that reflects the temporal effect of the panel

This functional specification, and according to the conformation of the data in the variables, is required of the econometric technique of the data in panel. In this way the previous equation was estimated with a fixed effects model.

The Hausman test determined that the best of the models consisted of a functional specification of fixed effects, but not corrected for heteroscedasticity, due to the presence of variance of the residuals in the sample.

The variables mostly appear in their logarithmic transformation because they had better properties than the original variables in the model. As pointed out by authors such as Baltagi (2008), the individual effect is in both cases random; however, the assumption that the individual effect correlates with the set of independent variables is that of panel data with fixed effects; the random effects model assumes that the independent variables and individual effect is zero.

The robust option was estimated considering the heteroskedasticity in the sample to avoid the inefficiency of the parameters of the model and the possibility that these parameters are biased. Temporal effects variables are incorporated to detect some kind of phenomena such as economic crises or reforms in economies.
4. RESULTS

All variables were considered for the 32 countries in the period 2011-2015. The variables together show high significance in the models as set by the p-value of the three types of R2 which reflect a goodness of fit of 0.4658 within the groups, 0.4337 between the groups and 0.2957 in the overall estimate.

Table 2
Economic Growth, Institutional Gearing and innovation determinants: Panel estimation

<table>
<thead>
<tr>
<th>Dependent variable: growth rate of GDP</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
</tr>
<tr>
<td>Lig</td>
<td>1.098 ***</td>
</tr>
<tr>
<td></td>
<td>(.1084)</td>
</tr>
<tr>
<td>lr&amp;d</td>
<td>-7.209***</td>
</tr>
<tr>
<td></td>
<td>(2.204)</td>
</tr>
<tr>
<td>Lhte</td>
<td>.1383***</td>
</tr>
<tr>
<td></td>
<td>(.0320)</td>
</tr>
<tr>
<td>Lcs</td>
<td>5.353**</td>
</tr>
<tr>
<td></td>
<td>(2.20)</td>
</tr>
<tr>
<td>Iyear_2012</td>
<td>.0394</td>
</tr>
<tr>
<td></td>
<td>(.2216)</td>
</tr>
<tr>
<td>Constant</td>
<td>-13.368</td>
</tr>
<tr>
<td>sigma u</td>
<td>7.6979</td>
</tr>
<tr>
<td>sigma_e</td>
<td>0.7196</td>
</tr>
<tr>
<td>Rho</td>
<td>0.9913</td>
</tr>
<tr>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Within</td>
<td>0.4658</td>
</tr>
<tr>
<td>Between</td>
<td>0.4337</td>
</tr>
<tr>
<td>Overall</td>
<td>0.2957</td>
</tr>
<tr>
<td>Obs.</td>
<td>63</td>
</tr>
<tr>
<td>Countries</td>
<td>32</td>
</tr>
<tr>
<td>Estimation method</td>
<td>Fixed effects</td>
</tr>
</tbody>
</table>

Note: coefficients: *, **, *** represent the level of significance at 10, 5 and 1% respectively
Source: own elaboration

The results in table 2 indicate that the growth of economies is closely related to institutional gearing, which implies that economies react favourably to a reliable and secure regulatory framework. The inclusion of variable institutional gearing reinforces the theoretical approaches of modern institutional economics that point to the evolution of societies over time. In this sense, institutional change (for instance: institutional gearing) allows economies to grow faster (North, 1981, 1993; Lundvall, 1992; Edquist and Johnson, 1997; Rodrick, 1999; Acemoglu, Johnson and Robinson, 2005; Hall, Sobel and Crowley, 2010, Dias and Tebaldi, 2012 and Kim, Lee, Park and Choo, 2012).
High-tech exports are another element that has slightly favourable repercussions for the growth of economies; one-percentage-point changes in foreign trade are not accompanied by changes in the same proportion in economic growth. The latter should not be discouraging as in conjunction with a good institutional gearing are prone to better economic performance. These results go hand in hand with those obtained by Ffrencha-Davis (2002): Ciarli and Giuliani (2005); Hausmann and Klinger (2007); Aditya and Roy (2007); Rodríguez (2009) and Lee (2011).

Gross capital formation is one of the key variables in explaining the models of economic growth and, in this sense, the economic growth rate is very sensitive to this variable, since it is directly related with the activities of R&D, high technology exports, innovation processes and institutions (Coe, Helpman and Hoffmaister, 2009, Hall, Sobel and Crowley, 2010, Dias and Tebaldi 2012).

This allows us to visualize the positive and significant influence of the institutional gearing and the determinants of innovation on economic growth, since the degrees of significance are 5 and 1% for the countries analysed. However, investment in R&D activities has a negative relationship with economic growth, such results follow the line of Benhabib and Spiegel (1994) and Ulku (2004), such a lack of significance can be presented because the variable is instrumental and depends on the level of education of the population, the number of researchers, absorption capacities, among others (Benhabib and Spiegel, 1994). In addition, this behaviour is due to the fact that growth rates increased more than R&D spending in developed countries, while in developing countries growth rates were not so high and therefore investment in R&D remained almost the same.

It is essential that the economies characterised by having a low indicator of institutional gearing, generate a significant change in their regulations, laws and programs, since the degree of institutional quality promotes greater economic growth (Hall, Sobel and Crowley, 2010).

5. CONCLUSIONS

This paper explores the relationship of institutional gearing, high technology exports, capital stock and investment in R&D activities with GDP growth rates for 32 countries. We find a relationship among the variables according to the literature. It was shown that countries with a high rate of institutional gearing are those with the greatest economic growth, since the institutional environment is a key aspect of sustained economic growth (Acemoglu, Johnson and Robinson, 2005).

Latin American economies are characterised by low institutional gearing and low economic growth. Therefore, they must focus on developing laws, regulations and programs that work collaboratively and aim to motivate the creation of inventions, thus achieving a higher economic growth.
The institutional gearing construct represents a theoretical contribution to the systemic approach to innovation. This indicator represents a data that measures the gear developed by the institutions involved in the innovation processes. The findings in this study are important in formulating new public policies, regulations and laws aimed at the same goal: to achieve higher innovation rates and greater economic growth.

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constructo de engranaje institucional como elemento del enfoque sistémico de la innovación, Ciencia UAT, 12 (1) (forthcoming).


THE SURVIVAL OF ICT COMPANIES IN
BOSNIA AND HERZEGOVINA: RESEARCH AND DEVELOPMENT TAX CREDIT

Review
UDK: 004:336.564.23
JEL classification: M15, L63, H25, O31

Abstract

Research and Development (R&D) Tax Credit is a widely used incentive designed to encourage companies to invest in R&D. The goal is to stimulate and accelerate the development of certain business branches thus affecting the growth of foreign capital investments, competitiveness on the international market, and the employment rate. After years of business uncertainty, Bosnia and Herzegovina (BiH) seems to have found its competitive advantage in the Information and Communications Technology (ICT) industry. Since 2010 until today there has been an increase of 72% in this sector, with most companies being founded between year 2005 and 2016. Immensely competent staff, relatively cheap workforce, a favourable geographical location and adequate Internet and software infrastructure allow the country to compete with the world’s largest ICT powers on an equal footing. However, regardless of the potentials of the ICT sector in BiH, there is a lack of governmental support concerning the export of software products, inconsistency and incompatibility of national legislation with world standards in terms of online marketing, the high fiscal costs in the industry, and the brain drain of young professionals. Unless they want to leave to chance the development of the country’s strategic sector, the authorized institutions in BiH must immediately create and implement a clear strategy that
would determine the direction of development of the ICT sector. Proposed tool is the state program that would enable R&D tax credits under certain conditions for start-up companies, outsourcing companies, and other formal legal structures that bring multinational ICT companies to the domestic market, thus creating a supportive environment for local ICT companies without interfering with their business models, and allowing unhindered private sector growth that would beget economic development.

**Keywords:** Tax incentives, IT management, Innovation and innovative business models, Entrepreneurship

1. INTRODUCTION

Globalization and new technologies have created additional challenges for the global economy. **Innovation** became a key differentiator between successful and unsuccessful companies, and the contemporary cold war between the countries is battled in the Research and Development (R&D) department. As the key component of the innovative process, R&D is crucial for productivity and profitability of the company. Accordingly, to incentivize the companies to invest in R&D, many countries are creating various tax incentives. Such policies are of extreme importance especially for small and medium enterprise (SMEs) as they allow them to create new products and services, and to increase their market competitiveness quickly and sustainably.

The goal of this paper is to show importance of R&D tax incentives in the Information and Communications Technology (ICT) sector in Bosnia and Herzegovina (BiH): higher incentives contribute to higher business activity and economic growth of the country. The paper will examine the current state of the ICT sector in BiH, focusing on the period from 2010 to 2016. It will also identify the existing obstacles for its further expansion, and explain why current policies don’t bring results. Finally, the paper will propose a national model designed to encourage ICT companies to invest in R&D, and to, thus, accelerate the growth of foreign capital investments, grow competitiveness on the international market, and increase the employment rate.

1.1. Model and Data

For the purpose of this research we have used a special methodology, combining the data from a few different direct and indirect and sources. This paper will have used the data from the recently published study ‘Gender equality in the IT sector in Bosnia and Herzegovina’ (MarketMakers, 2016). The abovementioned study was conducted in the period from 27.04.2016 to 20.05.2016, containing and analysing the data from online surveys, cold-calling and interviews, as well as the archive analysis of the data regarding the IT universities and IT companies. Moreover, we have obtained additional
information through direct interviews with heads of the ICT companies registered in Tron\(^1\) and their employees. Finally, we have analysed information available in the written media and the Internet, as the official data and case-studies regarding this topic are almost non-existent.

2. ICT SECTOR IN BOSNIA AND HERZEGOVINA

The ICT sector in Bosnia and Herzegovina has been experiencing expansion in the last couple of years. From 2010 until today it grew by 72% (Lagumdzic, 2016) with most companies being founded from 2005 to 2014. Market analysis underlines IT experts as the most desirable workforce on the market (Kolektiv, 2015, p.17). Total of 20 IT companies that participated in the survey employ 916 people. Additionally, each company on average hires 17 new employees annually (MarketMakers, 2016, p.11). However, 90% of companies experience issues in the hiring process. 75% of them have a hard time finding employees with relevant work experience and skills, which points out to misbalance between demand and supply in the job market (MarketMakers, 2016, p.11). The workforce deficit is undeniable indeed; it is a worldwide issue in this sector. Nevertheless, the cardinal problem in BiH is actually incompetitiveness of the ICT companies on the global market. Existing and qualified domestic workforce often chooses to work for foreign companies which provide higher salaries and *freelance* benefits. In attempts to beat the trend and to find and keep qualified workforce, ICT companies invest highly in providing desirable work conditions. 75% of the companies from the analysed sample offers flexible work hours, 60% organize weekly teambuilding activities, 60% offer free drinks, 50% provide good conditions for sick leave, and 45% of them allow extra vacation days. Domestic ICT companies also offer coupons for sports activities and parking tickets; they provide free education and free food; and they pay for overtime, insurance, and travels (MarketMakers, 2016, p.12).

Workforce deficit is not the only problem present in the ICT sector in BiH. Lack of legal structure regarding the software export, online marketing inconsistencies with the EU standards, high fiscal costs, and brain drain all stand in a way to the development of this sector. It is absolutely necessary to ease the legal structure that hinders the progress, and to swell the role of the state in this industry. Certainly, one of the ways is to encourage employment by reducing employment costs, thus consequently strengthening the companies, making them more appealing to workforce, and preventing brain drain (Lagumdzic, 2016). However, there are a few issues with such approach and especially in the ICT sector. Available programs of co-financing employment assume an existing pool of skilled, unemployed workers who also satisfy additional criteria such as location, age, gender, etc., which is not the case in this sector. The newest statistics certainly shows an increase in the interest for ICT education and additional training, and a lot has been done in bettering educational system apropos this sector, which will certainly have a positive spill over in the future. However, the

\(^{1}\) TRON Business Intelligence System is the larget base of financial and other companies in Bosnia and Herzegovina.
current availability of skilled workforce that is looking for employment is at low ends. Therefore, the existing programs, even though they contribute to lowering the employment costs for employees, do not solve the problem of fulfilling available work places. Companies still have to invest greatly in additional training and education in order to produce qualified workforce – something that educational system fails to do. Having in mind the complexity of this problem, as well as duration and cost of the process necessary to solve it, it is irrefutable that the government should focus on other policies, especially those that would allow ICT companies to grow organically.

3. RESEARCH & DEVELOPMENT TAX CREDIT

Bosnia and Herzegovina is a middle-income country with underdeveloped capabilities in human capital and low levels of research and development investment, which puts it at the bottom of the list regarding the economic development in the European continent. The country faces numerous challenges concerning capacity for economic growth, which highly relate to extreme underdevelopment of knowledge base of research and technology to foster new sources of competitiveness of the private sector. While no reliable statistics exist, estimates for R&D expenditure are quoted at about 0.12% of GDP (billions of US, PPP) which is less than a tenth of the average for EU-27 of 1.8% (RCI Project Paper, 2016, p.3). Gross expenditures for R&D are estimated between 0.1 and 0.14 percent, which is much lower than in neighbouring Serbia (0.35 percent), Croatia (0.90 percent), Montenegro (1.10 percent) or the EU-27 average (1.84 percent) (WorldBank, 2016, p.5). In 2012, BiH ranked 72 out of 125 countries according to the Global Innovation Index Rank (WorldBank, 2016, p.6). In 2010, only one patent was filed by BiH in the USA, while the average of the Western Balkans is 60 (WorldBank, 2016, p.11). Additionally, capacities to grow are limited. Universities lack resources, connection between academia and private sector is almost non-existent, as well as the connection between science and technology. Moreover, there is no financing structure for R&D, and business sophistication is low and limited by high expenditures related to running a business. There have been certain improvements in recent years, in particular with the adoption of the Strategy for the Development of Science in BiH 2010-2015 (STI Strategy), the Framework Law on Science (2009), and the Framework Law on Higher Education (2007). Consulting and advisory bodies have been created, but implementing agency, monitoring mechanisms and countrywide approach for research and innovation have yet to be established (WorldBank, 2016, p.5).

In this paper we propose a concrete national model designed to encourage companies from ICT sector – the fastest growing sector in the country – to invest in R&D. According to most recent statistics, R&D explains up to 75 percent of differences in total factor productivity growth rates at the country level. Also, at the firm level, R&D expenditures are correlated to higher sales and productivity growth and propensity to export. Innovative firms grow 15 percent faster in
sales and 8 percent faster in labour productivity than non-innovative firms. It is also acknowledged that product innovation, which results from R&D efforts, leads to employment growth (WorldBank, 2016, p.2). Consequently, national economic growth and economic development parameters begin to increase.

Different countries choose different incentives for R&D depending on a few factors (Hutschenreiter, 2002):

1. the level of innovation
2. familiar market inconsistencies in R&D
3. industrial structure
4. the size of the company
5. the kind of a tax system in the company and the country

As previously discussed, the level of innovation in BiH is at low ends with many issues and market inconsistencies. Companies are mostly SMEs and current tax system in the country is deploying most of their budget lines. Having in mind the abovementioned, we argue that tax incentives are the most appropriate incentives to encourage ICT sector to invest in R&D. Other methods, such as subventions, loans or grant are likely to limit companies’ freedom to choose when, where and how to invest, thus creating unnecessary costs and not solving the most pressing issues. Tax incentives allow companies to choose the most productive investment strategies; they reduce risks of investing in a wrong project as companies possess necessary know-how; they reduce administrative costs; and they encourage cooperation and additional investment in private sector. These incentives usually appear in one of three kinds (Kesner-Skreb, 2001):

1. tax deferrals – which enable companies to defer the tax payment;
2. tax allowance – they allow companies to reduce the profit at base for an amount exceeding actual investment in R&D;
3. tax credits – which provide companies with the possibility of reducing the tax liability for part of the R&D expenditure.

We argue tax credits to be most effective in creating both immediate and long-term effects. They would encourage companies to invest in R&D in their sector, to utilize and improve the current know-how, and to stimulate overall private sector to make additional investments. Additionally, we encourage volume-based incentives, where the credit is based on the absolute volume of R&D expenditure, as oppose to incremental-based ones, where the credit is driven by the increase in R&D spending over a base figure. This is because the incremental approach provides limited encouragement to SMEs whose R&D expenditure is at a steady level. To sum, R&D tax credits would enable companies with the possibility of reducing the tax liability for part of R&D expenditures under certain conditions to start-up companies, outsourcing companies, and other formal structures that bring multinational ICT companies to the domestic market, thus creating a supportive environment for local ICT companies without interfering with their business models, and allowing unhindered private sector growth that would beget economic development.
The positive example of the abovementioned approach is present in the UK where the similar scheme was introduced in 2000 for SMEs. Any company that carries out R&D is eligible to qualify, and definition of R&D is broad and takes place across the whole range of company operations as long as the key principles are respected, which include (HMRC CIRD manual):

- seeking to achieve an advance in science or technology
- subject to scientific or technological uncertainty
- conducted in a systematic and thorough fashion

The UK government introduced volume-based structure, where the credit is based on the absolute volume of R&D expenditure. They also identified eligible cost which include staffing costs, consumable costs, software, subcontractors and research contribution. Up to 33.35 percent of qualified expenditure is available as a cash credit for SMEs, and 11 percent for large companies. To ensure proper execution, a working group was established, known as the R&D Consultative Committee. Member include representative from governmental tax department, treasury, delegates from the industry, and other business, technical and trade bodies (HMRC CIRD manual). As at 2013, about 100 000 claims have been made and over £9.5 billion of relief has been claimed (HMRC, 2015).

Many other examples of similar policies are present in countries across the world. In most of them, an elaborate system of financial incentives is available to fuel R&D for both domestic investments and growth opportunities abroad. Such systems constantly shift aiming to align with ever-changing political and social landscapes. In some countries, mentioned incentives are designed to foster overall growth, while in others, they target specific sectors. Most developed incentives that bring about important growth results are listed and summarized in Deloitte’s analysis on tax credits (Deloitte, 2015):

- Australia: SMEs are eligible for a refundable tax credit of 45 percent of qualified research expenses (QREs), but QREs are not deductible. SMEs are entities with gross receipts of less than AUD 20M that are not more than 50% controlled by exempt entities.
- Austria: A refundable 12 percent volume based tax credit is available for all taxpayers to the extent the credit exceeds the amount of the company’s tax liabilities (10 percent for fiscal years commencing before 1 January 2016).
- Belgium: Excess tax deductions may be converted into a tax credit refundable after five years if not utilized.
- Canada: 35 percent federal ITCs for small Canadian-controlled private corporations (CCPCs) on up to CAD 3M of qualified expenditure per year. This limit applies to all corporations in an associated group. The corporate group of companies must have less than CAD 800K of taxable income and less than CAD 50M in taxable capital employed in Canada (TCEC) to qualify for the refundable ITCs. These caps are based on the prior year.
- France: If research tax credits are not utilized within three years, the taxpayer receives a refund for the unutilized credit. Research credits are refundable for SMEs, new companies, young innovative companies and companies facing financial issues.

- Ireland: Unused credits may be carried back one accounting period and carried forward indefinitely. If there are unutilized credits after the carry back, the taxpayer may apply for a refund (payable over three years), subject to certain limitations and caps.

- Singapore: There is an option to convert up to SGD 100K of tax deductions into a non-taxable cash grant for each qualifying tax year from 2013 to 2018 at the rate of 60 percent (i.e., SGD 60K).

- Spain: The requirements that must be met to qualify for refundable credits limit opportunities for refunds.

While different countries use different policy approaches, they all share economic and social benefits that come from investments in R&D. Truth be, the magnitude of economic effects is hard to measure, but Ernst & Young did a good job in the USA in 2005 (EY, 2005):

- 17,700 corporations claimed $6.6 billion in R&D Tax Credits on their tax returns in 2005. Approximately 11,300 C corporations and 6,400 S corporations claimed the credit.

- Corporations claiming the R&D Tax Credit in 2005 divided up by size are 29% had $1 million in assets or less, 25% with assets of $1–$5 million, 25% with assets of $5–$25 million, and 21% with assets of $25 million or more.

- 14,953 corporations with less than $50 million in total assets claimed more than $891 million in Federal Research and Experimentation Tax Credits.

- 71.2% of these corporations had a Standard Industrial Classification in some type of Manufacturing, the remaining 28.8% include Services, Information, and Agriculture.

The abovementioned examples represent a summary of policies conducted across the world. While they all vary in duration, structure, eligible costs, and amount of tax credit, they all certainly create many benefit for companies and countries in which they are being implemented. Top 5 benefits defined by Swanson Reed (2017) include:

- The start-up business benefit: the R&D tax credit is designed to help all business finance R&D initiatives, which means clear benefits for small and start-up companies. In the USA, such companies can apply up to $250 000 of R&D credit against payroll liability.

- Increases company’s bottom line: R&D tax credit helps companies reduce state tax liabilities, but it also becomes their asset in increasing the market values. Money save as a result of such incentives can be re-invested in further R&D activities, thus additionally create company’s growth and cash flow.
Motivates national innovation: tax credit helps companies improve their products, processes, technology, and software, which, in turn, helps them generate higher company profits and incentivize better human capital.

Maintains competitiveness in the globalized economy: incentives such as tax credits help companies to become more efficient and to gain technological advancements that strengthen their presence in a global market place. R&D tax credits improve company’s ability to compete in the global market, and they, therefore, help countries to compete in the global economy.

Makes investing in R&D worthwhile: in most of the countries the definition of companies that can apply for tax credits is wide, allowing a great number of companies to claim and enjoy benefits, as long as they invest in R&D.

Having in mind the abovementioned, it is even clearer that Bosnia and Herzegovina should immediately begin working on defining and implementing R&D tax credits policies in the ICT sector, and from there, expand to other fast growing sectors.

4. CONCLUSIONS

In the recent years the importance of investing in R&D in became one of the main discourses between economic and political leaders in BiH. It has been agreed that top priorities for BiH are to design and implement policy measures to encourage investments in R&D and innovation capabilities in the business sector, and to stimulate the development of an Information and Communications Technology (ICT) cluster and provide the cluster with common infrastructure and other tools for joint R&D and innovation (WorldBank, 2016). Additionally, STI defined tax incentives for companies that invest in research activities as one of its nine priority goals for the short-term period. Unfortunately, specific instruments have not been defined and concrete actions did not take place.

In this paper, we underlined R&D tax credits for the companies in ICT sector as the key policy to achieving economic growth in the future. Such policy would increase R&D spending which would result in a corresponding increase in productivity thus leading to per capita income growth. Moreover, advocated policy is cost-effective and sustainable, connecting the public research institutions and the private sector, within and across industries.

REFERENCES


THE EFFECT OF THE FINANCIAL CRISIS ON EMERGING MARKETS. A COMPARATIVE ANALYSIS OF THE STOCK MARKET SITUATION BEFORE AND AFTER

Original scientific paper
UDK: 336.76:338.124.4
JEL classification: G01, G15

Abstract
In this paper the authors present the findings of an analyses carried out to establish whether the BRIC’s stock market returns were affected by the U.S. financial stress during the 2008 Financial Crisis. To do this the authors studied the relationship between the U.S. Stock Markets and the BRIC countries’ stock and bond market returns. They carried out a regression analysis which consisted of running an equation of the dependent variable - the BRIC’s stock market returns, against a number of regressors - explanatory variables, which include the U.S.’ industrial production, the U.S.’ unemployment rate, the U.S.’ S&P500, the Michigan confidence index, the BRIC’s consumer price index, the industrial production, the Gross Domestic Product and the consumer price index of each individual country; Brazil, Russia, India and China respectively. Then the authors used a single-equation time series model to explain spillover effects emanating from the US onto the BRIC markets. They analysed the whole data series from 2003 to 2014. Then sub-divided this data to analyse the post crisis effects on the BRICS equity market. The index of Brazil, Russia, India and China respectively - BOVESPA (Brazil), MICEX (Russia), NIFTY (India) and China Security Index (CSI300) were the dependent variables of the model. Moreover, the model takes the US stock market index, the S&P500 as a benchmark
variable. Results obtained, revealed that the BRICs were subject to a spillover effect during and following the financial crisis.

Keywords: BRICS, Financial Crisis, Emerging Markets

1. INTRODUCTION

The Goldman Sachs, 2003 paper “Dreaming with BRICs: the Path to 2050”, highlighted that Emerging Markets (EM) are one of the drivers of global growth. Noting that Brazil, Russia, India and China, collectively referred to as BRIC countries, could in the light of the regulations, which are supportive of foreign investment as well as the free flow of capital, further increase their potential development (Bhar & Nikolova, 2008). In fact, BRIC countries represent a class of the middle-income emerging market economy, distinctively large in size, which can prove useful to enhance economic growth in the world economy (Marcelo, Yoshino, & Machado de Sousa, 2013). Therefore, it is important to understand the way regional and global financial events affect emerging market returns and the volatility of returns. Hence, to understand how such markets respond when in financial stress (Bhar & Nikolova, 2008).

This paper focuses on the impact the financial crisis had on BRIC countries, with respect to the United States, the original source of the crisis. The paper analyses the contagion effects of financial shocks from the US to stock and bond markets in BRIC countries and its effect on the volatility of such markets. Moreover, this paper also analyses whether the BRIC countries were affected by US financial stress.

Many investors assume that the inclusion of emerging markets in investment portfolio would enhance their risk-return tradeoff. Research shows that this is in fact true and adding developing economies that are less correlated with advanced economies allows for ideal diversification (Hallinan, 2011). However, in light of the past financial crisis, this is highly debatable. Hence, this paper will also seek to answer questions imposed by the modern portfolio theory, based on the work of Markowitz (1952) and the Capital Asset Pricing Model (CAPM). That is, whether investors can improve their positions by diversifying the portfolio and investing into different classes of financial securities and whether developing countries really serve as diversification opportunities to investors following the financial crisis. (Aloui, Ben Aissa, & Nguyen, 2011).

Since emerging equity markets are undergoing periods of constant change and transformation, understanding the effect of integration with advanced economies such as the U.S., Europe and Japan and assessing the weaknesses of the equity markets in times of financial stress and during regional financial crisis, would prove beneficial to investors, who are constantly seeking new ways of lowering their risks by diversification (Chittedi, 2009).
2. LITERATURE

Between 2006 and 2010, Gross Domestic Product (GDP) growth of the BRICs outperformed growth in advanced economies. During this period, emerging-economic market growth accounted for approximately 60% of worldwide GDP growth. Apart from the fast economic growth, emerging markets showed financial stability and economic resilience during the financial crisis of 2008. However, while GDP output of advanced economies plunged, developing countries output remained constant (World Economic Forum, 2012).

2.1. Contagion

Claessens et al. (2000), define contagion as the intensification of cross-market integration after a shock in a country or group of countries. They explain that contagion is defined by the degree to which stock prices move together across markets relevant to comovement when financial markets are not faced by financial stress. The variables that make a country vulnerable to contagion and through which contagion is spread are still unknown. Hence, it is difficult to propose other policies apart from more rigid financial architecture to effectively reduce and prevent the risks of contagion.

Forbes and Rigobon (1999) examine stock market co-movements. They analysis the different theoretical models as to how linkages between countries can be calculated. Such statistical measures include correlation in asset returns, the probability of a speculative attack and the transmission of shocks or volatility. They also explain what contagion is and develop models on how to interpret spread mechanisms and suggest that the standard tests to examine cross-market correlation in stock market returns is biased and propose a simple method on how to adjust the correlation coefficient from bias. They propose an understanding of why stock markets are integrated during periods of financial stability. To study the spread of the U.S. financial crisis to BRIC countries, Bianconi et al. (2013), use simple unconditional volatility measures, vector autoregressions (VAR), cointegration, and conditional volatility and correlations amongst stock and bond market returns.

Studies conducted by Eichengreen and Park (2008), refer to the recent financial crisis to show that emerging markets where unable to disassociate themselves from the U.S. financial crisis. Although developing markets and their exposure to U.S. financial markets is limited, with enforced regulation on the market, they show that, one cannot imply that the region is without any weakness. They also comment on the impression that China’s economy grew so much that it segregates the whole region from U.S. market spillovers. However, they note that although this may contain some truth, one cannot deny that Asia’s economy is still linked to the United States both by trade and by stock market co-movements. Dooley and Hutchison (2009), study the spillover effects of the U.S. financial crisis to developing countries. The authors’ interest in the topic is related to the fact that emerging markets took upon themselves reforms such as increases in reserves and reduction of government deficits that should have isolated them
from financial shocks from other countries. Their paper analysis how emerging markets’ CDS spreads were affected by U.S. financial shocks. They study about, what news affected CDS spreads and the magnitude of these news on emerging markets. Their research shows that the U.S. has large economic and statistical influence on emerging markets and that news moved markets consistently. However, the authors are not sure whether the linkages between the U.S. and developing countries have changed or whether the importance of events originating from the United States have changed. This is often referred to as the ‘decoupling-recoupling’ debate. They report that financial indicators show that emerging markets were decoupled from the United States. It seemed that the growth rates of emerging and advanced economies were heading in opposite directions. However, after the bankruptcy of Lehman Brothers in September 2008, correlations between emerging markets and the U.S. also rose substantially (markets recoupled). The paper also identified that major news, such as the bankruptcy of Lehman Brothers and news on the real U.S. economy affected CDS spreads in emerging markets.

Llaudes et al. (2010), analyse the characteristics of the initial crisis and the heterogeneous transmission amongst emerging markets. The paper studies the impact of the financial crisis on the decline in actual growth and decline in stock markets, as well as the decline in credit growth. Since emerging markets where affected by an external crisis, the paper focuses on exterior vulnerabilities of emerging markets. The paper shows that countries that had linkages with advanced economies and are more open to trade where severely hit by the crisis, They experienced steeper falls in output during the crisis. While, countries that strengthened external weaknesses prior to the financial crisis, later went into recession. They found a significant and a healthy relationship between emerging markets’ reserves and their decline in growth during the financial crisis.

Nikkinen et al. (2013) investigated the transmission of the US subprime crisis onto BRIC countries and examined the impact of the financial crisis on the stock markets and equity markets of the industrial and financial sectors. They use a bivariate GARCH-BEKK model utilising daily total return indices and estimate four pair-wise models. They identify the extent of contagion by examining the industrial and financial sectors of BRIC equity markets. Results show that there is evidence of contagion between the US and BRIC markets due to direct linkages both in terms of returns and volatility and that Russia and India’s equity returns as well as financial and industrial sector returns where influenced by US equity market movements prior to the financial crisis. They also found clear evidence of contagion, however, the authors show that only Russia’s financial sector was severely affected by the fall of the Lehman Brothers.

Zouhair et al. (2014) examine the joint behaviour of US and BRIC equity markets. The authors found strong linkages between both stock markets during the US subprime mortgage crisis. Result show evidence of contagion in Brazil and interdependence between China, India and Russia. The study also shows high correlation coefficients for Brazil, meaning that the economy is integrated with the United States in all periods that were studied. Also, the study addresses the general idea that countries with low integration in the global economy prove to be
good diversification possibilities. This is the case for India and China which have a low correlation coefficient compared to that of Brazil, these results are in line with studies by Aloui et al. (2011) and Bianconi et al. (2013).

2.2. Cross-Market Linkages and integration

Aloui et al. (2011), examine the cross-market linkages and interdependences between BRIC equity markets and the United States during the financial crisis. The authors find that the dependency on the U.S. is more persistent in countries, which depend on commodity prices such as Brazil and Russia – than for countries which economic growth is dependent on finished products such as China and India. Chittedi (2009) studied the long run co-integration relationship between BRIC countries and the U.S., UK and Japan using the Granger causality, Johansen co-integration and Error correction Mechanism. The authors found that the U.S. and Japan are influencing the Indian stock market due to international trade activities. However, the study states that India is far less influencing the UK, Brazil, China and Russia. They also show that the BRICs and advanced economies where highly co-integrating during the period of the study. Bianconi et al.’s (2013) results show that in fact for bond markets, India is isolated from the other BRIC countries.

Morales and Gassie (May 2011) study the relationship between BRIC markets and energy markets. The authors highlight the weak integration levels between the Chinese financial markets, energy markets and the U.S. equity markets. They also show that Brazil, Russia and India are more sensitive to financial shocks arising from the United States as well as energy market instability. Bhar and Nikolova (2008) study the linkages between the BRICs, their regions and the world by using a bivariate EGARCH structure, this allows for time varying condition correlation of index equity returns from such markets. They explain that the proposed model allows researchers to analyse the impact of a number of events on BRIC markets and the correlation equity index returns. The authors found evidence that India is the most integrated country from the BRICs on both regional and global levels, followed by Brazil and Russia. China is the most isolated country and hence the least volatile. This means that China could be a great opportunity for investors to diversify their portfolio due to the close nature of China’s financial markets. Results obtained indicate that none of the BRIC countries impact the volatility of world market returns.

2.3. News, Volatility and their effect on correlations

Aggarwal et al. (1999) studied the events that have the largest impact on emerging stock markets volatility. Results show that the periods of greater volatility shifts are inter-related with important country-specific political, social and economic events such as the Mexican Crisis and the Marcos-Aquino conflict in Phillipines.

Bae and Karolyi (1994) results suggest that news from a particular market seem to affect the short-term volatility of stock prices in foreign markets. They
studied the relationship of the joint dynamics of the Nikkei stock average and the S&P 500 stock index over the 1988-1992 period. The authors noted that bad news from both local and foreign markets seem to have a bigger impact on return volatility than good news.

Beirne et al. (2009), studied the volatility spillover from advanced economies to emerging economies. They found that that volatility in emerging stock markets tended to be higher in periods where mature markets where in turbulence periods.

Bianconi et al. (2013), explain that the behaviour of asset classes affect the co-integration relationship between U.S. financial stress and BRIC nations. Using Multivariate GARCH models and dynamic conditional correlations, they shed light on the role of news and volatility and explore how these affect the correlations between national stock markets during the global financial crisis. Contrary to what was found by Mun and Brooks (2012), who show that news does not have a significant effect on the correlations and that the majority of correlations are strongly explained by volatility, Bianconi et al. (2013), note that news and volatility are equally important for stock returns but news are less important than the volatility in BRIC markets when referring to bond and stock markets returns altogether.

2.4. Stock and bond market Correlations and Yield Spreads

Baur (2007) shows that in developing countries stock-bond market correlations are highly influenced by cross-country influences rather than stock and bond market interaction. He tests the relationship of cross-country, cross-asset stock and bond market linkages. Results show that U.S stock markets influences stock and bond market returns of the eight developed countries. Aslanidis and Christiansen (2012) adopt quantile regressions to study the realized stock-bond correlation based upon high frequency returns. They explain that when the correlation is highly positive or highly negative, correlation dependence behaves differently.

Bunda et al. (2009) examine the comovement in emerging bond market linking to internal and external factors during high market volatility episodes. They analysis eighteen emerging markets between 1997 and 2008 and proposed a conceptual framework based on emerging market spreads and cumulative correlations. The study sheds light on the drop in emerging markets spreads and the factors that contributed to this. They note that the decline was not only led by external factors but also to the fact that emerging countries improved their country fundamentals. They show that the period between 2003 and 2008 had very low levels of contagion in the bond markets. This period was characterized by the global financial crisis and explain that correlations between bond markets increased after the crisis. They also show that the mentioned phenomenon explains the increase in emerging bond markets’ volatility.

Siklos (2011), studies twenty-two emerging markets to understand the determinants of bond yield spreads in the period 1998-2009. He examines
the linkage between volatility and bond yield spreads. The study shows that emerging markets aren’t all affected in the same way and cannot be treated equally. Results show that Asian bond markets were decoupled from other developing economies during the financial crisis, agreeing with Bianconi et al. (2013) with regards to the isolation of Indian bond markets.

Bianconi et al. (2013), show that BRICs cannot be considered to be isolated from the financial stress posed by the United States. Results show that Brazil and Russia are very much likely to suffer financial stress, however, India is the least correlated market. They also investigate whether emerging markets can prove to be good diversification opportunities for investors. The study shows that during that period, China’s stock markets respond less to financial stress when compared to other nations. Also, Indian bond markets seem to be isolated from external factors and hence are less influenced by financial stress and external factors posed by the United States.

3. METHODOLOGY

3.1. Sample selection

The sample data for the whole period, 2003 to 2014, was collected using the Thompson Reuters platform. This data was split into two periods. The first period related to the whole period from 2003 to 2014, the second data period related to the period after the financial crisis between 2009 and 2014. Due to lack of monthly data for the gross domestic product, the researcher chose to use industrial production (IP) as a proxy, since except in the case of Brazil, it correlates well with the former variable. The authors used the Eviews application software to conduct the correlation analysis between the two variables for all countries. Although the authors did not find serious correlation between Brazil’s GDP and industrial production, they still felt that this variable was the best proxy to use for GDP data.

3.2. Research Model

The researchers used a single-equation time series model to try and explain spillover effects emanating from the US onto the leading emerging markets. This model was chosen so as to enable them to focus on the first two moments, that is, the mean and the constant variance. The research assumes a normal distribution and does not analyse the skewness and kurtosis of the data. This requires the authors to consider a time-variant variance, which is not possible with other models such as the EGARCH. This would also mean that the third and fourth moments do not affect the analysis of the study.

The researchers first analyse the whole data series, that is from 2003 to 2014. Then analyse the post crisis effects on the emerging equity market. The dependant variable of the model will be the index of Brazil, Russia, India and China respectively. Hence, the authors use the following indices: BOVESPA (Brazil), MICEX (Russia), NIFTY (India) and China Security Index (CSI300).
The model will take the US stock market index- the S&P500 as a benchmark variable. The independent variables included in the model are the US industrial production acting as a substitute to the GDP, the US unemployment rate (UR), US non-farm payrolls (NFP) and the Michigan Confidence Index (MCI) as well as the industrial production of each of the BRIC countries and their consumer price index (CPI). By considering these variables in this research model, the authors can understand whether the BRICs’ equity markets were isolated from the US financial stress,

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\begin{align*}
\text{BOVESPA}_{\text{Br}} &= B_1 \times (\text{S&P500}) + B_2 \times (\text{IP}_{\text{US}}) + B_3 \times (\text{UR}_{\text{US}}) + B_4 \times (\text{NFP}_{\text{US}}) + B_5 \times (\text{MCI}_{\text{US}}) \\
& \quad + B_6 \times (\text{IP}_{\text{Br}}) + B_7 \times (\text{CPI}_{\text{Br}}) + U
\end{align*}
\]

\[
\begin{align*}
\text{NIFTY}_{\text{In}} &= B_1 \times (\text{S&P500}) + B_2 \times (\text{IP}_{\text{US}}) + B_3 \times (\text{UR}_{\text{US}}) + B_4 \times (\text{NFP}_{\text{US}}) + B_5 \times (\text{MCI}_{\text{US}}) + B_6 \\
& \quad \times (\text{IP}_{\text{In}}) + B_7 \times (\text{CPI}_{\text{In}}) + U
\end{align*}
\]

\[
\begin{align*}
\text{MICEX}_{\text{Ru}} &= B_1 \times (\text{S&P500}) + B_2 \times (\text{IP}_{\text{US}}) + B_3 \times (\text{UR}_{\text{US}}) + B_4 \times (\text{NFP}_{\text{US}}) + B_5 \times (\text{MCI}_{\text{US}}) \\
& \quad + B_6 \times (\text{IP}_{\text{Ru}}) + B_7 \times (\text{CPI}_{\text{Ru}}) + U
\end{align*}
\]

\[
\begin{align*}
\text{SHCOMP}_{\text{Ch}} &= B_1 \times (\text{S&P500}) + B_2 \times (\text{IP}_{\text{US}}) + B_3 \times (\text{UR}_{\text{US}}) + B_4 \times (\text{NFP}_{\text{US}}) + B_5 \times (\text{MCI}_{\text{US}}) \\
& \quad + B_6 \times (\text{IP}_{\text{Ch}}) + B_7 \times (\text{CPI}_{\text{Ch}}) + U
\end{align*}
\]

### 3.2. Method of Analysis

The authors first plotted the data to determine visually, whether the data collected is stationary or not, and then conducted an augmented Dickey-Fuller unit-root test to test for autocorrelation and whether the variables have a unit root. If the variables had an ADF test statistic lower than the test critical value of 1%, this meant that the data has a unit-root and the variable is non-stationary.

The researchers used the EViews software package to analyse the regression. Through the various tests available on EViews the authors were able to test whether the model is econometrically correct and test it using diagnostic checking. One important aspect of EViews is that it allows the researcher to use regression analysis with the aim to explain how the independent variables affect the dependent variable. The authors used EViews to explain whether the BRIC equity indices where indeed affected by the US financial stress.

They compare the two sub-periods against each other and made reference to the various statistical indicators as shown by the regression. They then tested for the significance of the variables and checked whether these should be included in the model. Variables found to be statistically significant meant that they explained the dependant variable. On the other hand if the variable was not significant, the variable did not have an effect on the stock market. The authors then interpreted the meaning of the coefficient term as well as the p-values and ran a white-test to check for heteroscedasticity, then computed the F-statistic to check whether the regression’s variables were jointly statistically significant. Then they checked the R-squared, to see how much of the dependent variable was explained by the model and what was captured by the error term (u).
3.3. Limitations of the theoretical model

The authors note that this model has some limitations that result in endogeneity. The first limitation of the model is ‘the omitted variable bias’, which generally results from limited sources of data. Clarke (2005) explains that it is difficult to include all the variables that influence the dependant variable in the regression equation, hence, the omitted variable bias is inevitable.

Also, a second limitation to the model, is ‘simultaneity’, also referred to as ‘the direction of causality’. The authors refer to the fact that some independent variables are dependent on the dependant variable, hence, the independent variables can have some correlation with the error term.

As noted above, the authors were also faced with limited data, due to the fact that the GDP variable was only available quarterly or annually. Therefore, they used a proxy for GDP. Moreover, for India’s NIFTY stock index the authors only managed to obtain data from 2005, which resulted in fewer observations, limiting the ability to analyse the effect of the financial crisis on India.

4. TESTS AND CONCLUSIONS

4.1. Testing for Stationarity

Figure 4.1.1 and 4.1.2 present a graphical representation of the variables that the researchers used in the theoretical method for the period 2003 to 2014 while 4.1.3 and 4.1.4 represent the variables used for the second data set, 2009-2014. This shows a strong indication of the presence of non-stationary data since trends are noticeable in the presented data.

![Graphical representation of the variables for the period 2003 to 2014](image)

Figure 4.1.1 - Graphical representation of the variables for the period 2003 to 2014
Figure 4.1.2 - Graphical representation of the variables for the period 2003 to 2014

Figure 4.1.3 - Graphical representation of the variables for the period 2009 to 2014
Figure 4.1.4 - Graphical representation of the variables for the period 2009 to 2014

Figure 4.1.5 - The Augmented Dickey-Fuller test

Figure 4.1.5 shows that the variable has a unit root. Table A1.1 and A1.2 (Appendix 1) illustrate the variables that make up the theoretical method and which of these are either stationary or non-stationary as shown by the ADF. Table A1.1 portrays variables from the whole sample, i.e. 2003 to 2014 while table A1.2 shows the second sub-data set, 2009-2014, respectively. It is noted that non-stationary data is not suitable to use in its present form; hence, in order to eliminate this problem the authors took the first differences.

The ADF was re-run once the data was re-arranged by taking the first difference or second differences. The variation in data was found to vary around a constant mean, which gives an indication that stationarity was achieved at 99% confidence level.
4.2. Testing for Heteroscedasticity

Homoscedasticity is a desirable OLS property which states that the variables should have a constant variance (\( \text{Var}(u_t) = \text{E}(u_t) = \delta_s^2 \)). Variables not having a constant variance are said to be heteroscedastic, which might be a problem when regressing the equation using OLS, since the constant (C) and the Beta (\( \beta \)) would not have minimum variance, hence are said to be biased. Therefore, the variable is said to be no longer BLUE (Best Linear Unbiased Estimators).

The authors conduct heteroscedasticity tests also known as the White’s test to check for heteroscedasticity and remove any interpretational bias. EViews provides the authors with the results which test for heteroscedasticity as well as the auxiliary regression, which is a useful source when determining the source of heteroscedasticity of a multiple variable regression.

In the case of the White’s test, the null hypothesis states that there is homoscedasticity, while the alternative hypothesis states that heteroscedasticity is present in the regression. If the p-value are more than 5% or 0.05, it is assumed that there is no presence of heteroscedasticity. On the other hand, if the p-values are lower than 0.05, the data has to be corrected to support the assumption of homoscedasticity. The software package used gives a quick option that adjusts data to account for heteroscedasticity. The results of the White’s test for the variables used are shown in appendix 2 (figures A2.1 to A2.8) and most of the data have high p-values, hence the null hypothesis was accepted, meaning that the data is homoscedastic. On the other hand for cases such as India, data were adjusted using heteroscedasticity-consistent standard errors.

In appendix 3 (figures A3.1-A3.4), the authors illustrate how the OLS and standard errors changed after adjusting for heteroscedasticity when compared to that illustrated in appendix 1.

4.3. Result Analysis

Once diagnostic checks were carried out, the authors were able to analyse results from the OLS estimations (Appendix 3).

4.3.1. The OLS’s descriptive statistics

4.3.1.1. Brazil

![Figure 4.3.1.1 Brazil’s OLS estimation descriptive statistics (2003 - 2014)](image)
Brazil’s data for the whole period is symmetrical with a value of 0.26 and slightly skewed to the right. The kurtosis of Brazil’s overall data is 2.8 and is very close to kurtosis of normal distribution (±3.0), however when compared, the estimation’s data is flatter than normal distribution with a wider peak, meaning that the data is widely spread around the mean. Further to that, the Jarque-Bera test probability well exceed the 0.01 p-value. Therefore the data follows a normal distribution.

Brazil’s post-crisis regression, shows descriptive statistics similar to the overall estimation period. The skewness is 0.17, which means that the data is lightly skewed to the right close to symmetry. The kurtosis is 2.69 and when compared to the kurtosis of normal distribution it is found that the data is flatter and widely spread around the mean. The Jarque-Bera test statistic is very low 0.64, however, the p-value is 0.72 which exceeds the 0.01 value. Therefore the data follows a normal distribution.

4.3.2. Russia

When looking at Russia’s data for the whole period, the skewness is 0.174. Since skewness is a measure of symmetry, this value shows that practically the data is symmetrical, slightly skewed to the right. The author notes that the kurtosis is very close to the value of 3, this shows that in the case of Russia the data is very close to normal distribution. The Jarque-Bera test p-value is relative high compared to 1%. Therefore the data follows a normal distribution.
Conversely, Russia’s post-crisis descriptive statistics are different from the overall period. The author notes a skewness of -0.2, thus showing that the data is practically symmetrical but slightly skewed to the left. The kurtosis is 4.87, higher than the kurtosis of normal distribution (±3.0). This value concludes that Russia’s post-crisis distribution has a sharper and higher peak, with longer tails showing that the data is concentrated around the mean.

4.3.3. India

Figure 4.3.3.1 highlights India’s overall descriptive statistics. The skewness value is 0.152 which depicts the data as almost symmetrical and slightly skewed to the right. Comparing the country’s kurtosis, 3.85 to normal distribution (±3.0), the author concludes that the distribution’s central peak is higher and sharper while it has longer tails. The Jarque-Bera test statistic confirms that the data follows normal distribution since the p-value is 0.174, hence since greater than 0.01. Therefore the data follows a normal distribution.
Furthermore, figure 4.3.3.2 portrays the India’s post crisis distribution. The skewness value of 0.57 implies that the distribution is skewed to the right. A kurtosis of 4.82 signifies that the distribution is sharper than normal distribution, with the values concentrated around the mean. The Jarque-Bera probability of 0.001 argues that the data does not follow normal distribution due to its value being less than 0.01. Therefore the data does not follow a normal distribution.

Figure 4.3.3.2 India’s post-crisis OLS estimation descriptive statistics (2009 - 2014)

4.3.4. China

With respect to China, the distribution shows a skewness of -0.247, which shows that the data is skewed to the left. Further to that, when compared to normal distribution’s kurtosis (±3.0), a kurtosis of 4.3 shows that the data is concentrated around the mean. The Jarque-Bera test statistic deduces that the data is normally distribution since it has a value of 1.8%. Therefore the data follows a normal distribution.

Figure 4.3.4.1 China’s OLS estimation descriptive statistics (2003 - 2014)

On the other hand, China’s post-crisis distribution has a negative skewness with value of -0.55, which shows that it is skewed to the left. Further to that, the distribution has a kurtosis of 5.94 which is higher than the kurtosis
of normal distribution (±3.0). In turn, this means that the distribution’s central peak is higher and sharper, with longer tails and the data is distributed closely to its mean. The Jarque-Bera test statistic concludes that the distribution does not follow normal distribution since it has a p-value lower than 1%.

![Histogram of residuals](image)

Figure 4.3.4.2 China’s post-crisis OLS estimation descriptive statistics (2009 - 2014)

### 4.3.4. Interpreting the data

The $R^2$ of the OLS estimations are presented in appendix 3 (Figures A3.1 to A3.8). Figure A3.1 illustrates the Brazilian regression for the overall data period. The authors note that the model explains almost half of the variation in Brazil’s stock market returns (45%). Also, since the $R^2$ increases with the number of variables added to the model regardless of their significance, the adjusted $R^2$ is given. This shows that the model explains 42% of the total sum of squares. Figure A3.2 shows the post-financial crisis OLS estimation. The $R^2$ captures 54% of the variation on the dependent variable. This means that 54% of the variation in Brazil’s stock market return is captured by the variables present in the model. When looking at the f-statistic, both have a p-value of 0.00. This means that the equation as a whole is statistically significant, in other words, the model makes economic sense.

Figure A3.3 illustrates the $R^2$ of the Russian OLS estimations, which is 40%, which means that 40% of the variation in Russia’s stock market returns between the period 2003 to 2014 is explained by the model. Figure A3.4, shows a $R^2$ close to 56%, this means that the model explains more than half of the variation in Russia’s stock market returns between the period 2009 to 2014. When the researchers reviewed the f-statistics, they could find that both models as a whole are statistically significant, meaning that they have economic meaning.

The authors then considered the $R^2$ and f-test of the Indian OLS estimations. When interpreting the estimation for both periods shown in figures A3.5 and A3.6, they noted that for the overall data period, the $R^2$ is 50%, while for during the post-crisis period it was 42%. This means that the model explains 47% and 42% of the total variation in Nifty’s stock index returns during both periods, respectively. The F-test in both cases has a p-value less than 0.05 which indicates that all together the model is statistically significant.
Finally, the authors considered the $R^2$ and f-test of the China’s OLS estimations. As noted in figures A3.7 and A3.8, the model only explains 22% for the overall period, and 16% of the total variation in China’s stock market returns for the post-crisis period. This means that the researchers left out other important factors that affect China stock market index returns, specifically not including all variables in the model. As with regards the F-test, for the overall data period the model is statistically significant as a whole with a p-value lower than 0.05. Conversely, for the post-crisis analysis, the f-statistic has a p-value of 0.21, thus the model as a whole is not statistically significant.

The authors also looked at the statistical significance of the beta coefficients and compared it to previous research. A variable is said to be statistically significant when the p-value is lower than 0.05. Eichengreen and Park (2008) argue that China’s economy grew so much that the whole region was isolated from the US financial stress. Morales and Gassie (2011) who study the relationship between BRIC financial markets, energy markets and US markets, state that there are weak integration levels between the three markets. The researchers note that the results obtained are not in line with the research carried out by the aforementioned. Table 4.3.4.2 shows China’s OLS estimation. This shows that the US S&P500 stock index is individually statistically significant. As a result, this indicates that China’s stock market returns are in reality not protected against US financial stress. Also, the researchers found that the relationship between China’s stock market returns (CSI300) and US Stock Market returns (S&P500) is in line with findings by previous authors. Showing that the US had a more severe impact during the whole period, which diminished after the financial crisis. Moreover, the paper by Morales and Gassie (2011) concludes that Brazil, Russia and India are more susceptible to US financial shocks. This is in line with the results acquired by the researchers where the SPX variable (S&P500) is statistically significant in all periods, having a p-value of 0.000. Also, the beta coefficients for these countries are quite high in both periods analysed and confirm other author’s findings.

The researchers refer back to the paper by Bianconi et al. (2013) since their results are close to the ones shown in this paper. The study conducted by Bianconi et al. (2013) shows that the BRICs cannot be considered as segregated from the financial stress emanating from the United States. Bianconi et al. (2013) state that Brazil and Russia are very likely to suffer from spillovers transmitted from the US, however, it is shown that India is the least correlated market. In addition to that, the authors outline that Russia’s Micex stock market returns where affected not only by the US S&P500 stock index but also by the US’s unemployment rate. They explain that the US unemployment rate’s beta coefficient is in line with the findings of previous authors, hence an increase in US unemployment rate leads to an increase in Russia’s stock market returns. In turn, both periods were affected by the unemployment rate on similar levels. The results illustrated in tables 4.3.4.1 and 4.3.4.2 below show that the results obtained are in-line with Bianconi et al.’s (2013) interpretation. However, the researchers’ findings about India differ. The results show that India is integrated and affected by the US financial stress as equivalent to Brazil and Russia.
In conclusion, from the results obtained the authors deduce that the US S&P500 stock market index influences the BRICs stock market returns, mainly the BOVESPA, MICEX Index, Russia (MCX10), NIFTY and CSI300 stock returns in both periods. In other words, the BRIC emerging market economies are still not isolated from the major spillover effect transmitted from the US. In reality, irrespective of the volatility in both periods, the US still has a big impact on the stock returns on emerging economies.

Table 4.3.4.1 Table illustrating the variable’s Coefficient and p-values for Brazil and Russia

Table 4.3.4.2 Table illustrating the variable’s Coefficient and p-values for India and China
REFERENCES


Carlsons, B. 2015. ‘How The Unemployment Rate Affects Stock Market Performance | Pragmatic Capitalism’.


Intercapital.ro. 2015 ‘Interpretation Of Skewness & Kurtosis’.


APPENDIX

Appendix 1

1: Stationarity tables
1.1: Data period 2003-2014

<table>
<thead>
<tr>
<th>Variable</th>
<th>Stationarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil Bovespa Stock Index</td>
<td>Stationary</td>
</tr>
<tr>
<td>Brazil Consumer Price Index</td>
<td>Stationary</td>
</tr>
<tr>
<td>Brazil Industrial Production</td>
<td>Stationary</td>
</tr>
<tr>
<td>China Industrial Production</td>
<td>Non-stationary</td>
</tr>
<tr>
<td>China Consumer Price Index</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>China Composite Stock Index 300</td>
<td>Stationary</td>
</tr>
<tr>
<td>India Nifty Stock Index</td>
<td>Stationary</td>
</tr>
<tr>
<td>India Consumer Price Index</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>India Industrial Production</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>Russia Micex10 Stock Index</td>
<td>Stationary</td>
</tr>
<tr>
<td>Russia Consumer Price Index</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>Russia Industrial Production</td>
<td>Stationary</td>
</tr>
<tr>
<td>Michigan Confidence Index</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>S&amp;P500 Stock Index</td>
<td>Stationary</td>
</tr>
<tr>
<td>US Industrial Production</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>US Non-Farm Payrolls</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>US Unemployment Rate</td>
<td>Non-Stationary</td>
</tr>
</tbody>
</table>

Table A1.1: Illustrates whether the data of such variables was found to be stationary or non-stationary (2003 to 2014 data sample).

1.2: Data Period 2009 - 2014

<table>
<thead>
<tr>
<th>Variable</th>
<th>Stationarity</th>
</tr>
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<tbody>
<tr>
<td>Brazil Bovespa Stock Index</td>
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</tr>
<tr>
<td>Brazil Consumer Price Index</td>
<td>Stationary</td>
</tr>
<tr>
<td>Brazil Industrial Production</td>
<td>Stationary</td>
</tr>
<tr>
<td>China Industrial Production</td>
<td>Non-stationary</td>
</tr>
<tr>
<td>China Consumer Price Index</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>China Composite Stock Index 300</td>
<td>Stationary</td>
</tr>
<tr>
<td>India Nifty Stock Index</td>
<td>Stationary</td>
</tr>
<tr>
<td>India Consumer Price Index</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>India Industrial Production</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>Russia Micex10 Stock Index</td>
<td>Stationary</td>
</tr>
<tr>
<td>Russia Consumer Price Index</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>Russia Industrial Production</td>
<td>Non-Stationary</td>
</tr>
<tr>
<td>Michigan Confidence Index</td>
<td>Non-Stationary</td>
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<td>S&amp;P500 Stock Index</td>
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<td>US Industrial Production</td>
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<td>US Non-Farm Payrolls</td>
<td>Non-Stationary</td>
</tr>
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<td>US Unemployment Rate</td>
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</tbody>
</table>

Table A1.2: Illustrates whether the data of such variables was found to be stationary or non-stationary (2009 to 2014 data sample).
Appendix 2

2: Testing for Heteroscedasticity

2.1: The data period 2003 to 2014

Figure A2.1: White’s test for Heteroscedasticity (Brazil’s 2003-2014 OLS)

<table>
<thead>
<tr>
<th></th>
<th>F-statistic</th>
<th>Prob. F(35,106)</th>
<th>Prob. Chi-Square(35)</th>
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<td>1.281013</td>
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<td>Scaled explained SS</td>
<td>33.80595</td>
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Figure A2.2: White’s test for Heteroscedasticity (Russia’s 2003-2014 OLS)

<table>
<thead>
<tr>
<th></th>
<th>F-statistic</th>
<th>Prob. F(35,106)</th>
<th>Prob. Chi-Square(35)</th>
</tr>
</thead>
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<tr>
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<td>Obs*R-squared</td>
<td>36.13154</td>
<td>0.4155</td>
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<td>Scaled explained SS</td>
<td>32.01725</td>
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Figure A2.3: White’s test for Heteroscedasticity (India’s 2003-2014 OLS)

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<th>Prob. Chi-Square(35)</th>
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<td>48.02723</td>
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<td>Scaled explained SS</td>
<td>58.22216</td>
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Figure A2.4: White’s test for Heteroscedasticity (China’s 2003-2014 OLS)

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<th>Prob. Chi-Square(35)</th>
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<td>Obs*R-squared</td>
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<td>Scaled explained SS</td>
<td>24.90081</td>
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</table>
2.2: The data period 2009 to 2014

Figure A2.5: White’s test for Heteroscedasticity (Brazil’s 2009-2014 OLS)

<table>
<thead>
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</tr>
<tr>
<td>Scaled explained SS</td>
</tr>
</tbody>
</table>

Figure A2.6: White’s test for Heteroscedasticity (Russia’s 2009-2014 OLS)

<table>
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<td>Obs*R-squared</td>
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<tr>
<td>Scaled explained SS</td>
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</tbody>
</table>

Figure A2.7: White’s test for Heteroscedasticity (India’s 2009-2014 OLS)

<table>
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</table>

Figure A2.8: White’s test for Heteroscedasticity (China’s 2009-2014 OLS)

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<td>Obs*R-squared</td>
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Appendix 3

3: OLS estimations

3.1: Brazil

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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<tbody>
<tr>
<td>C</td>
<td>0.006150</td>
<td>0.007206</td>
<td>0.714664</td>
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<td>BRAZILCPI</td>
<td>-0.002104</td>
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<tr>
<td>BRAZILIP</td>
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<tr>
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</tr>
<tr>
<td>SPX</td>
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<td>0.0000</td>
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<tr>
<td>USIFD1</td>
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<td>USURD1</td>
<td>0.015042</td>
<td>0.021054</td>
<td>0.714451</td>
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R-squared: 0.449135  Mean dependent var: 0.011440
Adjusted R-squared: 0.420359  S.D. dependent var: 0.062649
S.E. of regression: 0.050438  Akaike info criterion: -3.081464
Sum squared resid: 0.340892  Schwarz criterion: -2.914938
Log likelihood: 226.7838  Hannan-Quinn criter. -3.013785
F-statistic: 15.60771  Durbin-Watson stat: 1.457080
Prob(F-statistic): 0.000000

Figure A3.1: Brazil’s OLS estimation for the period 2003 to 2014

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
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<td>-0.220894</td>
<td>0.8259</td>
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<tr>
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<td>-0.690912</td>
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</tr>
<tr>
<td>BRCPI</td>
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<td>-0.569444</td>
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<tr>
<td>SPX</td>
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<td>7.926842</td>
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<tr>
<td>USIP</td>
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<td>0.010442</td>
<td>1.017873</td>
<td>0.3126</td>
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<td>-1.509134</td>
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</tr>
<tr>
<td>USURD1</td>
<td>0.036374</td>
<td>0.034800</td>
<td>0.104529</td>
<td>0.2999</td>
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</tbody>
</table>

R-squared: 0.539475  Mean dependent var: 0.003393
Adjusted R-squared: 0.488305  S.D. dependent var: 0.057620
S.E. of regression: 0.041217  Akaike info criterion: -3.434117
Sum squared resid: 0.107028  Schwarz criterion: -3.179167
Log likelihood: 129.9112  Hannan-Quinn criter. -3.332732
F-statistic: 10.54291  Durbin-Watson stat: 1.698699
Prob(F-statistic): 0.000000

Figure A3.2: Brazil’s OLS estimation for the period 2009 to 2014
3.2: Russia

Figure A3.3: Russia’s OLS estimation for the period 2003 to 2014

Figure A3.4: Russia’s OLS adjusted for heteroscedasticity (2009-2014)
3.3: India

Figure A3.5: India’s OLS adjusted for heteroscedasticity (2003-2014)

Figure A3.6: India’s OLS adjusted for heteroscedasticity (2009-2014)
3.4: China

Figure A3.7: China’s OLS estimation for the period 2003 to 2014

Figure A3.8: China’s OLS estimation adjusted for heteroscedasticity (2009 to 2014)
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RELATIONSHIP WITH EDUCATION
EXPENDITURE AND ECONOMIC GROWTH IN OECD COUNTRIES: A PANEL DATA ANALYSIS

Original scientific paper
UDK: 37:330.35
JEL classification: C 33, O10, I22, I25, O47

Abstract
From the second half of the twentieth century, human capital has begun to be added in an increasing manner, especially to the basic production factors considered as labor, capital, entrepreneur and natural resource in classical economic theory. With this structural change in production, the development of human capital has become of great importance for internal growth models. Nowadays, as the strength of the arm power is greatly reduced in production, the brain power has increased in importance, and the idea of people investing in themselves has begun to be widely accepted. Education, which is one of the important dynamics of human capital with health, plays an important role in this context. Increasing the level of success with the higher education level, recruitment of qualified workers, better employment opportunities and increased earnings are significant contributors to growth and prosperity.
in OECD countries. In this study, the relationship between educational expenditures and economic growth for selected 19 OECD countries is analyzed using the panel data method.

**Keywords: Educational Expenditures, Growth, Panel Data Analysis**

1. **INTRODUCTION**

The concept of education; is defined as the process of creating changes in the behavior and thought structure and skills of the individual. Education is also expressed as processes in which the individual acquires behavioral patterns such as ability and attitude in the society (Çalışkan et al., 2013: 31). Education determines the value of countries in the global marketplace with the available skills in the labor and the price of these skills.

The main problem of the human capital theory is the contribution of the increase in the amount of labor to economic growth. In the context of this problem, two important conferences were held in 1961 on how investment in human beings influenced the extent of economic growth. One of them was concentrating on education and other one is health. The structure of human capital is largely shaped by education and health. Thanks to the education and health investments made on the same individual, the individual is more productive both as a producer and as a consumer in the society (Mushkin, 1962: 129). As service and production systems become more complex, workers with higher education levels are sought. In order to attract and retain skilled workers, societies must balance the right balance between promoting general equality and providing strong economic incentives. With increasing levels of achievement on population, better employment opportunities and increasing gains due to education level, OECD countries are growing and contribute to prosperity. In this context, the growth of labor income in GDP, in some of the education categories, is a simple measure to demonstrate its impact on high skills and economic growth (OECD, 2012: 26). Individuals want to learn more because more training means more earnings and a better job. For many, education means more schooling and a source of social mobility. Similarly, nation states and regions are concerned with raising the average level of education in their population. Because it is thought that raising the efficiency of labor will increase the quality of business in the economy and trigger economic growth.

The interest of researchers in the mutual relationship between economic growth and educational expenditure, in particular with the Inner Growth Theories, is in line with the foreground of human capital. In this study, which is trying to show the effect of economic growth on educational expenditures, 20 selected countries including our country were analyzed using data for 1995-2010 period.
2. EDUCATION AND ECONOMIC GROWTH RELATIONSHIP

The purpose of the economic activities that individuals put forth in social life is fulfill to their basic needs. While fulfill the basic needs, it is necessary to struggle with the limitations encountered. Looking at the economy as a whole, it is aimed at increasing and maintaining the prosperity levels of the society are a basic economic policy.

Economic growth; Is defined as number and volume changes in such a way that the basic sizes of the national economy are sustained per capita income growth. The realization of economic growth depends mostly on the efficient use of the human and physical capital that the country has, and at the same time, depends of increase those capitals (Afşar, 2009: 87). Nowadays, while the strength of arm power is greatly reduced in production, the role of brain power and machines is increasing. This structural change in production, while reducing the physical role of people in the production process, gives people more time for activities such as AR-GE. This can only be achieved by making the necessary investments for human capital.

The question of the effect of education on economic growth has begun with the emergence of human capital. Until the 1960s, the concept of human capital, which was not much emphasized, gained importance along with the theories of internal growth. Education plays an important role in the development of human capital, which is the key to scientific and technological progress. Education is also seen as a sustainable path to economic prosperity and is of utmost importance in the fight against unemployment, ensuring social equality, ensuring solid foundations, awareness and cultural vitality (Mekdad et al., 2014: 56).

3. EDUCATIONAL EXPENDITURES IN OECD COUNTRIES

Raising the level of equipment for growth and prosperity in OECD countries can increase earnings through better employment opportunities and higher education levels. On average, about half of the economic growth is related to the increase in labor income at tertiary level of education. In France, Norway, Switzerland and the UK, 60% or more of the GDP is produced by who is taking tertiary education (OECD, 2012: 38).

In most OECD countries, high school education is a level of education completed by all students and trying to the minimum level of education is being increased. The policies applied to raise the minimum level of education vary from country to country. The economic conditions and financing structures that countries have are directly affecting their education expenditures (Altundemir, 2008: 52). All government spending on education (except for international sources) is classified into three categories: central, regional and local. In some
countries education financing is centralized, while in some countries funds are centralized after regional and local allocations. For example, Education expenditures in France, Ireland, the Netherlands, Spain, Luxembourg, Italy, Greece and Portugal are mainly covered by the central government on a general budget, as in Turkey. In Germany, Austria, Belgium and the UK, it is covered by local governments. In Sweden, Denmark and Finland, education expenditure has been covered by public and local governments, but responsibility has been passed on to local governments (Egeli and Hayrullahoğlu, 2014: 99).

The ways in which public money is used for education in OECD countries are different. Public funds can flow directly to institutions or can be directed to institutions through state programs or by means of handles. Public expenditure on education supports that educational institutions and living expenses of students and other private spending outside institutions. Public and private spending in educational institutions does not even account for 10 per cent of OECD countries’ total GDP (Temple, 2002: 58).

4. EDUCATION AND ECONOMIC GROWTH RELATIONSHIP LITERATURE

There are many studies that examine the relationship between education and economic growth. In some of these studies, there was a positive and significant relationship between education and economic growth, and the result was that economic growth positively affected education.

Schultz (1963) found that raising the education level of the labor was a major contribution to growth both in developing and developed countries.

Hicks (1980) analyzed the social and private benefits of educated investments in his work. The result is that investment in human resources has increased the growth rate.

Another study that should be mentioned regarding the subject is the work of Uzawa (1965) and the contribution of Lucas (1988). In these models, the output level is defined as a function of the human capital. Long-lasting and constantly growing have stated that human capital can grow without borders. In Uzawa and Lucas’s model, it has been suggested that the quality of education may increase over time.

Romer (1990) concludes that with the contribution to internal growth models based on research and development analysis he found that the stable state growth rate is partly due to the level of human capital. Even if there is a sudden increase in stocks of human capital, it can increase its growth rate indefinitely.

Benhabib and Spiegel (1994) measure the effect of human capital investments on the economic growth rate using the mass production function. In the measurement of human capital, they used various variables such as education, literacy rates and secondary education enrollment rates. Regardless
of the training variable selected, the coefficients were found to have a negligible or negative effect.

According to Weiss (1995), those who are better educated and have more work experience receive higher wages. This increases the productivity of employees.

Quiggin (1999) asserts that education has particularly non-monetary benefits, as well as the decline in economic growth, leading to the cut-off of educational spending.

Devarajan et al. (1996) focused on the impact of public spending on health, education, infrastructure, etc. on economic growth. Education spending within public spending has been associated with economic growth negatively and not important.

Engelbrecht (1997) also argues that human capital is not only considered as a factor in the study, but is also an important input of new growth theories. The effects of R & D expenditures in the empirical model are also estimated.

Barro and Lee (1993) used training data for the population aged 25 years and over. According to the results, they found that the increase in productivity is due to the change in average education years.

Patrinos and Psacharopoulos (2002) conducted a study to analyze the effects of educational investments on society. In Africa, Asia, and Latin America, the incidence of investments in primary education is high, but this ratio is low in OECD countries. Moreover, the regression between the schooling rate and the per capita income is the result of the fact that the schooling rate coefficient is both lower and higher in emerging economies.

According to Çoban (2004) study, the increase in primary school enrollment rate is due to the increase in economic growth, which is attributed to the increase in high school enrollment rate. In addition, the increase in college schooling is due to the increase in high school enrollment rate, and the increase in education expenditures is reason for the increase in high school enrollment rate.

Blankenau et al. (2007), a study was conducted using panel data from 23 developed countries, and a positive relationship was found between public education expenditures and long-term growth when the government’s budget constraint was taken into consideration.

Şimşek and Kadılar (2010) showed that both the increase in exports and the accumulation of human capital in Turkey in the 1960-2004 period for the Turkish sample in the long term supported the long-term economic growth and the increase in GDP increased the human capital accumulation.

Çalışkan et al. (2013) reached the conclusion that in the study covering the years 1923-2011, the excess resource allocated especially to higher education in Turkey will support the development process.
Eriçok and Yılancı (2013) analyzed the relationship between educational expenditure and economic growth using the boundary test approach and found that the effect of educational expenditures on economic growth is temporary.

Kıran (2014) examined the impact of educational expenditures on economic growth for 18 Latin American countries and found a cointegration relationship between economic growth and educational spending, excluding the seven countries.

5. MATERIALS AND METHODS

In this study the relationship between education expenditure and economic growth was examined for 19 OECD member countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Iceland, Ireland, Italy, Japan, Mexico, Netherland, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK) using panel data estimations (models) based on annual data for the period 1998-2012.

Cross-sectional data, time series and panel data consisting of time series or the combination of cross-sectional data and time series are used for analyzing the relationship between economic variables statistically and econometrically. The functional form of panel data econometrics is as follows:

\[
Y_{it} = \alpha + \beta_i X_{it} + \mu_t + \gamma_i + \epsilon_{it},
\]

As it can be seen in the functional form of panel data econometrics, \(t\) shows the time and \(i\) shows the sections. In this equation, an individual effect exists. This effect cannot be observed by independent variables, does not change depending on time, but includes characteristics peculiar to sections (Baltagi, 2005).

In panel data econometrics, the next step after converting cross-sectional data and time series data to the panel system is to determine if the cross-section and period effects can be explained by the fixed effects model or the random-effects model. The fixed effects model creates a different fixed value for each cross-sectional unit. In the fixed effects model, it is assumed that the slope coefficients which are shown with “\(\dagger\)” do not change, but fixed coefficients show differences among only cross-sectional data or time data or among both types of data. If the differentiation occurs only depending on time, these types of models are named as one-way time dependent fixed effect models. If a differentiation occurs in panel data depending on both time and section, these models are named as two-way fixed effects model. However, because the cross-sectional effect is generally investigated more in panel data studies, panel data models are generally considered as one-way models (Hsiao, 2002). One-way and two-way fixed effects models can be seen in the Eq. (2) and (3) given below:
In this equation, it is considered that the error terms are distributed independently and identically in a manner that their variances equal to zero. In the fixed effects model, the fixed effects estimator allows the fixed constant to differ across cross-section units by estimating different constants for each cross-section (Baltagi, 2005).

The changes that occur depending on cross-sections or both cross-sections and time are observed when they are integrated into the model as a component of the error terms. The advantage of random effects model over the fixed effects model is that, without loss of degree of freedom, the random effects model allows the inclusion of the effects that are out of the sample to the model. The functional relation for the mentioned models can be demonstrated as follows:

\[
Y_t = (a_i + \mu_i) + \beta_{it} X_{it} + \ldots + \beta_{kit} X_{kit} + e_t \quad (2)
\]

\[
Y_t = (a_i + \mu_i + \lambda_t) + \beta_{it} X_{it} + \ldots + \beta_{kit} X_{kit} + e_t \quad (3)
\]

Here, Eq. (4) shows the one-way random-effects model and Eq. (5) shows the two-way random-effects model. The error terms in random effects have two components. The first of these components is the \(i\) value of the cross-section \(i = 1,2,\ldots,N\), which does not vary over time, and the \(vit\) value which signifies the rest of the cross-section where the values are correlated over time. In this model, the \(i\) value, which signifies the cross-section effect, and the \(vit\) value, which includes the remaining error terms, are independent from each other. In addition, these two components of the error term are independent from an observed value of each independent variable. For this reason, the ordinary least squares estimators are consistent and unbiased estimators of the error term components (\(i\) and \(vit\)) shown in Eq. (4) and (5) which explain the random effects model (Özer and Çiftçi, 2008).

5.1. Results and discussion

The data used in the study was taken from the official OECD database on an annual basis for 19 OECD member countries including Australia, Austria, Belgium, Canada, Denmark, Finland, France, Iceland, Ireland, Italy, Japan, Mexico, Netherland, New Zeland, Norway, Portugal, Spain, Sweeden, Switzerland, UK.

In the study, the simple interaction between education expenditure and economic growth in 19 OECD member countries for the years between 1998 and 2012 can be seen in the graph (Fig. 1)
According to Granger and Newbold (1974), a regression analysis between the variables does not provide reliable results in case non-stationary data is used. For this reason, stationarity should be checked before performing the regression analysis. The studies conducted by Levin and Lin (1992, 1993), Breitung and Meyer (1994), Quah (1994), Maddala and Wu (1999), Hadri (2000) and Im et al. (2003) suggest the use of unit root tests in panel data models. Recently, the most commonly used unit root tests in the studies performing panel data unit root tests on a sectoral basis are Levin-Lin and Im Pesaran Shin Tests. Unit root tests of Levin, Lin & Chu (LLC), Breitung, Im, Pesaran and
Shin (IPS), Augmented Dickey-Fuller (ADF), PP (Phillips Peron) and Hadri were used in our study.

### Table 1

<table>
<thead>
<tr>
<th>Method</th>
<th>Test Statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>-3.71350</td>
<td>0.0001</td>
</tr>
<tr>
<td>Breitung t-stat</td>
<td>-1.17572</td>
<td>0.1199</td>
</tr>
<tr>
<td>Im, Pesaran and Shin W-stat</td>
<td>-0.99435</td>
<td>0.1600</td>
</tr>
<tr>
<td>ADF - Fisher Chi-square</td>
<td>48.9858</td>
<td>0.1092</td>
</tr>
<tr>
<td>PP - Fisher Chi-square</td>
<td>107.075</td>
<td>0.0000</td>
</tr>
<tr>
<td>Hadri Z-stat</td>
<td>4.01816</td>
<td>0.0000</td>
</tr>
<tr>
<td>Heteroscedastic Consistent Z-stat</td>
<td>9.67807</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

*Source: authors’s calculations*

The panel data unit root test results for foreign trade are given in Table 1. According to the unit root test results are given in Table 1, Breitung t-stat, Im, Pesaran and Shin W-stat, ADF - Fisher Chi-square, Hadri Z-stat, Heteroscedastic Consistent Z-stat unit root tests pointed out that the GDP variable had a unit root, Levin, Lin & Chu, PP - Fisher Chi-square unit root tests pointed out that the GDP variable had not a unit root.

As a next step, it is possible to see if the EE variable has a unit root with the help of the results shown in Table 2.

### Table 2

<table>
<thead>
<tr>
<th>Method</th>
<th>Test Statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>-1.76326</td>
<td>0.0389</td>
</tr>
<tr>
<td>Breitung t-stat</td>
<td>2.38516</td>
<td>0.9915</td>
</tr>
<tr>
<td>Im, Pesaran and Shin W-stat</td>
<td>-0.00377</td>
<td>0.4985</td>
</tr>
<tr>
<td>ADF - Fisher Chi-square</td>
<td>42.8407</td>
<td>0.2712</td>
</tr>
<tr>
<td>PP - Fisher Chi-square</td>
<td>78.0820</td>
<td>0.0001</td>
</tr>
<tr>
<td>Hadri Z-stat</td>
<td>10.2063</td>
<td>0.0000</td>
</tr>
<tr>
<td>Heteroscedastic Consistent Z-stat</td>
<td>10.5376</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

*Source: authors’s calculations*

It can be shown in Table 2, the EE variable had a unit root according to the all of the results except PP - Fisher Chi-square unit root test.

The existence of a unit root in both series was detected as the result of the findings obtained from unit root tests and it was concluded that the series was nonstationary. For this reason, Pedroni, Kao and Johansen Fisher Cointegration Tests were used in the remainder of the study. In the next step after detecting the existence of a panel unit root in the series, the presence of cointegration was investigated with the help of Table 3.
**Pedroni Cointegration Test Results for GDP and EE**

<table>
<thead>
<tr>
<th>Method</th>
<th>Test Statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel v- Statistic</td>
<td>0.049849</td>
<td>0.4801</td>
</tr>
<tr>
<td>Panel rho- Statistic</td>
<td>-4.932418</td>
<td>0.0000</td>
</tr>
<tr>
<td>Panel PP- Statistic</td>
<td>-7.913372</td>
<td>0.0000</td>
</tr>
<tr>
<td>Panel ADF- Statistic</td>
<td>-8.169209</td>
<td>0.0000</td>
</tr>
<tr>
<td>Group rho- Statistic</td>
<td>-1.524287</td>
<td>0.0637</td>
</tr>
<tr>
<td>Group PP- Statistic</td>
<td>-8.620864</td>
<td>0.0000</td>
</tr>
<tr>
<td>Group ADF- Statistic</td>
<td>-8.094477</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

*Source: authors’s calculations*

It is possible to prepare the hypothesis to be used in this analysis in such a way:

**H₀**: There is no cointegration between the variables.

**H₁**: There is cointegration between the variables.

As it can be shown in Table 3, the null hypothesis was accepted in all the tests except panel v- statistic in the regression equation formed by the mentioned variables so the existence of cointegration was rejected.

After confirming the cointegration through Pedroni Test, it would be possible to test the existence of cointegration also by performing the Kao Test (Table 4).

**KAO Cointegration Test Results for GDP and EE**

<table>
<thead>
<tr>
<th>Method</th>
<th>Test Statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF</td>
<td>-2.915927</td>
<td>0.0018</td>
</tr>
<tr>
<td>Residual variance</td>
<td>1.73E+08</td>
<td></td>
</tr>
<tr>
<td>HAC variance</td>
<td>42209362</td>
<td></td>
</tr>
</tbody>
</table>

*Source: authors’s calculations*

It is possible to prepare the hypothesis to be used in this analysis in such a way:

**H₀**: There is no cointegration between the variables.

**H₁**: There is cointegration between the variables.

The null hypothesis was rejected based on the results of the Kao Cointegration Test. That is, the existence of cointegration was confirmed. In the same way, the Johansen Fisher Panel Cointegration Test, which is another technique to check the existence of cointegration, can be analyzed with the help of Table 5.
Johansen Fisher Cointegration Test Results for GDP and EE

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Fisher Stat (from trace test)</th>
<th>Probability</th>
<th>Fisher Stat (max-eigen test)</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>95.83</td>
<td>0.0000</td>
<td>93.39</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 1</td>
<td>51.18</td>
<td>0.0749</td>
<td>51.18</td>
<td>0.0749</td>
</tr>
</tbody>
</table>

Source: authors’s calculations

According to the results of the Johansen Fisher Panel Cointegration Test, the null hypothesis that there is no correlation between the two variables was rejected and the alternative hypothesis supporting the existence of cointegration was accepted.

Of the three tests which were conducted in order to determine the existence of cointegration in the model, Pedroni, Kao and Johansen Fisher Panel Cointegration Tests indicated the existence of cointegration. However, the Pedroni Cointegration Test (Only the Panel v- Statistic) revealed that there was no correlation between the two variables. Since the majority of the tests we performed revealed the existence of cointegration in the model, it was accepted that for the OECD countries, there was a correlation between education expenditure and economic growth in the long run.

In the next stage, panel data regression estimations were performed. The Hausman Test was used in order to determine whether the fixed effects model or the random effects model was valid for the 19 OECD member countries. According to the Hausman Test, the fixed effects model yielded more effective results for all the countries subject to the study. Based on this report, the fixed effects method was used in panel data regression estimation.

Table 6

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>27866.54</td>
<td>1734.309</td>
<td>16.06780</td>
</tr>
<tr>
<td>EE</td>
<td>0.163985</td>
<td>0.132060</td>
<td>1.241744</td>
</tr>
</tbody>
</table>

R2: 0.527  D-W Stat.: 2.086  F Stat. (Prob): 8.3476 (0.000)

Source: authors’s calculations

According to Table 6 in the model which was developed based on the fixed effects model, the approximate value of the Durbin Watson (2.086) statistics was found to be below the (2) value which was accepted as significant. As it can be shown in Table 6, based on the results obtained in the present study conducted for 19 OECD member countries, we conclude that the education expenditure has not had an effect on GDP. Since the probability value is smaller than the table value (0.2155 > 0.005).
6. CONCLUSION

Human capital is the knowledge and skills contained by the labor force. In relation to this statement, the knowledge that the labor force will obtain is provided through training. In this case, education is very important in terms of human capital. Another reason why education is so important is that it gives people the ability to increase productivity in the capital (Türkmen, 2002: 67). The labor force in an economy grows with the increase in population, population, and participation of the labor force in a certain part of this increasing population. The qualification or quality of the labor force, especially the education of the schools and the workplaces, also grows as the human capital of the country grows. Human capital can be expressed as the sum of knowledge and skills contained by the labor force (Kibritçioğlu, 1998: 207).

In the present study, the economies of 19 OECD member countries. Accordingly, first, the panel data system consisting of time series and cross-sectional series was used for analyzing the relationship between the variables. In the next step, using panel data, the existence of panel unit root in the mentioned variables was investigated. The test results indicated the presence of a unit root in the variables and the finding was reported.

After this step, a panel cointegration test was conducted and it was reported that a panel cointegration relationship existed among the variables consisting of the data obtained for 19 OECD member countries. Afterwards, it was investigated whether the fixed effects model or the random-effects model would be used in the model by using the Hausman Test statistics. Based on the results of the test statistics, it was reported that the fixed effects model yielded more effective results for all the countries subject to the study.

Based on the final model on which structural and diagnostic tests were performed, it was concluded in this study of 19 OECD member countries that the education expenditure has not had an effect on GDP.

When viewed from literature, most of the studies on the subject -overlapping to the theory- have reached the conclusion that education expenditures affect economical growth positively. On the other hand some of the studies have proved results which is similar to this study. (Devarajan et al. (1996), Patrinos and Psacharopoulos (2002), Eriçok and Yılancı (2013)). This result difference has been basically caused by the development differences of countries which are based on analysis. Especially examined in terms of OECD countries, it has observed that income of investments is low.

REFERENCES


THE MIDDLE INCOME TRAP: AN ASSESSMENT IN TERMS OF TURKISH ECONOMY

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UDK: 338(560)
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Abstract

Middle income trap is the condition of having the per capita income in a specific level and not having any increase in this income level for many years. The concept of middle income trap is a subject that is frequently discussed in the economic literature in recent years. In this study, it is aimed to evaluate whether Turkey is in middle income trap or not. In addition, the effect of manufacturing industry’s share in GDP, schooling rate in higher education and the share of domestic savings in GDP on per capita income level was examined by time series analysis in this context and arguments related with the middle income trap was made. The relationship between the variables in the study was analyzed by Engle Granger cointegration and Engle Granger causality analysis methods. According to the obtained results, a long term relationship was found between the variables which we use. The share of the manufacturing industry within GDP occurred as the cause of the per capita income level. No causality relationship was found between the other variables. According to the evaluations, it is determined that Turkey is not in the middle income trap however it has the risk of having middle income trap.

Keywords: Middle Income Trap, Turkish Economy, Per Capita Income
1. INTRODUCTION

Middle income is an old concept in the literature of economics. Alarming economies are faced with the risk of not being able to reach their income level. These countries have had a growth adventure but these countries have not survived the growth adventure. Countries with a middle income level have emerged from a low income level with rapid growth, but have started to slow down when they reach the middle income level. The main reason for the fact that these countries have entered the middle income level has been the wages. Economies with low incomes will initially be cheap and able to work at high levels with fast steps. While this may seem advantageous, the situation at the middle income level, which means higher wages, is coming to an end and thus losing its competitive power is losing momentum. This is why it is not possible to increase productivity and raise the level of income if technology can not be developed. Countries can not escape from the middle income trap (Karahan, 2012: 96-97).

Every four years the World Bank publishes economic development studies on the economic development of East Asian countries. For the first time in the report published in 2007, “Middle Income Trap” was mentioned. The countries included in the middle income group have grown at a lower rate than the countries included in the low and high income groups. The World Bank’s so-called report and the concept of the Middle Income Trap have become debatable among economists. Due to the fact that Turkey also has middle-income, the middle income trap has become one of the most controversial topics in the Turkish economy in the recent years (Alçın and Güner, 2015: 28).

This study analyzes the middle income in Turkey. In the study, firstly the conceptual framework of the middle income trap was referred and its place in the literature was expressed by national and international studies. A general assessment has been made as to understand whether the Turkish economy is in the middle income trap. A time series analysis was conducted with annual data covering the period 1971-2015 in Turkish economy. This study has been completed with policy recommendation under the light of assessment of the results and the results obtained from the analysis.

2. THE CONCEPTUAL FRAMEWORK OF THE MIDDLE INCOME TRAP

The middle income trap is called a state in which an economy can not rise to a higher income level for a certain period of time after reaching the middle income level (Karanfil, 2016: 220).

The concept of the Middle Income Trap was taken by Barry Eichengreen in his study of economics. According to Eichengreen and his friends, the middle income trap is evaluated according to the following criteria (Eichgreen, Park and Shin, 2011: 14):
The level of per capita income reached $16,740,
The reason of USA having reached to 58% of per capita income level,
And share of the employment rate within manufacturing industry has 23%.

When the middle income trap approach was first expressed, 20% of the per capita income in the USA was referred to the middle income trap in terms of the economies. According to today’s approach, the per capita income in the USA is about $50,000, and the 20% of it is earned at $10,000, the middle income level is calculated as $10,000/year (Dündar, 2013: 6).

While the idea expressed in the background of the concept of middle income trap is technology data; to increase investment and production capacity, to transfer to the modern segments where productivity is higher than traditional sectors such as low income agriculture and crafts. In this period, high growth rates are realized during the periods of transition to economic development (Gürel and Soybilgen, 2013: 2).

It is said that the middle income trap emerged at the middle income level when it comes to some factors that prevent it from developing. These factors include: the fact that the factors of social inequality occur at very high levels, the low share of value added goods in the international division of labor, the inability to complete some strategic transition processes and prevent progress at other stages, the emergence of a non-productive class due to the need and assistance of the poor, increasing polarization in the segments of society, conflicts arising from the change of the safety freedom balance against freedom, the increase of regulations and the difficulties of controls, deepening of the unfair competition environment, the gains of the rents obtained due to the acceleration of urbanization are realized on the gains from the productive activities, the loss of development of some regions due to regional polarization (Türkkan, 2016: 796).

The initial processes of economic growth are fast and easy. Rapid growth is achieved by passing from traditional agricultural understanding to light industrial goods. In this case it means more workforce in rural economy and unlimited resource transfer in urban economy. The high profits in the urban economy encourage capital accumulation and the growth rate for capital concentration is increasing. However, as economies approach the middle income trap, the sources of easy growth based on the high profits of capital to urban labor transfer and urbanization are losing stimulus power. The profitability of the capital is depreciating. After this process the resources of growing up have to be obtained from productivity. The process of increasing productivity should be carried out through investments in human capital education and research and institutional reforms. This process is described as a middle income trap by the economists (Yeldan, 2012: 26).

The most basic feature of low income countries is that they are made up of cheap labor. Countries in this income group have cheap technology with simple technology from abroad. These countries have a competitive edge over labor intensive industries on international markets. In countries with low income,
transition from agriculture to simple technology is very fast. Low income countries can reach middle income level. The realization of the labor force’s high industrialization and the increase in the level of unemployment cause wages to increase and the competitive advantage to decrease. Countries can not reach the upper income level, even if they are at middle income, because productivity is not achieved in the capital with the current technology conditions. Countries that can not reconcile with the countries of human capital and technology are those that fall into the middle income trap (Korkmaz, 2016: 22-23).

Countries that can not raise r&d spending to a sufficient level based on technological infrastructure and can not increase production with innovative approaches are caught in the middle income trap. The concept of middle income trap is expressed by two different approaches. The first approach is the capture index. The catch up index has been raised by Woo, and it has created an index comparing the US economy with other countries. Countries with a capture index greater than 55% are high income countries, countries with a catch index between 55% and 20% are middle income countries, countries with a catch index lower than 20% are considered low income countries (Karanfil, 2016: 220-221). The second approach is categorized by the World Bank:

Table 1

<table>
<thead>
<tr>
<th>Economy Groups</th>
<th>Average Annual Per Capita Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Income Economies</td>
<td>Under $1035</td>
</tr>
<tr>
<td>Lower Income Economies</td>
<td>Between $1036-4085</td>
</tr>
<tr>
<td>Middle income Economies</td>
<td>Between $1036-12615</td>
</tr>
<tr>
<td>Top middle income Economies</td>
<td>Between $4086-12615</td>
</tr>
<tr>
<td>High income Economies</td>
<td>$12616 and over</td>
</tr>
</tbody>
</table>


There are a number of cycles that generate and nurture the concept of middle income. The cycles are as follows (Türkkan, 2016: 796-798):

Cycle 1: When the middle income level is reached in developing countries, the capacity to produce valuable goods with low added value arises. But those countries with high value added will come from developed countries. This situation will cause developed countries to abandon activities with low added value and unfair competition. As a result, they will ask for developing countries with low added value. For this reason, the developing countries will continue to produce goods with low added value, and the result will be the result of repetition.

Cycle 2: When the middle income level is reached, social inequality and polarization in the developing countries will occur at the maximum level. This will result in the emergence of a conflict environment and limited freedom. This phenomenon will lead to the emergence of unfair competition both in politics and in the economy. Ultimately, high creativity will limit the motivation of work and entrepreneurship, so that it will not be possible to complete some of the strategic transition processes, and society will face a middle income trap.
Cycle 3: Another cycle involves talking about the tendency to help and cultivate. In countries that are exposed to such a situation, the income inequalities in the middle income society are at a very high rate, and in those who are in a difficult situation, the tendency of help will be large. In such an environment, both the high income and low income segments will rise to a level of satisfaction, and consequently a solid balance of middle income levels will be the subject.

Cycle 4: There may be a loop that performs some of the other transition times that are delayed completion in the negative direction. This hypothesis is mainly due to the high political cost in some transitional periods. All these factors will support each other and cause a vicious circle.

Cycle 5: The rents obtained as a result of rapid urbanization, industrialization and outward opening cause a middle income vicious cycle to rise above potential gains. Here, it is mentioned that the rational entrepreneur obtains rent creation activities which are realized in a wide range of possibilities of differentiation of goods and services that are open to the outside, not open to external competition, and as a result the profit rates are also very high. This means that competition processes are damaged.

Cycle 6: Historical, geographical, and cultural factors underlying the process of economic development are becoming a center of life for those who live in other regions, as some regions become part of a rapid development process. For this reason, a structure is emerging in the country where underdeveloped countries have lost their dynamism and contributed to the developed regions. When the middle income level of the country is reached, the developed regions have the structural characteristics and performance of the developed countries, while the undeveloped regions maintain the basic characteristics of the underdeveloped countries. For this reason, the concept of a middle income trap based on the geographical structure emerges.

The concept of middle income trap was used historically for the first time in the report of the World Bank named East Asian Renaissance in 1960. In the report is mentioned, that in the 20th century, middle and low income countries, where middle and low income countries, which were able to innovate quickly and economically with each other, were influencing each other but were not able to follow these developments, remained at the income level and the convergence hypothesis was not valid. In other words, it is expressed that the middle income is the convergence of the countries. The middle income trap is, in its simplest terms, defined as the income level of the countries in which economic growth is financed by the accumulation of physical factors and which has not shown a structural change towards labor and capital markets, which increases productivity (Dündar, 2013: 18). After reaching the middle income level, a number of factors are emerging that explain the slowing down of the growth rate (Türkkan, 2016: 798-799):

- The fact that there is a limit to the appreciation of indigenous money, and therefore there is no income increase due to the appreciation of domestic money,
– Closer to rapid and easy productivity growth,
– Outsourcing from the market and approaching the border in foreign capital,
– Approaching the border under institutions that can be easily installed,
– Approach of the technology that is easy to transfer and obtained and
– Factors such as approaching the mentality of easily changed structures are revealed.

3. MIDDLE INCOME TRAP IN TURKEY

The Turkish economy remained at the lower middle income level during the period from 1950 to 2005. After 2005, Turkey has taken place in the upper middle income group.

Table 2

Selected Economies That Became Lower Middle Income After 1950 and Graduated to Upper Middle Income

<table>
<thead>
<tr>
<th>Country</th>
<th>Area</th>
<th>Year country turned lower middle income</th>
<th>Year country turned upper middle income</th>
<th>No of years as lower middle income (year)</th>
<th>Average per capita GDP growth rate in transition period (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>Asia</td>
<td>1992</td>
<td>2009</td>
<td>17</td>
<td>7.5</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Asia</td>
<td>1969</td>
<td>1996</td>
<td>27</td>
<td>5.1</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>Asia</td>
<td>1969</td>
<td>1988</td>
<td>19</td>
<td>7.2</td>
</tr>
<tr>
<td>Thailand</td>
<td>Asia</td>
<td>1976</td>
<td>2004</td>
<td>28</td>
<td>4.7</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Europe</td>
<td>1953</td>
<td>2006</td>
<td>53</td>
<td>2.5</td>
</tr>
<tr>
<td>Turkey</td>
<td>Europe</td>
<td>1955</td>
<td>2005</td>
<td>50</td>
<td>2.6</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>Latin America</td>
<td>1962</td>
<td>2006</td>
<td>54</td>
<td>2.4</td>
</tr>
<tr>
<td>Oman</td>
<td>Middle East</td>
<td>1968</td>
<td>2001</td>
<td>33</td>
<td>2.7</td>
</tr>
</tbody>
</table>


As seen in Table 1, Bulgaria, Costa Rica and Turkey have remained fifty years in the middle income group. China has reached the upper middle income level in 2009 and has reached the highest growth rate among 10 countries. On the other hand, the Republic of Korea remained 19 years in the upper middle income group in 1998, and the growth rate realized as 7.2% in this process.

Eichengreen, Park and Shin (2011) base their middle income trap on certain criteria. According to these criteria, it is required to have per capita income level in the amount of 16,740 dollars in order to be able to speak about middle income trap in a country. Table 3 shows that the per capita income level in Turkey did not reach this level in the 1990-2016 period.
Table 3
Comparison of Turkey and USA Number of Per Capita GDP in terms of Middle Income

<table>
<thead>
<tr>
<th>Years</th>
<th>Per Capita GDP in Turkey ($)</th>
<th>Per Capita GDP in USA ($)</th>
<th>TURKEY/USA* %100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>2794,4</td>
<td>23954,5</td>
<td>% 11,66544908</td>
</tr>
<tr>
<td>1991</td>
<td>2735,7</td>
<td>24405,2</td>
<td>% 11,20949634</td>
</tr>
<tr>
<td>1992</td>
<td>2842,4</td>
<td>25493</td>
<td>% 11,14972738</td>
</tr>
<tr>
<td>1993</td>
<td>3180,2</td>
<td>26464,9</td>
<td>% 12,01667114</td>
</tr>
<tr>
<td>1994</td>
<td>2270,3</td>
<td>27776,6</td>
<td>% 8,173426553</td>
</tr>
<tr>
<td>1995</td>
<td>2897,9</td>
<td>28782,2</td>
<td>% 10,06837559</td>
</tr>
<tr>
<td>1996</td>
<td>3054</td>
<td>30068,2</td>
<td>% 10,15690996</td>
</tr>
<tr>
<td>1997</td>
<td>3144,4</td>
<td>31572,7</td>
<td>% 9,959236936</td>
</tr>
<tr>
<td>1998</td>
<td>4496,5</td>
<td>32949,2</td>
<td>% 13,64676532</td>
</tr>
<tr>
<td>1999</td>
<td>4108,1</td>
<td>34620,9</td>
<td>% 11,8659538</td>
</tr>
<tr>
<td>2000</td>
<td>4316,6</td>
<td>36449,9</td>
<td>% 11,8425565</td>
</tr>
<tr>
<td>2001</td>
<td>3119,6</td>
<td>37273,6</td>
<td>% 8,369462569</td>
</tr>
<tr>
<td>2002</td>
<td>3660</td>
<td>38166</td>
<td>% 9,589687156</td>
</tr>
<tr>
<td>2003</td>
<td>4718,5</td>
<td>39677,2</td>
<td>% 11,89222022</td>
</tr>
<tr>
<td>2004</td>
<td>6040,7</td>
<td>41921,8</td>
<td>% 14,40944807</td>
</tr>
<tr>
<td>2005</td>
<td>7384,4</td>
<td>44307,9</td>
<td>% 16,66610243</td>
</tr>
<tr>
<td>2006</td>
<td>8034,9</td>
<td>46437,1</td>
<td>% 17,30276008</td>
</tr>
<tr>
<td>2007</td>
<td>9709,5</td>
<td>48061,5</td>
<td>% 20,20224088</td>
</tr>
<tr>
<td>2008</td>
<td>10850,7</td>
<td>48401,4</td>
<td>% 22,41815319</td>
</tr>
<tr>
<td>2009</td>
<td>9036,5</td>
<td>47001,6</td>
<td>% 19,22594124</td>
</tr>
<tr>
<td>2010</td>
<td>10672,1</td>
<td>48373,9</td>
<td>% 22,06169029</td>
</tr>
<tr>
<td>2011</td>
<td>11341,1</td>
<td>49790,7</td>
<td>% 22,77754681</td>
</tr>
<tr>
<td>2012</td>
<td>11720,3</td>
<td>51450,1</td>
<td>% 22,77993629</td>
</tr>
<tr>
<td>2013</td>
<td>12542,9</td>
<td>52787</td>
<td>% 23,76134275</td>
</tr>
<tr>
<td>2014</td>
<td>12127,2</td>
<td>54598,6</td>
<td>% 22,21155854</td>
</tr>
<tr>
<td>2015</td>
<td>10979,5</td>
<td>56207</td>
<td>% 19,5304038</td>
</tr>
<tr>
<td>2016</td>
<td>10787,6</td>
<td>57466,8</td>
<td>% 18,7718822</td>
</tr>
</tbody>
</table>

Source: World Bank, World Development Indicators and Authors’s Calculations

The second criterion is that the per capita income level of the USA has reached 58%. When Table 3 is analyzed, it is seen that this ratio (TURKEY / USA * 100%) realized between 8.17% and 23.76% between 1990-2016. Accordingly, Turkey is not in middle income trap.

In another definition, the per capita income level of a country in the ratio of % 20 of the per capita income in the USA shows that this country is in the middle income trap. According to Table 3, it can be said that Turkey is a country which has the risk of having middle income trap.
The third criterion is that the share of the employment rate within manufacturing industry is 23%. When Table 4 is considered, share of the employment rate within manufacturing industry realized between 16.86% and 19.88% between 2000 and 2016. This ratio is on average 18.42% period of 1990-2016. According third criterion, Turkey is not in middle income trap.

According to the criteria expressed by Eichengreen, Park and Shin (2011), it can be stated that Turkey is not in the middle income trap.

### 4. LITERATURE

Studies related with the middle income trap have occurred recently. Two descriptive questions occur in the literature which occurred recently. First of them is: “How is the threshold for the middle income status defined?” and the second one is “How is the trap determined?” (Im and Rosenblatt, 2013: 4). This section includes studies which are concluded for both Turkey and world countries.

Ohno (2009) based his studies on descriptive statistics. In general, he studied the East Asian and East African countries, especially the Vietnam economy. He mentioned that Vietnam is under the risk of middle income trap. As a result of the study, he suggested that dynamism must be provided to the private sector with government policies rather than the opinion of “laissez faire” in order to get rid of the middle income trap risk.
In their study, Yusuf and Nabeshima (2009) investigated whether Malaysia could escape from the middle income trap. They stated that annual growth rates in Malaysia are around 7-8% for 5-8 years.

Woo (2009) examined the escape of Malaysia from middle income trap. He mentioned that Malaysia’s annual growth rate in the period of 2001-2010 was around 7.5%. Woo has expressed that the government must make many radical regulations in many fields and to apply the culture of excellence in the center of the administration in order to escape from the middle income trap. He mentioned that in this way, macroeconomic balances can be achieved and a knowledge-based economy can be used.

Kharas and Kohli (2011) analyzed the reasons of countries in having the risk of middle income trap and the politics necessary for their getting rid of the trap. They made the suggestion that specialization, total factor productivity-based growth and in-situ management in economy for Latin American and East Asian countries in order to get rid of middle income trap.

Lin and Treichel (2012) investigated the causes of middle income trap in Latin America, Caribbean and China. They expressed that it is required to provide public and private sector cooperation and the education and research and development activities must be developed in order to get rid of the middle income trap.

Jankowska, Nagengast and Perea (2012) investigated the middle income trap in Asian and Latin American countries. They used product field methodology to compare the structural transformation in Asian and Latin American countries. In the conclusion part of the study, they stated that there is a need for temporary incentive policies which are consistent with the factor commodities and the policies consistent with these policies for providing the development of the countries which are dependent to the external markets.

Aiyar et al. (2013) have examined Asian and Latin American countries which are for the period 1955-2009. They used Probit Regression, Bayesian and Weighted smallest squares model in their studies. They analyzed the relationship between income per capita and population, infrastructure, macroeconomic environment, production structure and trade structure. They expressed that gross capital flows expressed within the macroeconomical environment are significant.

Robertson and Ye (2013) analyzed the existence of a middle income trap. They performed simple time series analysis in their studies. They found that 19 countries (Bolivia, Botswana, Bulgaria, Costa Rica, El Salvador, Guatemala, Honduras, Indonesia, Iraq, Jordan, Lebanon, Mexico, Mongolia, Morocco, Peru, Panama, Turkey) are in middle income trap.

Tho (2013) examined the middle income trap in Southeast Asian countries (Indonesia, Malaysia, Philippines and Thailand). He made comparisons with Korea, which overcame the middle income trap and has reached a high level of income in the late 1990s. Tho has suggested the strengthening of research and development capacity, the emphasis on the quality and appropriateness of human resources, and the development of a dynamic private sector institutional system for sustentation in order to escape the middle income traps of Southeast Asian countries.
Zhang et al. (2013) conducted a survey on China. As a result of their study, they emphasized the importance of qualified human capital in the middle income trap.

In their studies, Bozkurt et al. (2014) conducted convergence and ARDL analysis using the data of Turkey related with 1971-2012 period. They analyzed the relation between the per capita income and the schooling rate in higher education, the domestic savings rate and the manufacturing industry. According to the results of the analysis, they found that the schooling rate in higher education and the domestic saving increased per capita income. They can not determine the income increasing effect of the manufacturing industry. They expressed that Turkey converges to countries with high income. They expressed that it is required to remove the risk of industrialization and the education system should be focused on innovation and technology in order to get rid of the middle income trap in Turkey.

Dalgıç, İyidoğan and Balkıçoğlu (2014) conducted analyzes covering the period 1990-2013 for the 56 middle income countries, including Turkey. In the study, they examined the factors that affect the possibility of a country in middle income group to transfer to an upper income group. They dealt with the factors that reflect countries’ economic development levels with macroeconomic and institutional factors of the countries. As a result of the analysis, they stated that the improvement in human capital and technology for getting rid of the middle income trap, the increase in institutional capital and healthy macroeconomic indicators are significant.

Koçak and Bulut (2014) analyzed whether Turkey is in the middle income trap by using two structural refractors developed by Lee and Strazicich (2003) and five structural refractors unit root tests developed by Carrion-i Silvestre et al. (2009). According to the results of the unit root test, they reached the conclusion that Turkey is not in middle income trap. They made three different suggestions for the rapid growth of Turkish economy: First, policies should be established to strengthen the qualities of human resources in Turkey. Second, dynamic policies should be implemented to strengthen institutionalization in Turkey. Third and finally, macroeconomic stability must be ensured, moderate inflation, policies to increase fiscal sustainability should be developed.

In his study, Tuncel (2014) presented suggestions to Turkey under the light of the experiences of the countries that exceeded the middle income trap. As a result of his study, he mentioned that the most important conclusion in the experience of South Korea and Taiwan is that the state governs economic development with active innovation policies. In this respect, he expressed the necessity of establishing an industrial and innovation policy for Turkey in coordination of all factors. In addition to, he also stated that university industry cooperation should be developed in the preparation of university education programs.

In their study, Yaşar and Gezer (2014) investigated the risk of Turkey’s middle income trap and the proposals to get rid of this risk. They mentioned that Turkish economy has remained in the low income and low middle income country group since 1960 and has been in the high middle income country group since 2004. They suggested that the deficiencies of infrastructure must be compensated,
educational structure, human capital, technological breakthroughs and institutional infrastructure should be changed rapidly in order to include Turkey to the country group with high income.

Yılmaz (2014) investigated the middle income trap in Turkey. As a result of his study, he has drawn attention to human capital and the ability to produce goods from a technological point of view in order not to get caught up in the middle income trap.

Alçın and Güner (2015) made assessments and predictions by analyzing the main reasons for the possibility of Turkey falling into the middle income trap and the policies required for getting rid of the trap. As a result of the study, they stated that the localization of the capital and the sectoral development should be provided qualitatively in order for the stable and rapid growth in the Turkish economy.

In his study, Atik (2015) stated that Turkey confronts a middle income trap. He suggested that innovative industrialization policies are needed for Turkey to be able to get rid of the middle income trap.

Ener and Karanfil (2015) investigated the effect of savings deficit in the Turkish economy on the middle income trap. They applied a time series analysis on their studies covering the years 1980-2013. While there is an unilateral causality relationship in the per capita income from domestic savings, they did not find a causal relationship to the savings from per capita income.

Kaya et al. (2015) have examined the middle income trap in Turkey. They mentioned that the factors that cause middle income trap in Turkey are generally structural. In the conclusion part of the study, they stated that Turkey should enter a path of sustainable growth in order to be able to get rid of the middle income trap.

Ay, Akar and Akar (2016) compared Turkey and BRICS (Brazil, Russia, India, China and South Africa) in terms of the concept of middle income trap. They have chosen the human capital, concepts of education and innovation as benchmarking criterion. In the conclusion part of their study, they concluded that Turkey had a low income group after 1950. According to the classification of World Bank, they stated that Turkey was in middle income group in 2004. When they examined the BRICS countries, they stated that China would have a middle income trap. They stated that Russia and Turkey are at high levels of income by 2012. As a result of the study, they stated that it is required to increase the investments of education, to organize the education system, to appoint individuals with high knowledge and skills to appropriate jobs and thus the middle income trap shall be avoided in Turkey.

Bal et al. (2016) have examined whether Turkey is in the middle income trap. By using the variables of GDP, inflation, share of agriculture and exports in GDP, Gini coefficient and age dependency ratio, they determined the main reasons for the middle income trap with Vector Error Correction model. In their studies covering the years 1980-2014, they stated that the variable which mostly affects the ratio of GDP in Turkey is Gini coefficient. They mentioned that Turkey is not in the middle income trap.
In his study Bayar (2016) has dealt with the education of Turkey’s human resources from the perspective of a middle income trap. He compared the status of Turkey and the countries which have fallen into a trap and the countries that have survived. As a result of his work, he stated that Turkey is in the upper middle income group and is a country which is not in middle income trap yet but has a risk of falling recently.

Glawe and Wagner (2016) investigated whether China is in the middle income track. In their analysis, firstly, they examined the the approaches that determine the middle income trap and secondly the factors that trigger the middle income trap. As a result of the study, they stated that the Chinese economy confronted a middle income trap risk in 2011. They added that China’s economic performance depends on policy makers.

In his study covering 2000-2014, Karanfil (2016) dealt with Turkey and EU-28 (Luxembourg, Denmark, Sweden, Netherlands, Austria, Finland, Germany, Belgium, Ireland, France, England, Italy, Spain, Cyprus, Slovenia, Greece, Portugal, Malta, Czech Republic, Estonia, Slovak Republic, Lithuania, Latvia, Poland, Croatia, Hungary, Romania, Bulgaria). Using panel data analysis, he analyzed the relationship between the per capita income, R&D expenses and savings with Westernlund Bootstrap, Westerlund Dublin-Hausma cointegration and Hacker-Hatemi-J Bootstrap causality test methods. As a result of the study, he found a long-lasting relationship between the variables. He determined that per capita income was the reason for R&D expenses but R&D expenses are not the reason of per capita income.

Akbulut and Yildiz (2017) investigated the concept of middle income trap in Turkey. In their study, they expressed that Turkey is in middle income trap and regional inequalities are intense. As a result of the study, they stated that different regional development policies should be applied for the development of the regions in Turkey, and Turkey will get rid of the middle income trap accordingly and shall have a higher per capita income level.

When the literature is examined in general, the reasons for middle income trap can be shown as that middle income countries cannot conform to structural reforms such as from human capital to R&D, from income distribution to sectoral and regional politics, to political regimes (Bozkurt et al., 2014: 30).

5. DATA SET AND ECONOMETRIC METHOD

As different from many studies in the literature, this study includes some assessment related with the variables that may affect the income level of Turkey which confronts the risk of falling into the middle income trap by using some economical variables with a high frequency of utilization in the literature. For this reason, the share of manufacturing industry in GDP in Turkey, the schooling rate in higher education and the effect of the share of domestic savings ratio in GDP on per capita income has been investigated. The data used in the study were obtained from the data base of the World Bank and the Turkish
Diem. While our study period was being established the annual data covering the period 1971-2015 was utilized.

Our model shall be established in the form of,

\[ PCI = a_0 + a_1M + a_2H + a_3S + u_t \]  

(1)

PCI expresses the per capita income level, M expresses the share of manufacturing industry in GDP, H expresses the schooling rate in higher education, S expresses the share of domestic savings rates within GDP.

5.1. Empirical Results

In order to investigate the long term relationship between the per capita income in Turkey and the share of the manufacturing industry within GDP, the schooling rate in higher education, and the share of domestic savings rates in GDP, it is analyzed whether the series of the variables were stable. The results which are obtained from the ADF and Phillips Perron stability tests are shown in Table 5 and Table 6.

### Table 5

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF (Level)</th>
<th>p</th>
<th>ADF (First Difference)</th>
<th>p</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log(PCI)</td>
<td>-1.065688</td>
<td>0.7199</td>
<td>-6.065055</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>Log(M)</td>
<td>-2.122284</td>
<td>0.2372</td>
<td>-7.886079</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>Log(H)</td>
<td>1.062724</td>
<td>0.9966</td>
<td>-4.298030</td>
<td>0.0014</td>
<td>I(1)</td>
</tr>
<tr>
<td>Log(S)</td>
<td>-1.787042</td>
<td>0.3819</td>
<td>-6.178676</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Source: authors' calculations

### Table 6

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF (Level)</th>
<th>p</th>
<th>ADF (First Difference)</th>
<th>p</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log(PCI)</td>
<td>-0.977028</td>
<td>0.7523</td>
<td>-6.155840</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>Log(M)</td>
<td>-1.988199</td>
<td>0.2908</td>
<td>-7.922304</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>Log(H)</td>
<td>0.693561</td>
<td>0.9907</td>
<td>-4.332428</td>
<td>0.0013</td>
<td>I(1)</td>
</tr>
<tr>
<td>Log(S)</td>
<td>-1.642945</td>
<td>0.4526</td>
<td>-8.056442</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Source: authors’ calculations

According to the result of ADF and PP unit root test, the series are stable in the first difference (p <0.05). In other words, it is observed that unit root results made for all the series are stable at level I (1).

The Engle-Granger Cointegration test was applied to the series, which were found to be stable at the same degree. In the Engle-Granger cointegration test, it has been examined whether there is a long term relationship between the same stable variables in the same degree.
Table 7

Engle Granger Cointegration Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>T statistic</th>
<th>p</th>
<th>MacKinnon Critical Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error Term</td>
<td>-6.020529</td>
<td>0.000</td>
<td>-3.615588*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-2.941145**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-2.609066***</td>
</tr>
</tbody>
</table>

Notes: *, **, and *** indicate levels of significance of 1%, 5% and 10%, respectively.

Source: authors’ calculations

The series is stable because the error term is p = 0.000 < 0.05 and the test statistic is smaller than the critical value. Our variables and our model are significant. As the result, there is a long term relationship between the variables.

Table 8

Lag Length Test Results

<table>
<thead>
<tr>
<th>Lag</th>
<th>LogL</th>
<th>LR</th>
<th>FPE</th>
<th>AIC</th>
<th>SC</th>
<th>HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9.497280</td>
<td>NA</td>
<td>8.51e-06</td>
<td>-0.323369</td>
<td>-0.143798</td>
<td>-0.262130</td>
</tr>
<tr>
<td>1</td>
<td>109.6314</td>
<td>170.8170*</td>
<td>6.08e-08</td>
<td>-5.272434</td>
<td>-4.374575*</td>
<td>-4.966239*</td>
</tr>
<tr>
<td>2</td>
<td>126.8290</td>
<td>25.29058</td>
<td>5.92e-08*</td>
<td>-5.342881*</td>
<td>-3.726735</td>
<td>-4.791729</td>
</tr>
<tr>
<td>3</td>
<td>136.5451</td>
<td>12.00225</td>
<td>9.58e-08</td>
<td>-4.973240</td>
<td>-2.638806</td>
<td>-4.177131</td>
</tr>
<tr>
<td>4</td>
<td>155.4454</td>
<td>18.90027</td>
<td>1.02e-07</td>
<td>-5.143844</td>
<td>-2.091123</td>
<td>-4.102779</td>
</tr>
</tbody>
</table>

Source: authors’ calculations

In Table 8, the LR, SC and HQ criteria for the VAR model give 1 delay length. It is decided to have the delay level as 1 in the analyzes because LR, SC and HQ criteria for the optimal delay level indicate 1 delay.

Table 9

Granger Causality Analysis Results

<table>
<thead>
<tr>
<th>Ki-kare</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>The share of manufacturing industry in GDP is the cause of per capita income.</td>
<td>12.05921</td>
</tr>
<tr>
<td>Per capita income is the cause of the share of manufacturing industry in GDP.</td>
<td>4.169362</td>
</tr>
<tr>
<td>The schooling rate in higher education is the cause of per capita income.</td>
<td>0.982568</td>
</tr>
<tr>
<td>Per capita income is the reason for the schooling rate in higher education.</td>
<td>1.234377</td>
</tr>
<tr>
<td>The share of domestic savings in GDP are the cause of per capita income.</td>
<td>3.965913</td>
</tr>
<tr>
<td>Per capita income is the cause of the share of domestic savings in GDP.</td>
<td>0.185580</td>
</tr>
</tbody>
</table>

Source: authors’ calculations
According to the results of Granger causality analysis, \( p=0.0024<0.05 \), therefore it is determined that the share of manufacturing industry within GDP is the reason of the per capita income. As seen in Table 9, there is no causality relationship between the other variables. As a result, there is an unilateral causality relationship between manufacturing industry and per capita income.

The concept of middle income trap has become a discussion in the literature of economics since 2000’s. There is no consensus on whether Turkey is in middle income trap. While Robertson and Ye (2013) and Akbulut and Yildiz (2017) states that Turkey is in middle income trap, Bozkurt et al. (2014), Koçak and Bulut (2014), Yilmaz (2014), Ay, Akar and Akar (2016), Bal et al. (2016) and Bayar (2016) support that Turkey is not in the middle income trap.

6. CONCLUSIONS

It has been examined whether Turkey is in the middle income trap according to the approach that income level per capita can reach 16,740 dolars, 58% of USA per capita income level and share of the employment rate within manufacturing industry has 23% in order to mention about a middle income trap in a country. According to this approach expressed by Eichengreen, Park and Shin (2011), Turkey is not in middle income trap. According to another definition stating that a country having per capita income level in the amount of 20% per capita income in the United States, is a country in middle income trap, Turkey is in the position of a country having the risk of confronting middle income trap.

In the study, the middle income trap was examined by time series analysis for Turkey using annual data covering the period 1971-2015. From the middle income trap literature, the relationship between per capita income and the share of manufacturing industry in GDP, the share of schooling rate in high school and the share of domestic savings in GDP has been analyzed. As a result of the analysis, it is determined that variables affect each other in the long term. In other words, variables in long term have a significant effect on per capita income level. In the next stage, Granger causality analysis was applied. It is determined that the share of manufacturing industry within GDP is the reason for per capita income level. This result shows which variables should be given importance for a country which has a risk of falling into a middle income trap.

In the study, the variables affecting the level of income per capita are limited only with the share of the manufacturing industry within GDP, the schooling rate in higher education and the the share of domestic savings in GDP and the variables such as R&D expenditures, primary schooling rate, secondary schooling rate are not included to the scope. Time series analysis has been chosen as a method in the study and relations among variables can be tested by other analysis methods such as VAR analysis, ARDL analysis, convergence analysis, impact response analysis. A study exploring the effect of human capital, in other words primary schooling rate, secondary schooling rate and higher education...
schooling rate on per capita income in terms of middle income trap or a study that demonstrates the effect of R&D expenditure on per capita income shall be beneficial. Accordingly, as the result of our study it can be suggested that policymakers should take decisions and implement them in order to improve their manufacturing industries.

As a result, Turkey’s savings rates should be increased. Technological infrastructure should be developed. Policies should be established to provide cooperation between universities, public institutions and businesses. Education rates and investments should be increased and the education system should be organized. In addition, growth should be stable and rapid, policies should be pursued for the development of human capital. Industry and innovation policies should be developed.

REFERENCES


OWNERSHIP VERSUS EFFICIENCY: A CROSS-COUNTRY COMPARATION OF HEALTH SYSTEMS

Original scientific paper
UDK: 614.2:005.336.1(4-69)
JEL classification: C14, H44, I11, I18

Abstract

Introducing market mechanisms to the health systems of transition countries in Central, Eastern and South-Eastern Europe (CESEE) after 1990, has not met expectations and the biggest changes are yet to come. The main objectives of this paper are to compare health systems’ efficiency of CESEE countries and in the second stage to analyze whether the different ownership of health care providers is associated with the health system efficiency. Therefore, the relative technical efficiency of decision making units (DMUs), i.e. health system in CESEE countries, is obtained from the BCC model using data envelopment analysis (DEA) technique. The analysis of efficiency level of health systems in CESEE countries offers valuable information on possibilities for improving the efficiency. Furthermore, analyzing the impact of different ownership of health care providers on the efficiency is an important step towards improvement of the health system, on the basis of which it is possible to define the desired state as well as the way to achieve it.

Keywords: health system efficiency, ownership, transition economies

1. INTRODUCTION

Health care expenditure plays a significant role in the transition economies of Central, Eastern and South-Eastern Europe (CESEE). Countries face resource constraints for providing health services and that constraints are more prominent in low- and mid-income countries (Sun et al., 2017). Because of the financial pressure and concerns over long-term financial sustainability, improving the efficiency of health system is one of the most important management challenges. According to Mirmirani et al. (2008), transition economies embrace
myriad economic and social changes and transition has turned out to be vastly more complicated and extraordinary than first thought. As countries endeavor to move toward “marketization” many transitional countries have implemented and are still undertaking health care reforms aimed at introducing market mechanism in traditionally public health systems. (Nemec and Kolisinchenko, 2006).

Involving the private sector in infrastructure development is one of possible solutions for overcoming the gap between needs and possibilities that contemporary health systems have to face. The issue of balance between the public and private is a complex one. Despite the strengths on the paper, examinations of international experiences are necessary to point out the various issues of health care reforms. However, the problem of measuring performance of different providers of health services is especially complex in a cross-country analysis, i.e. in evaluating the overall health system’s performance. (Cylus and Pearson, 2016) Furthermore, prior studies have rarely investigated the impact of private sector providers of inpatient health services on health system’s performance. In order to understand the relationship between government spending and efficiency, Sun et al. (2017) emphasize the importance of further investigation into how service delivery systems are organized and financed.

Due to lack of knowledge about the impact of different agreements between the public and private sector aimed at providing health care services, further evaluations of their performance are required. A lot of research on differences between public and private health care providers, especially on the extent to which they benefit their society, remain inconclusive. This issue is especially important in transition economy, where the private sector was introduced in health system in the transition period, when the market was not completely development.

Hence, this study includes private sector participation in providing health care services in the analysis of health system in order to investigate their impact on health system’s efficiency. Namely, the purpose of this study was to analyze the technical efficiency of health system in selected CESEE countries, using data envelopment analysis (DEA) technique. Furthermore, in the second stage the aim was to analyze whether different ownership of providers of inpatient health care services is associated with health system’s efficiency.

The organization of the paper is as follows. The next section presents literature review of performance measurement in health systems, while the third section provides a detailed description of data and model specification. Results are presented in the fourth section. Conclusions are given in the last, fifth section.

2. MEASURING OF PERFORMANCE IN HEALTH CARE – LITERATURE REVIEW

In order to measure performance of health care services, different parametric and non-parametric methods have been employed over the last few decades. Performance can be defined as an appropriated combination of efficiency and effectiveness. Taking that into consideration, efficiency refers
to using minimum inputs for a given number of outputs. On the other hand, effectiveness evaluates the outcome which includes the dimension of quality, i.e. it refers to using inputs and outputs and produces the best possible outcome.

According to Ozcan (2016), the origins of efficiency in association with Farrell’s study in 1857 and the theoretical development of the DEA approach begun in 1978 by Charnes et al. DEA is a nonparametric linear programming based technique which develops efficiency frontier by optimizing the weighted output/input ratio of each provider, with condition that this ratio can equal, but never exceed, unity for any other providers of data set. In the health care, DEA was first applied in 1983, when Nunamaker and Lewin measured nursing service efficiency.

Among the various methods of efficiency assessment, DEA has gained the attention of many researchers (see for example: Dash et al., 2010; De Nicola, 2011; Mangnussen, 1996; Mogha et al., 2012, 2015; Rabar, 2010; Slijepčević, 2014; Staat, 2006;). More recent applications of DEA to measure performance in health system are described below.

Measuring of health system’s efficiency is one of the most challenging areas of health system performance. Hollingsworth (2008) established that only 4% of health care efficiency studies were cross-section. According to Mirmirani et al. (2008), as the containment of health care costs becomes more difficult, the focus of attention has been shifted to the efficiency of an entire health care system.

Furthermore, most cross-section studies measure effectiveness of health systems. Evans et al. (2001) investigated relative effectiveness and they concluded that it is positively related to health expenditure per capita. Furthermore, according to them, countries with the best level of health do not always have efficient health system. Haddat et al. (2013) examined health care system’s effectiveness, and in the second step of analysis they concluded that institutional arrangements, population behavior, socioeconomic and environmental determinants are associated with health care system effectiveness. Sunn et al. (2017) examined effectiveness of health system from 173 countries from 2004 through 2011 and they concluded that HIV/AIDS prevalence, health financing mechanisms and governance are statistically associated with the effectiveness of national health systems. The aforementioned authors conducted a two-step analysis, where in the second step the results of the effectiveness analysis were compared to certain variables which were assumed to affect the relative effectiveness results. However, the structure of ownership is not analyzed throughout these studies.

The majority of research in the area of health care efficiency has focused on the organizational level. In a research of that kind, Farsi and Filippini (2006) explored the cost structure of Swiss hospitals, focusing on differences caused by teaching activities and those across different ownership and subsidization types. They didn’t provide any evidence of significant efficiency differences across ownership and subsidization categories.

However, the wide variation in cultural and economic characteristics of the worldwide sample of countries can lead to wrong conclusions, i.e. heterogeneity can be declared as inefficiency (Green, 2004). Furthermore, the
aforementioned research papers did not focus on transition economy. Mirmirani et al. (2008) measured the relative effectiveness of health system in a sample of transition economy nations over the period of 1997-2001. To calculate relative effectiveness of health system with DEA approach, life expectancy and infant mortality are used as outcomes, while hospital beds, physicians, health care expenditure and percentage of children immunized for measles are incorporated as inputs. Limitation of their research is a large number of variables and a small sample of countries, which is not in accordance with the rule of thumb.

Additionally, it is challenging to appropriately attribute particular inputs to health outcomes because health is the result of complex processes which include medical care, wealth, education, occupation, housing, the environment, genetics etc. (Cylus and Pearson, 2016)

According to Linna et al. (2010), due to the difficulties in relation to the measurement of output as a consequence of case-mix, international comparisons of hospital efficiency are relatively scarce in the literature. They compared the performance of hospital care in four Nordic countries: Norway, Finland, Sweden and Denmark. They calculated cost efficiency in the production of somatic hospital care for public hospitals. They calculate cross-section evaluation, but they investigated hospitals as providers, not health systems. Also, they used cost variables, although measuring the technical efficiency leads to better comparability in international studies (for detail explanation see 3rd section).

Although it is difficult to clearly identify the reasons why different providers have different results (in terms of output or outcome) performance needs to be evaluated and compared across health care providers in order to detect changes throughout time, comparing with other providers, adjusting to public policy mandates and responding to reimbursement changes (Ozcan, 2016). Performance evaluation creates benchmarks and provides information to the entities in question on how to improve their performance. Therefore, this is exactly what we need in the health systems today.

3. HEALTH SYSTEM BENCHMARKING USING DEA

3.1. Data description

The original data set comprises sixteen selected CESEE countries. Due to lack of information on inputs and outputs of health system, as well as on private providers of inpatient health care, this paper analyzes nine CESEE countries. According to Green (2004), the wide variation in cultural and economic characteristics of the worldwide sample of countries produces a large amount of unmeasured heterogeneity in the data. For that reason, the inefficiency estimation mistakenly measures that heterogeneity as inefficiency. Because of that, this paper is focused on CESEE countries with similar process of health care reforms, which commenced under similar circumstances after 1990.

1This paper intended to analyze these EU countries: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia, five non-EU countries of former
In the first step of the analysis, the efficiency of national health systems was evaluated, while in the second step the relationship between the level of efficiency and the share of a private entity in inpatient health care was examined. Thus, this study considered two sets of variables for selected countries: variables for DEA (inputs and output) and number of private inpatient hospital beds (as a percentage of all beds).

The aim of this paper is to measure efficiency, i.e. to calculate technical efficiency using DEA technique. Technical efficiency shows the use of input factors for the provision of services, in which inputs and outputs are defined in non-monetary terms. The selection of inputs and outputs was guided by previous empirical studies and depended on the availability of data. According to Worthington (2004), difficulties in defining the cost of inputs in the public sector are the main reason for the domination of the measurement of the technical efficiency within the health system. In addition to the above mentioned, according to Mirmirani et al. (2008), measuring the technical efficiency leads to better comparability with international studies. Furthermore, labor and capital were considered as important inputs in the provision of health care services (Cheng et al. 2016). As this study investigated the efficiency of health systems, it used the number of physicians working in hospitals and number of hospital beds as inputs. The same authors argued that the number of inpatients is better output than the inpatient days. Because of the correlation between number of inpatients and the average length of stay, this study used the number of inpatients as the output. Due to the limitation of evaluating small number of DMUs, which use large number of inputs to provide large number of health services, analyst need to include only those inputs and outputs which provide the essential components of the service production process. Therefore, in order to have adequate numbers of degrees of freedom it is necessary to apply rule of thumb: \( n \geq 3*(m + s) \) where \( n \) is number of DMUs, \( m \) is number of inputs and \( s \) is number of outputs. (Ozcan, 2016)

All data were obtained from the European health for all database.

3.2. Model specification

DEA is a comparative approach for identifying performance by considering multiple resources that are used to achieve outputs (efficiency) or outcomes (effectiveness). DEA identifies the optimal ways of performance, rather than the average, which distinguishes it from other techniques. It does not required an assumption on the functional form and can handle multiple inputs and outputs. (Cheng et al., 2016)

Types of DEA models can be identified based on the scale and orientation of the model. CCR model assumes constant rate of substitution between inputs and outputs while BCC model presupposes existing the economy of scale. Furthermore, in order to become more efficient, model can be oriented towards input minimization or output maximization. According to Hadad et al. (2013), Yugoslavia (Bosnia and Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia;), and Albania.
increasing needs and limited possibilities that contemporary health systems have to face, has brought a clear policy implication - the aim to maximize the value of investments in health system.

Due to the above mentioned and assuming variable returns to the scale, the output oriented BCC model was chosen for this analysis. Formulation of the chosen model is presented below (Hadad et al, 2013).

Consider n DMUs where each DMUj (j=1,...,n) uses m inputs \(X_j = (X_{j1}, X_{j2}, ..., X_{jm})' > 0\) to produce S outputs \(Y_j = (Y_{j1}, Y_{j2}, ..., Y_{js})' > 0\). For each unit k, model finds the best weights \(v^+_r (r=1,2,...,S)\) and \(v^-_i (i=1,2,...,m)\) that maximize the ration of total weighted output to the weighted input with \(h_k = \max \sum_{r=1}^S v^+_r Y_{rk} + L_k\) (k=1,2,...,n). The BCC model adds a constant variable \(L_k\) to the weighted output in order to permit variable returns to the scale. The output-oriented BCC model is formulated as follows (Formulas 1-5):

\[
\begin{align*}
h_i &= \max \sum_{r=1}^S v^+_r Y_{rk} + L_k \\
\text{s.t} \quad \sum_{j=1}^n v^+_j X_{jk} &= 1 \\
\sum_{j=1}^n U^-_j Y_{jk} - \sum_{i=1}^m V^-_i X_{ik} &\leq 0, j = 1, ..., n \\
U^-_j &\geq \varepsilon > 0, r = 1,2, ..., s \\
V^-_i &\geq \varepsilon > 0, i = 1,2, ..., m
\end{align*}
\]

DEA forms a frontier using the efficient DMUs. The efficient DMUs receive a score 1 and those that are not on the efficient frontier line, have scored less than 1, but greater than 0.

4. RESULTS OF EFFICIENCY ACROSS DIFFERENT STRUCTURE OF OWNERSHIP

Table 1 presents descriptive statistics for inputs and output of nine CESEE countries for 2013. Statistical data show very large differences in the size of the hospital system of selected countries, measured using selected inputs and generating output in this year. Selected hospital system, on average, had 580 beds and 55 physicians per 100 000 inhabitants, working in stationary/inpatient health care. On 100 000 inhabitants, average inpatient care discharges were 20, ranging from minimum 11.21 to maximum 30.62 patients.
Table 1

Descriptive statistics of inputs and output (per 100,000 inhabitants)

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Hospital beds</th>
<th>Physicians working in hospitals</th>
<th>Inpatient care discharges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>442.79</td>
<td>33.79</td>
<td>11.21</td>
</tr>
<tr>
<td>Maximum</td>
<td>728.20</td>
<td>64.79</td>
<td>30.62</td>
</tr>
<tr>
<td>Mean</td>
<td>579.6322</td>
<td>54.9833</td>
<td>19.8811</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>98.49324</td>
<td>9.32510</td>
<td>5.31743</td>
</tr>
</tbody>
</table>

Source: author’s calculation

Table 2 evidences the technical efficiency scores obtained from the output oriented BCC model. The efficiency analysis was conducted using computer software Frontier Analyst Banxia Software.

Table 2

Technical efficiency scores of health system in selected CESEE countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Efficiency score</th>
<th>Rank</th>
<th>1/score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Croatia</td>
<td>0.69</td>
<td>9</td>
<td>1.45</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>0.72</td>
<td>8</td>
<td>1.39</td>
</tr>
<tr>
<td>Estonia</td>
<td>0.86</td>
<td>4</td>
<td>1.16</td>
</tr>
<tr>
<td>Latvia</td>
<td>0.75</td>
<td>7</td>
<td>1.33</td>
</tr>
<tr>
<td>Lithuania</td>
<td>0.80</td>
<td>6</td>
<td>1.25</td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Romania</td>
<td>0.81</td>
<td>5</td>
<td>1.23</td>
</tr>
<tr>
<td>Slovenia</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: author’s calculation

As it can be observed from the first column, this model shows that three out of nine health systems are efficient. Health systems of Bulgaria, Macedonia and Slovenia received a score of 1 and are considered efficient. These systems are used to create an efficient frontier against which all other systems are compared. Observing the last column, those having the score greater than 1, are inefficient. These systems can improve their efficiency by augmenting their outputs. So, the Croatian health system needs to augment the output by 45% (1-1.45) in order to improve its efficiency.

The identification of optimal performance leads to benchmarking. Namely, identifying top performance of health system (Table 3), DEA provides information on alternative ways to raise efficiency (Table 4).
Table 3

Benchmarks for health system in selected CESEE countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Refs</th>
<th>Peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Croatia</td>
<td>0</td>
<td>2 (Bulgaria, Slovenia)</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>0</td>
<td>2 (Bulgaria, Slovenia)</td>
</tr>
<tr>
<td>Latvia</td>
<td>0</td>
<td>2 (Bulgaria, Slovenia)</td>
</tr>
<tr>
<td>Lithuania</td>
<td>0</td>
<td>1 (Bulgaria)</td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>0</td>
<td>3 (Bulgaria, Slovenia, MKD)</td>
</tr>
<tr>
<td>Slovenia</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

*Source: author’s calculation*

Based on the set of reference values (Table 3), three of them turn out to be the leaders with the best performance (health system of Bulgaria, Macedonia and Slovenia). They are on the best practice frontier and thus form the “reference set”. Namely, the third column (refs) presents number of references. For example, Bulgarian health system is a benchmark for six other health systems in the sample. Furthermore, for every inefficient health system, the model identifies a set of corresponding efficient health systems (peers). They present referent set which can be used as a benchmark for improving the performance of inefficient ones. Therefore the Croatia who has most inefficient health system, has two benchmark health system i.e. health system of Bulgaria and Slovenia.

Table 4

Target values of inputs and output (per 100 000 inhabitants)

<table>
<thead>
<tr>
<th>Country</th>
<th>Hospital beds</th>
<th>Physicians working in hospitals</th>
<th>Inpatient care discharges</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Target value</td>
<td>Target value</td>
<td>% of change</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>681.64</td>
<td>54.23</td>
<td>0</td>
</tr>
<tr>
<td>Croatia</td>
<td>585.87</td>
<td>54.63</td>
<td>-7.8</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>645.89</td>
<td>54.38</td>
<td>-7</td>
</tr>
<tr>
<td>Estonia</td>
<td>500.53</td>
<td>54.98</td>
<td>-15.1</td>
</tr>
<tr>
<td>Latvia</td>
<td>579.98</td>
<td>54.65</td>
<td>-0.4</td>
</tr>
<tr>
<td>Lithuania</td>
<td>681.64</td>
<td>54.23</td>
<td>-16</td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td>442.79</td>
<td>33.79</td>
<td>0</td>
</tr>
<tr>
<td>Romania</td>
<td>596.40</td>
<td>49.75</td>
<td>0</td>
</tr>
<tr>
<td>Slovenia</td>
<td>455.39</td>
<td>55.17</td>
<td>0</td>
</tr>
</tbody>
</table>

*Source: author’s calculation*

According to Table 4 and using the example of the most inefficient health system of Croatia, it can be concluded that with the existing inputs, the Croatian health system needs to increase the number of discharged patients by 45% to become technically efficient (the same result was also obtained in Table 2, as only one output was analyzed). On the other side, despite the augmentation in the output, Lithuania should also reduce hospital beds by 6.4% and physicians by 16%, in order to achieve an efficient score.
In the final step of the analysis, the relationship between the level of efficiency and the share of a private entity in inpatient health care was examined (Table 5). Namely, to test whether the efficient and inefficient health systems differ significantly according to the structure of private and public providers of inpatient health care, F-test of difference between the two independent samples and corresponding analysis of variance (ANOVA) is used. Although this is a test of differences between means of the two groups as t-test, the F-test can be used equivalently. In addition, the F-test is robust to heteroscedasticity of the variance between the two samples, so it is not necessary to conduct the tests of homogeneity of variances.

Table 5
Descriptive statistics of efficient and inefficient health systems with F-test of differences in means (private inpatient hospital beds as % of all beds).

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Efficient health systems</th>
<th>Inefficient health system</th>
<th>F-test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>7.0600</td>
<td>6.7833</td>
<td>0.003</td>
<td>0.955</td>
</tr>
</tbody>
</table>

Source: author’s calculation

According to Table 5 it can be concluded that there is no statistically significant difference between the participation of private sector in provision of inpatient health care between efficient and inefficient health systems. However, Bulgarian health system is a benchmark for all inefficient health systems in the sample and it has the largest scale of private providers of stationary health care in the sample (17.13% private inpatient hospital beds in all beds). But, Macedonia and Slovenia have much smaller scale of private providers, 2.96% and 1.09% private inpatient hospital beds in all hospital beds.

The search for explanations of the observed result using the presented data proved to be difficult. Although more analyses are needed to reveal the causes of presented result, there are few possible explanations of this result. Private entities see their investment as something that will be profitable for them. At the level of the overall health system, private entity is more likely to offer more-profitable services, i.e. more accessible services for a large number of people (Kordić, 2013). However, in that case, a new question is immediately raised - who pays for preventive or primary health care, i.e. whether savings in the public budget, made on the basis of cheaper services, result in higher spending on expensive inpatient health services.

Health policy makers and governments must be careful when designing health policy and national regulations. One more potential danger of involving private entities in the provision of health services is not declaring standards that define the appropriate level of quality and availability of health services. In this situation, private entities can compromise quality and availability with the aim of maximizing profit, resulting in a rise demand for expensive health services in the future.
5. CONCLUSION

In this paper, author has evaluated the technical efficiencies of health system in nine transition CESEE countries in 2013 in order to investigate whether there is a connection between different ownership of health providers and the achieved level of efficiency. Namely, selected countries have implemented and are still undertaking health care reforms aimed at introducing private sector in traditionally public health system. They see the private sector as one of possible solutions for overcoming the gap between the needs and possibilities that health systems have to face. However, the expected results of these activities have not been realized yet.

To calculate relative efficiency, DEA technique has been applied and more precisely estimates of efficiencies have been obtained by the output-oriented BCC model. The set of inputs consists of the number of doctors and the number of beds, while the number of the patients represents the output.

The results indicate that the level of technical efficiency of selected health system is 85 percent. Health system of Bulgaria, Macedonia and Slovenia received a score of 1 and are considered efficient, i.e. they represent the referential set for other relatively inefficient health systems. The results from the second stage of analysis indicated that there is no statistically significant difference between the participation of private sector in the provision of inpatient health care between efficient and inefficient health systems. Due to lack of knowledge on public-private partnership in transition countries, the current cooperation has not always had positive results.

Contributions of this research are measuring relative efficiency in homogeneity sample of transition CESEE countries aimed at investigating influence of private providers of inpatient health care on the efficiency of overall health system. Namely, most of cross-section analysis measure effectiveness of health system, but it is challenging to appropriately attribute particular inputs to health outcomes as health is the result of complex processes. Furthermore, most of cross-section analyses evaluate heterogeneous sample of countries thus jeopardizing the wrong interpretation of inefficiencies. In addition to the above stated, previous cross-sectional analyses compared the efficiency score to a certain variable, but, the structure of ownership has not been analyzed among these variables.

Although same theoretical questions can limit the interpretation of the results, this analysis offers valuable information about the possibilities for improving the efficiency and the role of private providers in achieving the desired state. This study can be improved and further extended. First limitation is the size of the sample due to data limitation. Furthermore, the study did not obtain information about the case mix. Finally, two step analyses can apply to investigate other factors which can influence the health system efficiency. A better insight into observed results, i.e. making conclusions on any causal relationship can only be achieved by collecting more detailed data.
REFERENCES


MONITORING OF THE EU REFORM AGENDA IN BOSNIA AND HERZEGOVINA

Abstract

The Reform Agenda became a buzzword in the political life of Bosnia and Herzegovina since it became the European Union requirement in front of domestic authorities. The key idea is to open a way towards a modernisation of the economy and more efficient social protection system. To be implemented, the reform measures listed by the Reform Agenda are transposed into detailed Work Plans with concrete actions, and deadlines for implementation and adopted by national governments, whilst its monitoring remains a challenge. This research proposes construction of the Reform Index that will monitor the progress and impact of implemented policy measures. Such index should be able to periodically monitor the reforms, but also compare the situation in B&H with other countries. In order to draw comparisons, indicators used in constructing the Aggregate Reform Index are selected among those provided by various international institutions (e.g. World Bank, International Labor Organization, Heritage Foundation, Transparency International, etc.) that use specific measures for ranking the world countries according to a set criteria.

Keywords: policy development, reforms, impact evaluation, development indicators

1. INTRODUCTION

The European Union through its delegation in Bosnia and Herzegovina (B&H) during 2013 brought together representatives of government, business and workers, along with international and domestic economic experts and BiH citizens who have insights on running businesses and creating jobs. The idea was to propose concrete and urgent measures to tackle unemployment and corruption, restore the investment flow into BiH jobs and make social protection fairer and more efficient.
These proposals have been developed into a *Compact for Growth and Jobs*, a practical agenda outlining the necessary economic reforms. Widespread consultations with local stakeholders led to the production of a final document in July 2014 that recognises the need for a renewed socio-economic modernisation effort by all segments of society to eliminate barriers to growth and prosperity. Six reform areas and respectively six sets of reform measures were identified in the *Compact* (see Table 1). They have been endorsed by the International Financial Institutions and the European Union, which are fully committed to help with their implementation and to provide financial assistance to alleviate their short-term effects.

Based on the Compact, the Reform Agenda (nationally owned implementation plan of the Compact) has been recently adopted by the authorities of Bosnia and Herzegovina opens the way towards the modernisation of the economy for achieving sustainable and socially equitable growth through accelerated job creation, improved economic competitiveness, fair distribution of income and related resources, and efficient social protection of persons in need. This will become possible by improving the business climate, strengthening the rule of law, reforming the public administration, institutional restructuring, and fighting against corruption.

In order to reach those objectives, RA envisions a number of reforms grouped into six main areas: Public Finance, Taxation and Fiscal Sustainability; Business Climate and Competitiveness; Labour Market; Social Welfare and Pensions; Rule of Law and Good Governance; Public Administration Reform, where the key challenges have been identified (see Table 1).

**Table 1**

<table>
<thead>
<tr>
<th>Reform Area</th>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Finance, Taxation and Fiscal Sustainability</td>
<td>Taxes on work</td>
<td>Currently the salary taxes in B&amp;H are too high (40%) and too intricate, pushing employees into the grey economy or abroad. According to Doing Business 2015, B&amp;H is ranked 151 in the world with respect to paying taxes (9 places lower than in 2014).</td>
</tr>
<tr>
<td>Business Climate and Competitiveness</td>
<td>Business climate</td>
<td>B&amp;H has one of most convoluted business climates in the world and is ranked 131st out of 189 countries.</td>
</tr>
<tr>
<td></td>
<td>Enterprises</td>
<td>Enterprises are fragile and many rely on hidden public support rather than face competition from the outside.</td>
</tr>
<tr>
<td>Labour Market</td>
<td>Labour regulations</td>
<td>Arduous and restrictive labour regulations attempt to protect employees but make it difficult to hire new ones.</td>
</tr>
<tr>
<td>Social Welfare and Pension Reform</td>
<td>Social welfare</td>
<td>The social welfare system is on the verge of financial collapse and benefits do not reach those in need.</td>
</tr>
<tr>
<td>Rule of Law and Good Governance</td>
<td>Corruption</td>
<td>Corruption affects all levels of public administration and thrives on perplexing laws and regulations.</td>
</tr>
<tr>
<td>Public Administration Reform</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: Author based on Brochure “The Compact for Growth and Jobs in Bosnia and Herzegovina», available at https://europa.ba/wp-content/uploads/2015/05/delegacijaEU_2014090816171626eng.pdf*
In each of these areas, EU and B&H authorities identified a package of concrete actions to be taken according to a set of medium-term priorities that will be further distilled into specific initial measures and undertakings which were decided during 2015 and concretized into an Action Plan(s). At the same time, a monitoring mechanism of its success remains a challenge. The goal of this research is to develop an index which will be able to monitor implementation of the reforms in Bosnia and Herzegovina. The original methodology has been developed by Constantin Zaman and Ranko Markuš within EU project “Technical Assistance to the BiH Compact for Growth and Jobs: Assessment of the BiH Employment Sector” (EuropeAid/132633/C/SER/multi), while later used by some other authors.

This paper is offering one possible way of monitoring the implementation of reforms, through construction of the Aggregate Reform Index (ARI) that will offer information about the evolution of the situation in all RA areas. Such an index should be able to monitor periodically the reforms, but also to compare the situation in B&H to reference countries from the Western Balkan region. ARI can be formulated on a yearly basis only due to available data gathered through various international sources – common for all countries in the sample.

2. THEORETICAL FRAMEWORK

Several authors have recognized importance of the reforms monitoring. For example, Christiansen, Schindler and Tressel (2009) claim that in many cases reforms are unsuccessful as monitoring and evaluation system is focused on individual reforms, rather than the bigger picture. Development in one area does not necessary bring positive development in others. The ideal scenario would be to develop a common and reliable indicator that would reflect development of reforms in all areas.

Several attempts have been made in this direction, trying to capture the overall impact of structural reforms. Johnson (2008) proposes such a methodology by using various indicators to measure the institutional development, Nauro and Roman (2006) constructed the “Reform Redux” as a new objective measure of reforms with focus on privatization and liberalization of the economy. Their objective has been to help to explain structural reform dynamics across countries. The paucity of objective indicators of reform is, a reason for serious concern, but also data collection within their sophisticated econometric model, which makes its conclusions vulnerable.

Radaelli and Fritsch (2012) are measuring a regulatory performance, through analyses of several areas. Their biggest challenge is limitation of the indicators, as most of them are based on output or intermediate outcomes rather than final outcomes, so impact measurement is very questionable. More indicators are needed to assess the value-for-money of oversight activities, they are even proposing the Doing Business Indicators, but rejecting the idea as it comes with their pros and cons. The main challenge is to handle causality, or in other words to control for a large number of plausible rival hypotheses which are coming with ready-made data.
Zaman and Meunier (2015) are proposing a tool which has the advantage of quantifying the overall progress of reforms in five different areas (labour market, business environment, public finance, social policy and public administration) through a common indicator on the case of Croatia. Their methodology is similar to one presented in this paper, but is was expected, as Markuš and Zaman are original creators of the methodology (EU project “Technical Assistance to the BiH Compact for Growth and Jobs: Assessment of the BiH Employment Sector” - EuropeAid/132633/C/SER/multi). The difference between two papers is in its country focus (Croatia vs. Bosnia and Herzegovina), slightly different indicators, but also in detailedness of the calculation presentation. While Zaman and Meunier are providing only strategic guidelines behind the methodology, this paper is presenting calculations in details.

3. CONSTRUCTING THE AGGREGATE REFORM INDEX

One possible way of monitoring the implementation of reforms is to construct a Reform Index that will offer information about the evolution of the situation in all RA areas. Such an index should be able to monitor periodically the reforms, but also to compare the situation in BiH to reference countries from the region and from EU. The tool can be constructed only on yearly basis; however, it is essential to monitor the implementation of reforms at shorter intervals (quarterly or even monthly) – at least during the first years of the period. A quarterly Reform Index, of different nature, should be therefore elaborated, which will also allow for monitoring the reforms at entity level. In order to create index there are several important points:

1. To collect data through different reports which are covering longitudinally areas (indicators) of the research interest;
2. To make data comparable – recalculate original values of the indicators on a scale ranging from 0 to 100;
3. To create pentagrams of reforms;
4. To calculate value of the indexes, which is essentially a surface of created pentagrams.

The ARI is aimed at monitoring the implementation of reforms on annual basis; the main purpose of this index is follow development of the reform process, by its evaluation against regional countries – former Yugoslavia and two other countries from the region (Bulgaria and Romania) that are relatively recent members of the European Union.

3.1. Calculation Methodology

Researchers selected 5 indicators for 6 domains of reforms (see Table 1). Indicators are not fully corresponding to areas of reforms. To make 5 indicators comparable, we need to define a common unit of measurement. The original values of the indicators are recalculated on a scale ranging from 0 to
In order to construct indices whose values can range between 0 and 100, the minimum and maximum admissible values, or also called as lower and upper bounds, must be determined, what is defined by individual methodologies of reports which are used as data sources. Although, in order to reduce the impact of extreme outliers on the distribution of index values, the bounds may be set higher (lower) than the actual minimum (maximum) value of the indicator’s data set, but within this research this has not been used.

By translating the original levels into the new scale, any initial point \( X_i \), lying between the minimal value \( X_{\text{min}} \) and the maximal one \( X_{\text{max}} \), will have a correspondent \( A_i \) on the new scale, which has the following expression:

\[
A_i = \frac{X_i - X_{\text{min}}}{X_{\text{max}} - X_{\text{min}}} \times 100
\]

Once calculated data is easy to be presented in a pentagon, on which every peak represents one of indicators, as presented at the figure 1.

![Figure 1 Pentagon of Reforms](image)

LTC – Labour Tax and Contributions
BF – Business Freedom
LF – Labour Freedom
SWE – Social Welfare Efficiency
CPI – Corruption Perception Index

The ARI area for each country would be represented though area of the pentagon. The area of a pentagon, i.e. value of the ARI, is the amount of space occupied by the pentagon. By definition, pentagon is defined as a polygon, which has 5 sides that are equal, and therefore all 5 angles are equal. A pentagon can be sectored into 5 similar triangles. The measurement of each interior angle in a regular pentagon 108 degrees, what makes calculation easier, but in case of the ARI due different values of indicators sides are not equal, and as a final result we have irregular pentagon or polygon. Therefore, we have to divide the shape into triangles and calculate the area of each triangle then add up the area of all the triangles, what leads us towards the value of the index. In another words, the ARI area is the sum of the surface bordered by each indicator within the corresponding triangle of the pentagon. For example, let’s consider the
triangle B&H pentagon, from which we calculate the area delimited by LTC and respectively BF indicators. The two indicators generate an area within a triangle that we denote by OAB, with O being the centre of the pentagon, and A and B the two edges. The LTC indicator is represented on the OA side (segment ON), while the BF one (segment OM) is on the OB side of the triangle.

Starting from data which are given one can conclude that ON = LTC = 73.89 and OM = BF = 53.5. Two angles A and B are equal (54°) and thus side AB of the pentagon is AB = 117.56. The area surrounded by the two indicators (LTC and BF) is given by the irregular triangle OMN. Since we cannot calculate directly that area, we use the difference between the area of the triangle OPN and respectively the area of PMN. Thus:

\[
\text{AOMN} = \text{AOPN} - \text{APMN}
\]

In the triangle OPN one can know that:

\[
\text{OP} = \text{ON} = \text{LTC}
\]

Angle OPN = Angle ONP = 54°
Therefore: \( \sin \text{OPN} = \sin 54° = 0.81 = h/\text{OP} \)
Which gives: \( h = 0.81\text{LTC} \)
Similarly: \( \cos \text{OPN} = \cos 54° = 0.59 = \text{PQ}/\text{OP} \)
which gives: \( \text{PQ} = \text{QN} = 0.59\text{LTC} \)
Thus: \( \text{PN} = 1.18\text{LTC} \)
The area of OPN triangle is: \( \text{AOPN} = 0.5h\text{PN} = 0.48(\text{LTC})² \)

In case of the triangle PMN the area is given by:

\[
\text{Figure 2 Index Calculation}
\]
APMN = 0.5gPN

The same procedure as before can be used to calculate the missing elements:

\[ \sin MPN = \sin 54^\circ = 0.81 = \frac{g}{PM} \]

We know that: PM = LTC - BF

Therefore: \( g = 0.81(LTC - BF) \)

The area of PMN is: \( A_{PMN} = 0.48LTC(LTC - BF) \)

The area surrounded by the two indicators is therefore: \( A_{OMN} = 0.48(LTC^2 - LTC + BF) \)

Generalizing, for any two indicators x and y the corresponding area they cover in the pentagon is:

\[ A_{x-y} = 0.48(x^2 - x + y) \]

The indicators used in ARI design are selected among those provided by various international institutions that use specific measures for ranking the world countries according to defined criteria. We selected 5 indicators for 6 domains of reforms (see Table 1). Indicators are not fully corresponding to areas of reforms, as “Business Climate and Competitiveness” and “Enterprises” are inter-related and consequently a single indicator is sufficient for monitoring these aspects. In the case of the last two areas of reforms in the RA (Rule of Law and Good Governance) an indicator “degree of corruption” shall be used, which should express how the rule of law is respected and along with the quality of governance.

3.2. Indicator 1: Taxes on Work

The most appropriate indicator for monitoring the labour taxation is offered by the World Bank in its annual Doing Business Report. The WB uses ten areas for calculating the Ease of Doing Business indicator in case of 189 countries around the world. According to this aggregate index, in 2015 B&H was ranked 107 (three positions lower than in 2014), below Barbados and above Nepal. Among these ten areas, the Paying Taxes indicator collects information about the total number of taxes to be paid, the time spent each year for paying those taxes, and the share of various taxes in the profit of companies. According to the Paying Taxes index, in 2015 B&H was ranked 151 in the world (9 positions below the year 2014):

<table>
<thead>
<tr>
<th>Country</th>
<th>Paying taxes (2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
</tr>
<tr>
<td>B&amp;H</td>
<td>151</td>
</tr>
<tr>
<td>Serbia</td>
<td>165</td>
</tr>
<tr>
<td>Croatia</td>
<td>36</td>
</tr>
<tr>
<td>Macedonia</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 2

Ranking of selected countries according to Paying taxes indicator
Within the Paying Taxes group, the World Bank follows the Labour tax and contributions (LTC) indicator, which expresses the amount of taxes and mandatory contributions on labour paid by the businesses as a percentage of their commercial profits. We consider that this indicator responds the best to the BiH reform needs in this area. The values of this indicator in B&H and in the selected countries are given in Table 3; for comparison, the indicator is equally provided for the average in OECD, respectively East Europe and Central Asia groups of countries, as well as for the two countries recording the minimum/maximum value of this indicator:

<table>
<thead>
<tr>
<th>Country</th>
<th>LTC(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slovenia</td>
<td>11</td>
</tr>
<tr>
<td>Montenegro</td>
<td>29</td>
</tr>
<tr>
<td>Romania</td>
<td>14</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>13</td>
</tr>
<tr>
<td>OECD high income</td>
<td>11.8</td>
</tr>
<tr>
<td>East Europe and Central Asia</td>
<td>20.5</td>
</tr>
<tr>
<td>OECD high income countries</td>
<td>175.4</td>
</tr>
<tr>
<td>OECD high income countries</td>
<td>14.86</td>
</tr>
<tr>
<td>East Europe and Central Asia</td>
<td>11.43</td>
</tr>
</tbody>
</table>

Table 3
Labour Tax and Contributions in selected countries (2015)

3.3. Indicator 2: Business climate & Enterprises

There are two main indicators that can be used for establishing ARI from the perspective of this indicator:

Starting a Business is part of the WB Doing Business methodology and includes the number of steps the entrepreneurs expect to go through to launch a business, the time it takes on average for that purpose, and the cost and minimum capital required as a percentage of gross national income (GNI) per capita to open the business.
In comparison of two data sources, the World Bank report previously elucidated above, while Heritage Foundation (HF) calculates the Business Freedom indicator. It is a quantitative measure of the ability to start, operate and close a business, and therefore reflects the overall burden of regulation and efficiency of the government in the regulatory process. The indicator is a value between 0 and 100, where 100 represents the freest business environment. The B&H situation, according to the two indicators has been presented in Table 4.

Table 4

<table>
<thead>
<tr>
<th>Country</th>
<th>Starting a business (WB Doing Business)</th>
<th>Business Freedom (Heritage)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
<td>Value</td>
</tr>
<tr>
<td>B&amp;H</td>
<td>147</td>
<td>72.51</td>
</tr>
<tr>
<td>Serbia</td>
<td>66</td>
<td>88.91</td>
</tr>
<tr>
<td>Croatia</td>
<td>88</td>
<td>85.43</td>
</tr>
<tr>
<td>Macedonia</td>
<td>3</td>
<td>98.08</td>
</tr>
<tr>
<td>Slovenia</td>
<td>15</td>
<td>94.39</td>
</tr>
<tr>
<td>Montenegro</td>
<td>56</td>
<td>90.05</td>
</tr>
<tr>
<td>Romania</td>
<td>38</td>
<td>91.93</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>49</td>
<td>91.09</td>
</tr>
<tr>
<td>Minimum</td>
<td>189</td>
<td>22.85</td>
</tr>
<tr>
<td>Maximum</td>
<td>1</td>
<td>99.96</td>
</tr>
</tbody>
</table>

It is believed that for purpose of ARI, the Heritage indicator (Business Freedom) is more appropriate because it covers not only the business starting phase but equally the operation and closure of activity, while incorporating aspects of government regulations of businesses. This aspect is of particular importance, as the key problem of the business climate in B&H is in its significantly troublesome regulatory framework along with the hidden public support impeding competition and adequate development of businesses.

It is of utmost importance to mention that an important indicator to be used for measuring the overall competitiveness is the Global Competitiveness Index (GCI) developed by the World Economic Forum (WEF). However, Bosnia and Herzegovina has been excluded since 2012 from the group of countries monitored by WEF due to problems related to data availability. In the last year, for which the CGI was calculated (2012), B&H was ranked 100 out of 142 countries (value of the index: 3.8 out of a maximum of 7). In the future, when B&H rejoins the sample, the Global Competitiveness Index could be used to replace the one proposed above.

3.4. Indicator 3: Labour regulations

In 2015 Heritage Foundation ranked B&H 97th in the world according to the Index of Economic Freedom, which captures several aspects regarding the freedom to do business, consume and invest. Such freedom exists when the
governments allow labour, capital and goods to move freely and refrain from coercion of constraint of liberty beyond the extent necessary to protect and maintain the liberty itself.

One component of the economic freedom is the Labour Freedom, monitored by HF through a specific indicator that is a quantitative measure looking into various aspects of the legal and regulatory framework of country’s labour market. The Labour Freedom indicator provides cross-country data on regulations concerning minimum wage, legislation that inhibits layoffs, severance requirements, and measurable regulatory burdens on hiring, working time, etc. Thus the Labour Freedom (LF), ranging from 0 to 100, expresses the best the needs for reforms in this area, as underlined by the Compact. According to LF, B&H scores 63.4 (moderately free to mostly unfree), below countries such as Mongolia, Albania or Botswana. As compared to the selected countries, the B&H situation is the following:

Table 5

<table>
<thead>
<tr>
<th>Country</th>
<th>LF (Value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B&amp;H</td>
<td>63.4</td>
</tr>
<tr>
<td>Serbia</td>
<td>70.4</td>
</tr>
<tr>
<td>Croatia</td>
<td>42.8</td>
</tr>
<tr>
<td>Macedonia</td>
<td>70.7</td>
</tr>
<tr>
<td>Slovenia</td>
<td>57.1</td>
</tr>
<tr>
<td>Montenegro</td>
<td>77.5</td>
</tr>
<tr>
<td>Romania</td>
<td>68.6</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>76.6</td>
</tr>
<tr>
<td>Minimum : North Korea</td>
<td>0</td>
</tr>
<tr>
<td>Maximum : USA</td>
<td>98.5</td>
</tr>
</tbody>
</table>

3.5. Indicator 4: Social welfare

According to the Social Welfare Function, B&H was ranked in 2013 on 59th position in the world below countries such as Iran, Botswana or Belarus. Nevertheless, the indicator is not delivered on annual basis; on the other hand, there is no other regular (on yearly basis) measurement/ranking of countries with respect to the efficiency of social spending that would provide an indication about the social welfare sector. Thus, an indicator for this particular reform area needs to be formulated that would envelop:

- The government financial efforts to improve the social welfare of its population;
- The efficiency of spending for this purpose, as high social expenditures does not necessarily mean that social benefits and services go to the people in need, as emphasized by Compact conclusions.

Hence, we use the Social Protection Expenditures (SPE) and the Poverty Rate (PR) in 41 countries from Europe as the statistical basis for the elaboration of the indicator Social Protection Efficiency. The first indicator (SPE) is taken from ILO World Social Protection Report and expresses the
amount spent on social protection as a GDP percentage. The second indicator (PR) can be found in various sources; the IndexMundi figures were used, which are updated regularly and are consistent across the world countries.

In order to beset the efficiency aspect, the Social Welfare Efficiency is established according the following steps:

1. We calculate the SPE per capita (SPEi) in each of the 41 countries of the sample: total Social Protection Expenditures is divided by the population of the respective country (in million inhabitants) and we obtain the percentages of GDP spent by each government with the social protection on 1 million persons.

2. We observe that there are countries spending very little, such as Russia (0.111 percentage points), Turkey (0.167 pp) or Germany (0.336 pp), while others allocate large resources per capita for social protection: Iceland (56.14), Malta (46.706) or Luxembourg (41.57).

3. Clearly, this indicator tells us how much the governments spend but nothing about how efficient the resources are used, as it is hard to believe that Germany has one of the most inefficient systems of social protection in Europe. Efficiency means that with one percentage point of GDP spent of social protection the highest possible number of persons is taken out of poverty.

We need therefore a common reference for efficiency that will express the optimal SPE per capita at which the poverty is completely eradicated in the country. This Reference SPE (RSPE) can be calculated from the elasticity of Poverty with respect to Social Protection Expenditures: by how much poverty declines when the government increases the expenditures on social protection by 1%. Using the average figures for all the European countries of the sample, we obtain:

$$ RSPE = 0.324 $$

This means that, in average, Europe can eradicate the poverty if 32.4% of GDP is allocated for social protection purposes. Currently, 27.1% is assigned for this sector, and the poverty rate reaches 16.4% of European population.

The Reference SPE is simply the ratio between the SPE and the non-poor population:

$$ RSPE = \frac{SPE}{1 - PR} $$

Based on the reference value, the indicator of Social Welfare Efficiency in a particular country i (SWEi) is calculated as the difference between the SPE per capita in that country (SPEi) and RSPE:

$$ SWEi = SPEi - RSPE $$

The SWE is optimal when the above difference is zero because in that case the corresponding country spends exactly the amount necessary for taking
people out of poverty. If the SWE is negative, the authorities underspend on social protection; this is the case in Russia and Turkey for example. On the contrary, if the SWE is positive, the country overspends on social protection, as compared to the outcomes (in terms of poverty rate); the highest overspending is recorded in Iceland, Malta and Luxembourg. The closest countries to the optimal SWE are Germany (0.012) and UK (0.048).

Both underspending and overspending are inefficient: in the first case due to resource insufficiency allocated to social protection, which pushes a segment of population into poverty; in the second situation owing to the financial resources partially wasted with either too generous benefits for a part of population in the detriment of a share of needy individuals, or with a system of social protection that do not target well those in effective need.

In case of B&H versus other countries of the selected sample, the situation with respect to the SWE indicator is the following:

<table>
<thead>
<tr>
<th>Country</th>
<th>SWE</th>
</tr>
</thead>
<tbody>
<tr>
<td>B&amp;H</td>
<td>4.256</td>
</tr>
<tr>
<td>Serbia</td>
<td>2.388</td>
</tr>
<tr>
<td>Croatia</td>
<td>4.667</td>
</tr>
<tr>
<td>Macedonia</td>
<td>8.377</td>
</tr>
<tr>
<td>Slovenia</td>
<td>10.595</td>
</tr>
<tr>
<td>Montenegro</td>
<td>31.705</td>
</tr>
<tr>
<td>Romania</td>
<td>0.567</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>2.082</td>
</tr>
</tbody>
</table>

Minimum:
Underspending: -0.157 (Turkey)
Overspending: 0.012 (Germany)

Maximum:
Underspending: -0.213 (Russia)
Overspending: 55.816 (Iceland)

3.6. Indicator 5: Corruption

In 2014 Transparency International (http://www.transparency.org/) ranked B&H on the 80th position according to the Corruption Perception Index (CPI), below countries such as Senegal, South Africa or Swaziland.

The international literature has utilized two main indicators for measuring corruption: the above CPI developed by Transparency International, respectively the Freedom from Corruption (FC) calculated by the Heritage Foundation. Recently, the World Bank proposed a similar indicator – the PACI (Public Administration Corruption Index) that measures the cross-national corruption based on the geographic distribution of public officials involved in cross-border corruption cases. However, the PACI responds to a much lesser extent to the specific needs of the reform area we want to monitor here.

According to the first two indicators, the situation in Bosnia and Herzegovina versus the other countries from the selected sample is the following:
After different analyses it has been decided that the most appropriate indicator to be used for monitoring the reforms in this domain is the Corruption Perception Index developed by Transparency International.

### DISCUSSION: CONSTRUCTION OF THE PENTAGON OF REFORMS

The five indicators to be used for constructing the ARI are grouped for 8 countries of the sample (for the year 2015). Three of them (Business Freedom – BF, Labour Freedom – LF, and Corruption Perception Index – CPI) do not need any transformation because they are already expressed on a scale ranging from 0 to 100. In case of SWE (Social Welfare Efficiency), the new scale must be reversed because the lowest value (0) corresponds to maximum efficiency, while the highest values (55.816 in case of over-spending, respectively -0.213 in case of underspending) corresponds to the minimum spending efficiency. The same reversion applies in case of LTC (Labour Tax and Contributions), where high values are counter-productive, while low levels of the indicator stimulate the economy and the job creation.

### Table 8

<table>
<thead>
<tr>
<th>Country</th>
<th>LTC</th>
<th>BF</th>
<th>LF</th>
<th>SWE</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>B&amp;H</td>
<td>13.5</td>
<td>53.5</td>
<td>63.4</td>
<td>4.256</td>
<td>39</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>20.2</td>
<td>68.5</td>
<td>76.6</td>
<td>2.082</td>
<td>43</td>
</tr>
<tr>
<td>Croatia</td>
<td>17.1</td>
<td>55.8</td>
<td>42.8</td>
<td>4.667</td>
<td>48</td>
</tr>
<tr>
<td>Macedonia</td>
<td>0</td>
<td>79.2</td>
<td>70.7</td>
<td>8.377</td>
<td>45</td>
</tr>
<tr>
<td>Montenegro</td>
<td>12.8</td>
<td>77.1</td>
<td>77.5</td>
<td>31.705</td>
<td>42</td>
</tr>
<tr>
<td>Romania</td>
<td>31.5</td>
<td>69.8</td>
<td>68.6</td>
<td>0.567</td>
<td>43</td>
</tr>
<tr>
<td>Serbia</td>
<td>20.2</td>
<td>57.8</td>
<td>70.4</td>
<td>2.388</td>
<td>41</td>
</tr>
<tr>
<td>Slovenia</td>
<td>17.1</td>
<td>81.2</td>
<td>57.1</td>
<td>10.595</td>
<td>58</td>
</tr>
<tr>
<td>Minimum</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Maximum</td>
<td>51.7</td>
<td>100</td>
<td>98.5</td>
<td>55.816</td>
<td>92</td>
</tr>
</tbody>
</table>

During rescaling we have therefore:
No change in scale: BF, LF and CPI;
Reversed scale (100 minimum and 0 maximum): LTC and SWE.

Through the scale reversion the above transformation formula becomes:

\[
Ai = 100 - \frac{X_i - X_{\text{min}}}{X_{\text{max}} - X_{\text{min}}} \times 100
\]

Based on the rescaled values of the indicators, the first step in constructing the ARI is the graphical representation of those values for each country. From calculated figures we observe that the best performance by indicator is achieved by:

- Labour Tax and Contributions: Macedonia;
- Business Freedom: Slovenia;
- Labour Freedom: Montenegro;
- Social Welfare Efficiency: Romania;
- Corruption Perception Index: Slovenia.

It is possible to obtain the corresponding pentagon for each of the eight countries of the sample, but for the purposes of this paper as example has been presented only pentagon of reforms for Bosnia and Herzegovina (see Figure 4 below).

![Figure 4 The Pentagon of Reforms B&H](image)

**Source: Author’s calculations**

ARI has been calculated for each country on the basis of the area covered within the pentagon; it represents the percentage of the surface delimited by the five indicators in the total area of the pentagon. The pentagon’s surface corresponds therefore to the ideal level of reforms. From ARI calculations we can see that B&H records the lowest index, but very close to the Croatian. The best performer is Macedonia from this point of view, followed by Bulgaria.

There is no country in the world recording a maximum level of ARI (100), but in some developed economies the index approaches 90%. Thus, we can conclude that B&H needs to double its efforts for reforming the economy.
and institutions in order to reach such a high level of development. However, the mid-term objectives should be to achieve a reform status that will bring the country closer to the average ARI of the region, which is 53.7.

As compared to this average, B&H is advancing in three indicators: Labour Tax and Contributions (37.6% above the average), Labour Freedom (18% higher), and respectively Social Welfare Efficiency (72% superior to average). In contemplation to the other two indicators Bosnia and Herzegovina is below the average by 37.2% in Business Freedom, and by 27.4% in terms of corruption. Overall, the average of all five indicators in B&H is by 10.7% above the mean of the whole sample.

In two indicators B&H is on the last position among the eight countries in terms of performance. The worst performers conducive to each of the five indicators are:

- Labour Tax and Contributions: Romania;
- Business Freedom: Bosnia and Herzegovina;
- Labour Freedom: Croatia;
- Social Welfare Efficiency: Montenegro;
- Corruption Perception Index: Bosnia and Herzegovina.

The largest area within the pentagon – meaning the most advanced reform domain – corresponds to the SWE-CPI indicators in case of BiH, Bulgaria, Croatia, Romania and Serbia. Macedonia records the highest area in case of LTC-BF indicators, Montenegro in LF-SWE ones, and Slovenia in case of BF-LF indicators. The lowest area (thus the field where reforms are most necessary) is recorded in the following domains: BiH in CPI-LTC; Bulgaria and Romania in LTC-BF; Croatia, Macedonia and Slovenia in LF; Montenegro.
in SWE-CPI; Serbia in BF-LF. It follows that the Corruption/Labour taxation induce the least reformed combination of indicators in Bosnia and Herzegovina.

However, the interpretation of the index through a single point in time is not fully relevant because the reform is a continuously dynamic process. Through the indicators that define it, the ARI changes therefore over time; its values may go up with the advancement of reforms, or – on the contrary – could decline if certain policy measures are inappropriate or badly implemented. It is therefore beneficial to regard the historical evolution of the index prior to 2015 in order to evaluate the progress of past reforms that ended up with the current level of ARI, but also to identify the areas that contributed the most to the existing situation.

We therefore present in Figure 6 the trend of the index over the period 2005 – 2014 for B&H (the index cannot be calculated for 2005 because of missing data), from which is visible that the evolution is rather sinusoidal, with alternative increase and decrease in ARI values, but with a small positive trend over the whole period. If compare to other countries (calculation not presented) in 2014, the index of BiH recorded a level that is equivalent to the Croatian ARI in 2008 (although the two countries have been very close all over the period); all the other countries have always recorded a significantly higher index than Bosnia and Herzegovina.

![Figure 6 Historical trends of Aggregate Reform](image)

**Source:** Author’s calculation

5. **CONCLUSIONS**

The Compact for Growth and Jobs represents a practical agenda outlining the necessary economic reforms in Bosnia and Herzegovina, highlighting the need for a renewed socio-economic modernisation effort by all segments of society to eliminate barriers to growth and prosperity. This research explained in details construction of the Reform Index that monitors the progress and impact of implemented policy measures. Such index should be able to periodically monitor the reforms, but also compare the situation in B&H with other countries.
In order to draw comparisons, indicators used in constructing the Aggregate Reform Index (ARI) are built on annual basis and offering the possibility for international comparisons. The ARI is aimed at monitoring the implementation of reforms and evaluating the BiH situation in comparison with its neighbors from former Yugoslavia and two other countries from the region (Bulgaria and Romania). The indicators to be used in constructing the aggregate index are selected among those provided by various international institutions that use specific measures for ranking the world countries according to particular criteria, such as facility to do business, economic freedom, corruption and rule of law, burden of taxation policy, etc. The five indicators to be used in constructing the aggregate index of reforms are therefore the following (according to the reform areas defined by the Compact): Labour Tax and Contributions (for the Taxes on work); Business Freedom (for Business climate and Competitiveness); Labour Freedom (for Labour regulations); Social Welfare Efficiency (for Social Welfare); Corruption Perception Index (for Corruption).

ARI is constructed both in graphical form (as a pentagon of reforms) and numerical form. According to the numerical values, BiH records the lowest index among the 8 selected countries. When considering the uniformity of reforms, in Bosnia and Herzegovina has the less uniform (consistent) reforms in the sample. Consequently BiH authorities need to concentrate their efforts in two main directions:

− Speed up the implementation of policy measures in those area that lag behind in terms of reforms – in particular Corruption and Business Freedom;

− Follow a consistent path of reforms by emphasising on a more balanced approach of those reforms across the five domains identified as prior areas of change.

Limitation of the ARI proposed methodology are in the fact that it shows only one aspect of the average reform progress in a country. The second important element which is not directly expressed by the ARI values, is the internal consistency of reforms; specifically, the ARI does not tell us if a country uses a consecutive or a simultaneous approach in implementing its reforms. Moreover, data collection is not under direct control of the beneficiary country, so it is difficult to follow which actions are bringing the best results, and data dependency is making it impossible to calculate the index in some specific timings.

It is important to highlight that calculations presented in this research are representing a baseline against which developments of the reform will be judged. Thence, the same group of indicators over extended period should be analysed in a form of the longitudinal research. In some cases, longitudinal studies can last several decades, but in this case it should be used as governmental tool for monitoring reforms; having in mind that goals or focuses can be changed, length of the research should be realistically analysed and decided in line with needs of its beneficiary.
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THE EMPLOYMENT OF WORKFORCE AGE 50 plus IN THE V4 COUNTRIES

Preliminary communication
UDK: 331.522.4-053.8
JEL classification: M51, M54, O15, J14, J21

Abstract

From an economic perspective, the current trend of European population aging, perceived as a serious problem, because of the rising costs of social security, pension policy of the state, long-term health care, employee training and not least the growth of unemployment benefits. The aim of paper was to identify and compare factors affecting age management and employment of workers age category 50+ in the V4 countries. On the basis of secondary data gained from statistical portals were assessed the current employment situation of workforce category 50+ in the V4 countries, the Czech Republic, Hungary, Poland and the Slovak Republic. The obtained data were organized and processed into graphic form. To determine differences and dependent variables of interest were used two-dimensional contingency tables. For the analysis of contingency tables were used chi-square test, and the actual and expected values were compared. Results of testing and validation of hypotheses were discussed and processed into conclusion.

Keywords: age management, employment, workforce 50+
1. INTRODUCTION

Countries of Visegrad agreement (hereinafter V4), the Czech Republic, Slovakia, Hungary and Poland, but also other countries in Europe, currently extending the age of retirement. The age of retirement is increasing mainly due to the demographic changes and increasing life expectancy (Boldrin, Montes, 2005). Thanks to these demographic changes also increases the proportion of people who have valuable experience, specialized professional knowledge, greater responsibility, reliability, maturity. (Cervellati, Sunde, 2005). If the Czech Republic wants to achieve economic growth and stabilize its pension system will have to take into account the potential of older workers (Dufek, Minařík, 2009, Blankenau, Simpson, Tomljanovich, 2007, Gonzales-Eiras, Niepelt, 2012, Boons, Montalvo, Quist, Wagner, 2013). It is argued repeatedly in the literature that there is several factors influencing the employment growth. A wide range of authors study the implications of demographic aging on economic growth (Börsch-Supan et al., 2007), the regional disparities (Ludwig, 2005), the influence of workers aging (Gonzalez-Eiras, Niepelt, 2008), Schimke 2014), the workforce age distribution (Lévesque, Minniti, 2005, Acemoglu, Johnson, 2007).

The aim of paper was to identify and compare factors affecting employment of workers age category 50+ in the V4 countries and assessed the current employment situation of workforce category 50+ in the V4 countries, the Czech Republic, Hungary, Poland and the Slovak Republic. The research questions were focused to the relation between minimum wage and the employment rate and the relation between unemployment rate to the education level in V4 countries among people aged 55 or over.

1.1. Labor market of V4 countries

Despite setting the European Economic Community main goal, the common market, characterised by free movement of goods, services, people and capital, there are still economic and labour market differences among the states (Barro, 2008, Ehrenberg, Smith, 2011, Bohlander, Snell, 2012, Eurostat, 2016). The European labour market is perceived as less flexible than labour market of United States, which is caused by many regulations of the companies by state, avoiding immediate adaption to market changes and trends (OECD, 2016, Hopkins, 2007, Di Domenico, Spattini, 2008, Hall, Lieberman, 2012). The large proportion of US labour force belongs to labour unions, which accomplish to push the gross wage above the market equilibrium level, causing the higher unemployment rate. (Mankiw, 2012, Carbaugh, 2011, Baumol, Blinder, 2012, Arnold, 2013). The Czech Republic (hereinafter Czechia) has represented the V4 countries with the highest unemployment rate for the past decade (MPSV, 2015). Within that time employment rate hasn’t dropped below 64%.
Figure 1 The employment rate for persons 15-64 years of all countries (in%)

*Source: Eurostat, 2015, the own processing*

Figure 2 The employment rate for people 55 and older in the years 2003, 2008 and 2013

*Source: Eurostat, 2015, the own processing*

The most visible change was recognised in Slovakia, where the rate almost doubled within five years (from 24.6% in 2003 to 44% in 2008). Outcome of this change caused that Slovakia shifted from the last place to the one before Poland and Hungary (WBJ, 2014, Eurostat, 2015). The least significant growth was found in the Czech Republic, amounting to less than 10% in ten years due to high employment rate it had kept among people aged 55 and older. Based on data displayed in the figure number 2 can be concluded that the Czech Republic had a lot older workforce than the rest of studied countries.
In every V4 country can be observed a trend of increasing number of people aged 65 and older within the total population. In case of Slovakia and Poland numbers had been growing at a slow pace (2% per studied time period), while in the Czech Republic the number of people aged 65 and older increased from 13% to 18% among the overall population.

Source: Eurostat, 2015, own processing
The unemployment rate, displaying into the figure number 4, within the studied countries can be divided to two time periods. Before 2008 there had been two pairs of countries with similar data: Czechia + Hungary and Poland + Slovakia. While data for Czechia and Hungary remained rather stable and below 10%, the latter amounted to approximately 20%. Second time period would be the post 2008, when unemployment rate of these four countries equalized. Average unemployment rate amounted to 7% in Czechia, approximately 10% in Hungary and Poland, and 15% in post-crisis Slovakia.

1.1.1. The unemployment in relation to the education level

People over 50 years old, along with women and graduates belong to the segment of the labor market most threatened by unemployment. (Schneider, Kallis, Martinez-Alier, 2010). The unemployed in the 50 plus age group are on the increase. The greatest difficulty in finding work can be observed especially among elderly people with low education. The graphic figure number 5 showed level of employment in relation to the education level among people aged 25-64 years and proved the widely known claim that the higher the level of acquired education the better opportunities employee has on the job market.

![Figure 5 Employment rate by educational attainment 25-64 (in%), Pre-primary education, primary education and lower secondary education](image)

Source: Eurostat, 2015, own processing

Therefore people with lower education level would become more dependent as their qualifications allow them a very limited range of employment opportunities. It can be observed a 5% increase in one year (Hungary 2013-2014) or a 10% decrease within four years (Poland 1998-2002). Individuals with high school education were less dependent on such changes and average employment rate amounted to 65%. The employment rate among people aged 25-64 years with higher secondary education in Poland rose to more than 68% in 1998. In 2002-2006 it dropped below 60%. In Czechia, employment rate in this segment did not drop below 71% within the studied period.
Employment rate among the working age population 25-64 years with tertiary education in all observed countries remained stable and amounted to approximately 80%. When comparing the three graphs, data for Slovakia had specific characteristics during the time period 2004-2006 with the most significant difference between 82% employment rate among people with tertiary education and 37% employment rate among people with primary education. Following graphs display levels of employment from the highest acquired education among the age group 25-64 years.

The Figure number 7 with unemployment rate data among people in the age group 25-64 years with primary or secondary education showed differences.
between Slovakia and other Visegrad countries. Comparison between Slovakia and Hungary in 2004 showed almost fourfold unemployment rate in Slovakia, 11% compared to 49%. Graphic figures showing unemployment rate of people in the age group 25-64 with higher secondary education can be divided into two time periods. Before 2008 a significant difference could be seen between Czechia - Hungary and Poland – Slovakia. Since 2004 the Polish-Slovak couple have been trying to decrease the employment rate and catch up with the Czech-Hungarian model. In 2008 figures of these four countries equalized the most and on top of that it was the year with the lowest unemployment rate for the past decade for three out of four countries, with 3,3 % in Czechia, 7,4% in Slovakia, 6,3% in Poland and Hungary. The “pairs” disappeared but similar graphs remained after 2008, where Czechia had best results at around 6%, while Slovakia had the worst results at around 12%.

![Figure 8 Unemployment rate by educational attainment 25-64 (in%) - Tertiary education](image)

Source: Eurostat, 2015, own processing

The last figure number 8 with observed age group 25-64 displays a group with tertiary education. There could be founded the lowest rates within all three graphs, where differences were even tenfold. It was worth to mention the relative constancy in Czechia, which remained around 2%.

2. DATA AND METHODS

Testing of hypotheses included two hypotheses, the null hypothesis ($H_0$) and alternative hypothesis ($H_1$). The null hypothesis considered independence of variables and the alternative hypothesis falsified the null hypothesis. For the verification process level of significance of chi-square was set to 5% ($\alpha = 0.05$). Two pivot tables were used to identify the difference and dependence of observed variables, while dependency between variables was derived from their values.
In order to analyse the pivot tables the chi-square test $\chi^2$ about independence was used, which further compared the real and expected values. Formulas for testing criteria were as following:

$$\chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{s} \frac{(n_{ij} - n'_{ij})^2}{n'_{ij}}$$  \hspace{1cm} (1)

- $n_{ij}$: theoretical/expected frequency,
- $n'_{ij}$: calculated conditional frequency,
- $i$: row number in the pivot table,
- $j$: column number in the pivot table,
- $r$: number of rows in the pivot table,
- $s$: number of columns in the pivot table.

Pearson correlation coefficient was used for identifying levels of dependency between variables:

$$r = \frac{\sum_{i=1}^{n} (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n} (x_i - \bar{x})^2 \sum_{i=1}^{n} (y_i - \bar{y})^2}}$$  \hspace{1cm} (2)

- $x$: independent variable,
- $y$: dependent variable,
- $\bar{x}, \bar{y}$: averages of individual variables,
- $n$: frequency

According to the calculated values of testing criteria of the chi-square test it was possible to further decide verification or falsification of the null hypothesis. Level of dependency was identified based on the correlation coefficient. Program STATISTICA was used for calculations. Before data collection, were provided the following hypotheses.

### 2.1. Hypothesis Testing Results

#### The First Hypothesis

The hypothesis was raised with the aim to prove whether:

- $H_0$: Minimum wage is not influenced by the employment rate in relation with the acquired education.
- $H_1$: Minimum wage is influenced by the employment rate in relation with the acquired education.

$P$-values of the Pearson’s chi-square test per each country and level of acquired education were used for testing of the first hypothesis.
Table 1

The first hypothesis testing results

<table>
<thead>
<tr>
<th>Country</th>
<th>p-value</th>
<th>correlation coefficient R</th>
<th>result</th>
<th>rejection H0</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR - primary</td>
<td>0.003651</td>
<td>0.6639</td>
<td>p &lt; 0.05</td>
<td>yes</td>
</tr>
<tr>
<td>CR - secondary</td>
<td>0.070779</td>
<td>0.4488</td>
<td>p &gt; 0.05</td>
<td>no</td>
</tr>
<tr>
<td>CR - tertiary</td>
<td>0.000000</td>
<td>0.9397</td>
<td>p &lt; 0.05</td>
<td>yes</td>
</tr>
<tr>
<td>SK - primary</td>
<td>0.001449</td>
<td>0.8331</td>
<td>p &lt; 0.05</td>
<td>yes</td>
</tr>
<tr>
<td>SK - secondary</td>
<td>0.247356</td>
<td>0.3812</td>
<td>p &gt; 0.05</td>
<td>no</td>
</tr>
<tr>
<td>SK - tertiary</td>
<td>0.000295</td>
<td>0.8849</td>
<td>p &lt; 0.05</td>
<td>yes</td>
</tr>
<tr>
<td>PL - primary</td>
<td>0.822687</td>
<td>0.0816</td>
<td>p &gt; 0.05</td>
<td>no</td>
</tr>
<tr>
<td>PL - secondary</td>
<td>0.015737</td>
<td>0.7336</td>
<td>p &lt; 0.05</td>
<td>yes</td>
</tr>
<tr>
<td>PL - tertiary</td>
<td>0.144971</td>
<td>0.4959</td>
<td>p &gt; 0.05</td>
<td>no</td>
</tr>
<tr>
<td>HU - primary</td>
<td>0.308566</td>
<td>0.3823</td>
<td>p &gt; 0.05</td>
<td>no</td>
</tr>
<tr>
<td>HU - secondary</td>
<td>0.627789</td>
<td>0.1882</td>
<td>p &gt; 0.05</td>
<td>no</td>
</tr>
</tbody>
</table>

Source: author’s calculations

Based on the calculations displayed in the table, there could be concluded that in case of nine options was the calculated value higher than the level of significance, and therefore in these cases the null hypothesis couldn’t be falsified. In another six cases the null hypothesis was falsified and the alternative hypothesis was verified. In such cases, results were highlighted in bold letters and showed that minimum wage was influenced by the employment rate in relation with acquired level of education among the respective population.

The Second hypothesis

The hypothesis was raised with the aim to prove whether:

H0: Employment rate among people aged 55 or over is not influenced by population aged 65 or over.

H1: Employment level among people aged 55 or over is influenced by population aged 65 or over.

Table 2

The second hypothesis testing results

<table>
<thead>
<tr>
<th></th>
<th>Czechia</th>
<th>Slovakia</th>
<th>Poland</th>
<th>Hungary</th>
<th>V4</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-value</td>
<td>0.000002</td>
<td>0.000049</td>
<td>0.000004</td>
<td>0.000162</td>
<td>0.007769</td>
</tr>
<tr>
<td>correlation coefficient R</td>
<td>0.9539</td>
<td>0.9059</td>
<td>0.9443</td>
<td>0.8797</td>
<td>0.3797</td>
</tr>
<tr>
<td>result</td>
<td>p &lt; 0.05</td>
<td>p &lt; 0.05</td>
<td>p &lt; 0.05</td>
<td>p &lt; 0.05</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>rejection H0</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

Source: author’s calculations

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When testing the second hypothesis, p-value of Pearson’s coefficient calculated for V4 countries was lower than the level of significance. In such case the null hypothesis could be falsified. There could be concluded, with 5% risk, that the employment rate among people aged 55 or over was influenced by population aged 65 or over. According to the correlation coefficient, which amounted to more than 90% in three countries, and reached almost 90% in the fourth country, there could be concluded that there was a very high level of dependency.

2.1.1. Summary of results

In case of the first hypothesis compliance was found between Czechia and Slovakia. Minimum wage in these countries was influenced by employment rate with regard to the highest acquired education. Completely different results were found in Poland, where minimum wage was influenced only by the employment rate among people with high school education. In case of Hungary the null hypothesis was valid, which showed independence between these variables in relation to all three types of acquired education. Findings based on testing the second hypothesis showed that the employment rate among people aged 55 or over was influenced by the population rate of people aged 65 or over. Increasing number of people in retirement age and the overall aging population have led to growing number of people of the same age group, who were still working, although they had the right to retire. Based on these findings, there could be concluded that growing population rate among people in retirement age led to growing number of working population aged 55 or over, and therefore use of senior workforce within the V4 countries. When comparing the Visegrad countries, the best results in relation to the employment rate were found in the Czech Republic. Overall employment rate did not go below 64% within the studied period, employment rate among people aged 55 or over in 2013 exceeded 50%. Overall average unemployment rate was 7%. Although the V4 countries showed rather balanced results, research data identified some differences. Slovakia had the highest results with regard to the unemployment rates among primary education and lower secondary education, where it reached 40%. Within the V4 countries, Hungary was hit the most by the financial crisis in 2008 and hasn’t caught up on its pre-crisis employment rate.

2.1.2. Discussion

The Czech population, as well as the European population, is aging. Simultaneously with the improvement of medical care, life expectancy also increases. The age limit for retirement is prolonged. Despite the problems of maintaining and finding employment in older age, widely discussed in the literature, people over 50 are an integral part of the overall labor market and holders of values. Workers seniors bring companies a clear vision, goals, experience and knowledge of the processes (Casey, Metcalfand, Lakey, 1993, Goudswaard, De Nanteuil, 2001, Ilmarinen, Tuomi, 2004). Individual countries are taking measures to reduce unemployment in this age group. Whether it is an active employment policy tools, retraining, support for community work,
counselling or individual contributions to the establishment and operation of socially useful jobs (The world of labour, 2013) However, it faces the fears and prejudices of employers that older classes are less learning new things, adapting to change, slowing down, and failing to keep up with technological developments. (Glomm, Ravikumar, 1992, Finnish Institute of Occupational Health, 2014). Part of the perception is shared by the candidates themselves. They suffer from feelings of inferiority, they do not believe, they cannot adapt and neglect lifelong learning. The solution can be assembling teams across age groups, the so-called diversity team in order to keep these workers in the labor market, share their experiences and bring benefits to all interested parties (Rašticová, 2013).

3. CONCLUSIONS

The aim of the paper was to determine the factors affecting the employment of workforce segment age 50 plus in the labor market in the countries of the Visegrad agreement, comparing individual countries, examined their differences and similarities.

The significant impact has been proven in the segment of educational attainment as well as high dependency between employment rates among people aged 55 and the population rate. In the hypotheses examined in this work, we have made the surprising result in the minimum wage, depending on the unemployment rate. The result was, however, reversed in three states: a rising minimum wage, companies are reluctant to hire fewer employees and thus increasing unemployment in the country. Therefore the Czech Republic has many open questions in the future how to approach towards western European countries, their developed economies and highly set up remunerations. Further research is necessary in order to delineate essential versus optional steps in the age management process to avoid unemployment into workforce segment age 50 plus.

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GENDER UNIQUE HUMAN CAPITAL AND LABOUR MARKET RETURNS

Preliminary communication  
UDK: 331.5  
JEL classification: C14, J16, J24, J31, M51

Abstract

The purpose of a research* is to better understand the possible reasons behind gender wage disparities, focusing on the unique features of male and female human capital and their labour market returns. The research relies on application of the PIAAC (The Programme for the International Assessment of Adult Competencies) database allowing to measure individual cognitive abilities in literacy, numeracy and problem solving. Several methodological approaches including also non-parametric matching based decomposition are applied towards identifying a role of human capital in wage disparities. The results showed that skills are valued at a labour market often more than formal education, hence men’s better numeracy and problem solving abilities help them to attain higher wage, despite lower formal education. Effective policy aiming to support development and efficient use of existing human potential, should consider reasoning of females’ “brain drain”, e.g. on-job training, welfare system, norms and several non-cognitive factors.

Keywords: human capital, cognitive skills, PIAAC, Nordic region

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1. INTRODUCTION

Good human capital is an essential component of economic competitiveness in globalized world being a core driver of economic prosperity and well-being in every country. Therefore, economic literature continually put emphasis several aspects of human capital including also gender issues and differences in labour market outcome of men and women. Actually, the research focused on the examining various ways in which economic outcomes differ by genders has been stressed interest among mainstream economists surprisingly recently (Eswaran 2014). In the recent decade the scholars started addressing these issues more systematically following often also interdisciplinary research framework (Borghans et al 2008; Polachek, S., Xiang J., 2009; Duflo 2012).

During the recent half-century, the participation of women in the labour market has steadily increased and the gender gap in labour force participation has notably declined, but gender wage gap is still remarkable high. For instance, women’s gross hourly earnings were on average 16.3 % below those of men in the EU-28 and 16.8% in the euro area (EA-19) in 2015. Across Member States, the gender pay gap varied by 21 percentage points, ranging from 5.5 % in Italy and Luxembourg to 26.9 % in Estonia (Eurostat Statistics Explained, 2017). There are several reasons why men and women might have on average different earnings. Among them are, working in different occupations with different wages, different attitudes towards degrees of flexibility on working hours and working schedule, differences in education and skill levels, etc.

The purpose of this study is to better understand the possible reasons behind gender wage disparities, focusing on the unique features of male and female human capital and their labour market returns. The empirical part of the paper relies on the PIAAC (The Programme for the International Assessment of Adult Competencies) database allowing to measure individual cognitive abilities in literacy, numeracy and problem solving in technology rich environment. The analysis is conducted based on full-time workers’ data. We implement number of methodological approaches including also non-parametric matching based decomposition towards identifying a role of human capital in wage disparities. Due to the substantial difference in skills across genders (Torben et al. 2015, Hanushek et al. 2015) we expect some cognitive abilities and their combinations to be exclusive for men while not always reached by women and vice versa. This proposition creates a foundation for studying the unique or gender specific human capital. We follow the assumption that men’s and women’s profiles cannot be directly compared, as particular characteristics are exclusive for certain gender.

By conducting empirical analysis, we focus on the European Nordic region countries, namely on Estonia and the neighbour Nordic countries Finland, Denmark, Norway and Sweden. Estonia is a small emerging economy that has implemented liberal social and economic policies during the recent decades. Within the European Union countries, the gender wage gap is the highest in Estonia. The country has numerous economic, political and cultural links with the Nordic countries where gender wage gap has always been remarkably lower.
(ca 15-18%). Nordic social democracies have done a great deal in eliminating inequality of opportunity due to income and wealth without paying a cost in terms of economic growth (Roemer and Trannoy, 2016, p. 1328). Thus, we believe that comparative analysis of labour market issues of this region can provide additional valuable information for development of policy measures to achieve better labour market outcome in future.

The rest of the paper is organized as follows. Section 2 gives a short overview of the theoretical framework and research methodology. Section 3 presents the main results of the analysis on skill disparities and wage returns, followed by the summary and discussion of key findings in Section 4.

2. THEORETICAL FRAMEWORK AND RESEARCH METHODOLOGY

Most mainstream economists’ studies that examine the gender wage gap rely on human capital theory. Additionally, several theories of discrimination as well theoretical approaches considering the role of various non-cognitive characteristics like risk aversion, competitiveness, gender identity etc. are implemented in literature by analysing gender wage gap (Neumark et al. 1996, Altonji and Blank 1999; Grove et al., 2011, Blau and Kahn, 2016). The implementation of human capital theory for analysing individual labour market returns and gender wage disparities remarkably widened with the well-known contributions of Mincer (1958) and Becker (1962, 1964) works.

Human capital theory forms a baseline for studies seeking explanations for differences in human capital formation and returns describing the relation between choices on investment into human capital and their effect on productivity and earnings. Gender wage gap studies are also tightly related to considerations on the division of labour within the family, pioneered by Becker (1981, 1985). An implication of division of work within the family often results in women staying partly or even fully away from the labour market. That is also considered as the reason why women accumulate less human capital in the form of labour market experience (Erosa et al. 2016). Although the explanatory power of human capital theory in the gender wage gap analysis somewhat declined over the recent years, the variables suggested by this theory are still relevant for empirical analysis. To what extent human capital theory can explain a gender wage gap also depends on the country specific characteristics, like level of economic development, institutional framework, labour market regulations, cultural background etc.

Assessment of human capital often relies on measuring education output like average years of schooling and formal degree completed; also on-job training and work experience are important factors of human capital accumulation, along with formal education. Additionally, estimates of individual cognitive skills and abilities are used to approximate a human capital in Mincer-type (Mincer 1958) wage equations (Heckman et al. 2006, Hanushek et al. 2010).
The data of International Adult Literacy Survey (IALS) conducted by the OECD (the Organization of Economic Co-Operation and Development) in the 1990s have been among the earlier data sources allowing assessment of individual skills in literacy, numeracy and problem solving. In this paper, we use data coming from the Survey of Adult Skills, collected within the OECD Programme for the International Assessment of Adult Competencies (PIAAC). Respondents of the survey were assessed in the domains of literacy, numeracy and problem solving in a technology rich environment (OECD 2012 and 2013).

Since we aim to conduct a comparative study of Estonia and four Nordic countries, the research is based on Estonian, Finnish, Danish, Norwegian and Swedish public use data files of the recent PIAAC survey. The country-specific data files include a random sample of individuals aged from 16 to 65 years; however, we focus our research on full-time employed respondents. Since the PIAAC survey was conducted as either a computer- or paper-based assessment, the measure of the problem-solving skill is accessible only for computer-based responses, namely: 68% of the total sample for Estonia, 82% for Finland and Denmark, 84% for Norway and 88% for Sweden. These data restrictions left us with a sample of 4,347 respondents for Estonia, 3,079 for Finland, 3,721 for Denmark, 2,843 for Norway and 2,486 for Sweden. Given that a variable of monthly earnings is available for all countries except Sweden, the latter will be omitted in the wage gap estimation.

We performed a non-parametric Ñopo-type (Ñopo, 2008) decomposition to get an insight into the gender wage gap issue in the cross-Nordic context. The functional form of decomposition is as follows:

\[
\Delta = \Delta_M + \Delta_x + \Delta_o + \Delta_F.
\] (1)

Thus, overall wage gap, denoted by \(\Delta\) is split into four components, namely:

- \(\Delta_M\) represents a part of the gap arising from a difference in characteristics of males with a male-female matched profile and those with a male-specific profile, thus comparing “out-of-common-support” and “in-common-support” males. A positive sign of the component indicated superior earnings of men with a male-specific profile relative to males with male-female matched characteristics;

- \(\Delta_x\) captures the fraction of the wage gap explained by the observable difference in male and female characteristics, hence solely estimated on the “in-common-support” sample of males and females;

- \(\Delta_o\) represents the share unexplained by observable characteristics and attributed to both difference in unobservable characteristics and discrimination, measured on the “in-common-support” sample similarly to the previous component;

\(^1\) For a detailed description of the derivation procedure and the functional form of wage gap components, see Ñopo (2008)
part of the wage gap resulting from a difference in “in-common-support” and “out-of-common-support” female characteristics. A positive sign of the component indicated superior earnings of women with a woman-specific profile relative to males with male-female matched characteristics.

Implemented matching procedure resamples females without replacement, matching them to a synthetic male with average characteristics of men from original sample, having similar profile to a chosen woman. This matching procedure does not rely on propensity scores, but performs matching on observable characteristics. The matching outcome eventually comprises both matched (“in-common-support”) and non-matched (“out-of-common-support”) men and women. The latter part of the sample is of key research interest, as it includes respondents possessing characteristics specific for their gender (gender uniques)

The baseline matching procedure controlled for age, immigrant status and skills in three domains. Choosing this set of characteristics allows emphasizing the gender difference in human capital attainments solely. Relying on the measures of cognitive abilities, we oppose men and women, extracting those for whom a counterpart with a similar set of skills was found in the opposite gender and those for whom there was no match. It allows to directly compare male and female capabilities in literacy numeracy and problem solving, as a key components of human capital. By controlling for age we ensure that age effect on accumulation of cognitive skills is accounted for.

To check the hypothesis that distributions of male and female characteristics do not fully overlap, we focus on “out-of-common-support” or non-matched (unique) respondents. We analyze their profiles and estimate wage regressions to quantify aggregate returns to male- and female-specific profiles and to separate components of gender-specific profiles. Namely, we estimate wage returns following Mincer-type OLS wage regressions:

\[
\log W_i = \alpha + \beta_1 U M_i + \gamma X_{i}^{'} + \epsilon_i \\
\log W_i = \alpha + \beta_1 M M_i + \gamma X_{i}^{'} + u_i, \tag{2}
\]

where \(W_i\) denotes monthly earnings, \(U M_i\) and \(M M_i\) are dummy variables taking values 1 if respondent is respectively “out-of-common-support” (non-matched, unique) or “in-common-support” (matched) male, \(X_{i}^{'}\) is a vector of other controlled included in regression with respective estimated coefficients \(\gamma^{'}\), while \(\epsilon_i\) and \(u_i\) are residual terms.

The coefficients of primary importance are \(U M\) and \(M M\), as they capture wage return to male-specific (unique) and male-female matched human capital for men, relative to “out-of-common-support” and “in-common-support” women respectively. Additionally, we also addressed the question of individual

\(^{2}\) Terms “male-” and “female-specific”, “exclusive” and “unique” are used interchangeably in the paper.
contributions of gender-specific human capital components on earnings of males with male-specific profile and females with female-specific characteristics. This approach allows us to see whether returns to gender-specific characteristics are heterogeneous and which of these are associated with highest earnings on the national labour markets. These equations are estimated in samples of “out-of-common-support” and “in-common-support” males and females in Estonia, Finland, Denmark and Norway.

3. EMPIRICAL RESULTS

PIAAC database provide valuable information for analysing gender human capital in sense of education and in literacy, numeracy and problem solving skills in a technology rich environment. Every individual result in three skill domains was scaled from 0 to 500 points. The initial continuous skill variables were recoded to interval variables, grouping respondents according to their test achievements in the following categories: below 176, 176-226, 227-276, 277-326, 327-376, above 376 points. To avoid remarkable burden for technical calculations, we similarly to some other authors (e.g. Hanushek et al., 2015; Anspal, 2015), use the first plausible value to proxy individual cognitive abilities in literacy, numeracy and problem solving domains. We also check for the stability of the results using other ten assessed values of the skill domains and recognised that the results are robust. These additional calculation and results are not presented in the paper.

Following descriptive evidence, we recognised that the skills’ patterns for men and women are rather similar in the Nordic countries and in Estonia (Figure 1). As a rule, skills of men are higher allowing to assume that labour markets provide more challenges for skills’ development to men comparing to women. The highest scores in all three skills domains for both males and females were observed in Finland. The same evidence was found by Torben et al. (2015) in their PIAAC-based report on adult skills in the Nordic region. The largest gender gaps in skills are also detected for Finland (12 and 5 points in favour of men in numeracy and problem solving respectively).

The gender pattern in education is also similar in all Nordic countries and Estonia: women are as a rule better educated comparing to men. The share of the women with higher education is bigger in all analysed countries. Despite similar or even higher education of Estonian workers, their cognitive skills are as a rule lower than in the neighbour Nordic countries. Thus, in spite of high education, people of Estonia probable did not have sufficient challenges for development their skills during their working life. Additional explanation to this situation can also be high level of international mobility of the Estonian people. Lot of well skilled and more active people are working in the neighbour Nordic countries.
We further focus on the analysis of gender human capital comparing the assessment results across matched and non-matched (unique) samples. The key variables of interest when evaluating gender-specific human capital are measures of cognitive abilities and educational attainments. The descriptive characteristics of both matched and non-matched (unique) samples are presented in the Figure 2. We found that there is the common pattern for all countries: matched males and females are much less different from each other with respect to characteristics controlled for in the matching procedure (age, immigrant status and cognitive skills), compared to non-matched.

As it is shown in Figure 2, there is a substantial difference in educational and skill profiles of males and females having no counterparts in the opposite gender and those with counterparts found (e.g. non-matched or unique individuals). The results presented in Figure 2 confirm the common labour pattern of all analysed countries indicating that women are better educated but as a rule men have better cognitive abilities in both assessed samples, matched and non-matched. This evidence is particularly visible in the case of numeracy abilities in non-matched sample.

Figure 1. Educational profiles and average skills of males and females across Estonia and Nordic countries

*Source: Authors’ calculations based on PIAAC data*
Again, the situation is somewhat different in Estonia in comparison with other Nordic region countries. If analysing more precisely Estonian samples and considering Estonian men, those who have females matched in a set of controlled characteristics are holding a marginally better educational degree relative to those who are non-matched. Namely, the share of men those with the lowest degree in the matched sample is 11.9%, while in non-matched it is 18.2%, although the share of the most highly educated is 34.6% and 33%, respectively (thus, almost the same). The extensive difference is revealed when comparing matched and non-matched educational profiles of males relative to respective females. Surprisingly, gaps in education of non-matched men and women are drastically larger: among unique (non-matched) females, 59.5% hold the highest degree, yielding 26.5 p.p. statistically significant difference with non-matched men, while among matched women, 44.9% hold a complete university education, implying only a 10.3 p.p. statistically significant differential from matched men. Thus, females non-comparable to males in a set of human capital characteristics on average have a remarkably better formal education profile in Estonia.

We can summarise, that if limiting the analysis with formal education as a key measure of human capital, previously discussed evidence would suggest that Estonian females more often reach high human capital attainments than males. In the case of Nordic countries, this pattern is not so clearly visible. However, the results of descriptive analysis (see also Figures 1 and 2) would not recognize the fact that despite a positive correlation of cognitive abilities and educational attainments, higher education does not inevitably result in better
cognitive skills and vice versa. Next we rely on PIAAC estimates of literacy, numeracy and problem-solving capacities to get a more robust proxy of human capital endowments.

We analyse overall wage returns for male-specific and male-female matched human capital by estimating the ordinary OLS wage regression separately in both samples across the Nordic countries and Estonia. Table 1 reports wage coefficients of non-matched and matched males, along with returns for education and four domains of skills in the both samples. Figure 3 reports wage coefficients with 99% confidence intervals of non-matched and matched males, along with returns to education and three domains of skills in respective samples.

Table 1

Wage regression coefficients of male-specific and male-female matched human capital in Nordic countries and Estonia

<table>
<thead>
<tr>
<th></th>
<th>Estonia</th>
<th>Finland</th>
<th>Denmark</th>
<th>Norway</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-matched sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample size</td>
<td>1292</td>
<td>1099</td>
<td>1237</td>
<td>1401</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.319</td>
<td>0.411</td>
<td>0.372</td>
<td>0.461</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(0.037</strong>*</td>
<td>(0.021***</td>
<td>(0.022***</td>
<td>(0.026***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Matched sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample size</td>
<td>1112</td>
<td>1069</td>
<td>1605</td>
<td>1022</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.325</td>
<td>0.468</td>
<td>0.360</td>
<td>0.366</td>
</tr>
<tr>
<td><em>(0.034</em>**</td>
<td>(0.020***</td>
<td>(0.018***</td>
<td>(0.018***</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ calculations based on PIAAC data

Notes: Dependent variable is log monthly earnings. Standard errors are estimated using Jackknife replication methodology. Coefficients and standard errors are reported. The model additionally controls for age, age squared, immigrant status, formal education, cognitive skills in literacy, numeracy, problem solving and occupation.

Thus, controlling for several characteristics, including age, immigrant status, formal education, skills in three domains and occupation, male-unique human capital is still attributed to higher wage gain than male-female matched, however, differences are not statistically significant (see also Figure 3). Despite the difference in absolute terms, the difference in wage effects is rather small in both samples, matched and non-matched. That is in line with our previous assumption of a superior wage effect for the male-specific profile relative to matched.
The results presented in table 1 indicate again, that gender wage gap is remarkable higher in Estonia in comparison with Nordic countries. Following the regression results (table 1), males possessing the male-specific human capital profile earn on average 41.6% more than females possessing female-specific characteristics, whereas male-female matched human capital is associated with a 40.1% wage gain for males relative to their peer females with a similar male-female matched profile.

Thus, if using additionally to education also PIAAC estimates of literacy, numeracy and problem-solving capacities for the assessment of human capital, we can confirm that human capital patterns across genders are in general similar in the Nordic countries and Estonia. But there are also some noticeable differences in Estonia comparing Nordic countries. Estonian people have good education but their cognitive abilities are less developed and that is particularly evident for women. Also, gender wage gap of full time working people is remarkable higher in Estonia after controlling for several socio-demographic characteristics and for education and cognitive abilities. Consequently, there are other explanations for huge gender wage gap in Estonia additionally to the traditional human capital endowments, and those need future investigations. These explanations can also be related to the different political and economic background of these countries in the Nordic part of Europe.
4. CONCLUSIONS AND DISCUSSIONS

This paper addressed the issue of the gender wage gap as an essential aspect in studying labour market outcome of developed as well emerging economies. While the classical human capital theory focuses on the increasing comparability of male and female characteristics, we pursue an assumption that characteristics specific for either men or women remain. Gender-specific human capital may be one of explanatory factors besides of other determinants in the gender wage gap analysis. Relying on the PIAAC data, we built up a cross-Nordic comparison of gender variation in human capital profiles, accounting for both formal education and cognitive skills as important components of human capital. Introducing a concept of gender-unique human capital within the wage gap framework, we proved the proposition that men’s and women’s profiles cannot be directly compared, as particular characteristics are mostly attained by certain gender. We applied the matching technique to disentangle initial country-specific samples into sub-samples with respect to gender and the possession of a male-/female-specific and male-female matched profiles. Additionally, we estimated wage regressions to quantify aggregate returns to male- and female-specific profiles and to separate components of gender-specific profiles.

Research results show that human capital patterns across genders are in general similar in the Nordic countries’ and Estonia’s labour markets. The share of women with higher education is bigger in comparison with men in all analysed countries, at least among the full-time workers. At the same time, measured cognitive abilities of men are as a rule higher comparing to women. Male-specific characteristics, rarely reached by females, are embodied in superior numeracy and problem solving abilities (individual and combined), albeit low formal education. The highest scores in all three skills domains (literacy, numeracy and problem solving) for both genders were observed in Finland. The results also show that skills are valued at a labour market often more than formal education, hence men’s better numeracy and problem solving abilities help them to attain higher wage, despite lower formal education. Low association between formal degree and actual skills in the case of men may be enforced by other factors of the human capital accumulation process, including on-job training and real work experience, which are known to be strong driving forces of human capital/skills accumulation. However, this situation may be exploited by men to a higher extent than by women, due to labour supply decisions and different gender roles. Thus, further in-depth investigations with a special focus on the role of formal education and skills in the human capital accumulation of males and females are necessary. However, considering substantial gender differences in labour supply decisions, along with other factors by gender roles, it appears quite natural that on-job human capital accumulation is more important for men.

In some aspects, the situation in the Estonian labour market is different comparing to the Nordic countries. Despite similar average level of education average cognitive skills of Estonian workers are lower comparing to neighbour Nordic countries’ workers. This indicates that Estonian people might not have sufficient challenges and possibilities for the development of skills during
their working life. Presumably, some of better skilled and active people are also working outside Estonia, often in the neighbour Nordic countries. The study also confirmed that gender wage gap in Estonia is remarkably higher in comparison to Nordic neighbours, and that conclusion is also valid in the case of gender-specific and matched samples. The specific result for Estonia provides an evidence that formal education is valued at Estonian labor market less than actual skills – men’s better numeracy and problem solving abilities help them to attain higher wage, despite lower formal education.

Nordic social democracies have implemented socio-economic policies diminishing inequality and giving equal opportunities and consequently labour also market returns can be more equal. In Estonia, as in small emerging country liberal socio-economic policies have been implemented during the recent decades. Estonia succeeded rather quickly to restructure its economy and to achieve good economic growth. At the same time, inequality increased and people did not always have equal opportunities for their individual development and involvement in the socio-economic processes. In the condition of tense demographic situation and luck of good labour resources, current situation may create risks for long-run and sustainable economic growth.

In conclusion, even when controlling for “non-comparability” of male and female human capital profiles and accounting for skills as important proxies for actual human capital – significant share of pay gap remains unexplained indicating on the necessity to look for explanations of gender wage gap beyond labour market and human capital theories. Future policy implications aiming to support development and efficient use of existing human potential, should consider multiple reasoning of diminishing gender wage gap, e.g. welfare system, norms and several non-cognitive factors. They should also contain special measures for development of life-long training possibilities and improvement of family benefit systems.

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MARITIME DOMAIN AS PUBLIC PROPERTY, THE RESULTS OF STRATEGIC PLANNING OF NATIONAL ECONOMY DEVELOPMENT, OR?

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Abstract
The management of the macroeconomic system and its management of the development of a transition economy should be oriented towards the development of a market-oriented economy. In this way, resources constitute an economic basis which needs to be valorised, protected and managed in an appropriate and sustainable manner. Of course, the systems and solutions of developed economies in Europe were reconciling the interests of all of the local population and all stakeholders. Strategic resource and legal regulation frameworks adapted to them, with an adequate vertical management system in which training and central government budgets play a central role, modelling a viable and efficient management system. Analysing the maritime domain, one of the fundamental resources of the Republic of Croatia is the issue of how to manage it. Frequent changes to legal regulations should be the result of a dynamic sustained and efficient model of maritime governance, but the question is whether Croatia has a sustainable and efficient management model. What management does this macro system do? What are the goals and how is the planning system developed? This is the issue the subject of research which will deal with this paper; and hypothesis should be that the reform of the “Maritime Domain and Seaports Law” result of deliberate strategic policy of the Republic of Croatia, and this policy that permeates and connects all stakeholders this development systems and models.

Keywords: maritime domain, a national model of management of the maritime domain, management of macroeconomic system
1. **INTRODUCTION**

In order for an industry to be able to achieve development, in addition to its financial and human resources, it is required to dispose of its material resources as well. Material resources are always limited, and they need to be preserved, ecologically sustainable, renewed, exploited until reaching the resource utilisation level so as to save them for future generations. This fact is of vital importance for each country and its economy, presenting the essential requirement for the management of resources of national importance. In order for this to be achieved, each country with its highest social and political institutions is required to take inventory of its resources of national importance and to legally regulate them in order to be able to develop a model of their exploitation in this regard.

When it comes to the maritime domain, it should be noted that it represents the resources of the highest level of importance for each country which owns them. It represents the potential, the possibility of coming into contact with the entire world, the fundamental resources for the majority of economic activities in the field of maritime affairs, shipbuilding, tourism and its accompanying services. With regard to this fact as the subject matter of this research, as well as with regard to specific proposals for the changes to be made to the existing system of the use of the maritime domain, the maritime domain and its management system have been established. The research objective is to assess the factors indicating the sustainable management system, as well as the factors which could jeopardise its sustainability. The research hypothesis states that the reform of the Law on Maritime Domain and Seaports is the result of a deliberate strategic policy of the Republic of Croatia, affecting and connecting all the stakeholders of that development system and model. In other words, the question arises as to the effectiveness of the transition of the maritime domain from the status of common good to the one of public property. To this end, for the purposes of this study were used methods of analysis and synthesis in desk research study of the essence of the legal terms and laws, and by which we entered the depth and consequences of changes in the maritime domain, as a social good, in the public domain. For a broader view of the subject matter, a comparative analysis was used to compare this problem with the major Mediterranean countries in relation to Croatia.

2. **THE MARITIME DOMAIN AND ITS ECONOMIC SIGNIFICANCE**

The Maritime Domain is one of the oldest legal institutions dating back to the Roman law, and in the Republic of Croatia its concept is defined in Article 3, paragraph 2 of the Law on Maritime Domain and Seaports (cro. Zakon o pomorskom dobru i morskim lukama - ZPDM): "The Maritime Domain is constituted by the internal sea waters and the territorial sea, their bed and subsoil and part of the land which is by its nature intended for public maritime use or has been declared as such,
and everything connected with this part of the land on the surface or below it”.

Therefore, the Maritime Domain is a common good (lat. res extra commercium) under the constitutional protection (Art. 52 of the Constitution of the Republic of Croatia); it is not owned by any legal entity nor by the Republic of Croatia that manages it as a governing authority (in a direct or an indirect manner) with the care of a good manager and is responsible for it (Art. 3, paragraph 3 of the Law on Ownership and Other Property Rights – cro. Zakon o vlasnštvu i drugim stvarnim pravima - ZVDSP); comprising the following: 1) the land (coast); 2) the sea, and 3) the underwater world. The municipalities and towns take care of the regular management of the maritime domain, while the counties take care of its extraordinary management (Art. 11 of the Law on Maritime Domain and Seaports - cro. Zakon o pomorskom dobru i morskim lukama - ZPDML).

There are three different uses of the maritime domain: the general, special and commercial use (Art. 6 of the Law on Maritime Domain and Seaports - ZPDML). The general use is related to its legal status. The special use of the maritime domain regards any use which is not considered to be part of a general or a commercial use of the maritime domain. The special use of the maritime domain comprises the construction within the maritime domain which is not performed for profit-making purposes (such as the infrastructure). The commercial use of the maritime domain regards the use of the maritime domain for the purposes of pursuing economic activities, with or without the use of the existing buildings and other structures on the maritime domain, and with or without the construction of new buildings and other structures within the maritime domain.

As for the special or commercial use of the maritime domain, granting the concession, i.e. the concession approval is required, which is the only legal means to use a part of the maritime domain for commercial purposes. The concession regards the right to exclude a part of the maritime domain completely or in part from general use and is made available to physical and legal persons for special or commercial use, in accordance with spatial plans. The concession approval is an act based on which the maritime domain is made available to physical and/or legal persons for their use for the purpose of pursuing economic activities not excluding or limiting the general use of the maritime domain (Art. 2 of the Law on Maritime Domain and Seaports - ZPDML). The concession for the commercial use of the maritime domain is provided through a public bidding. The concession for the special use of the maritime domain is granted upon request (Art. 7 of the Law on Maritime Domain and Seaports - ZPDML).

The economic potential of the maritime domain for the Republic of Croatia is based on the three following elements: 1) the maritime domain is the most attractive part of the national territory; 2) the maritime domain also represents the most valuable natural resources, since the total length of the Croatian coastline amounts to 6.278 km, with the coastline including the 1244 islands, islets, reefs and cliffs; 3) out of the total area of the Republic of
Croatia, comprising 87.661 km², the internal sea water and the territorial sea (the maritime domain) extend along an area of 31.479 km² (the internal sea water comprising an area of 12.498 km² and the territorial sea an area of 18.981 km). The question arises as to the way in which such economic resources are to be rationally managed.

First of all, it should be noted that the maritime domain requires an integrated and comprehensive management, since it reconciles divergent interests, such as the commercial, and public interests, as well as the interests of its protection. The fundamental reason for the surge of interest in the maritime domain by the macroeconomic policy holders stems primarily from the strategic importance all the activities performed on it or in relation with it have for the Croatian economy, which also affect the GDP. This, first of all, implies the new recruitment policy, private investment in the further development of activates related to the maritime domain, and the compliance with environmental regulations. Economic interests, at the microeconomic level, are reconciled by the concession agreement between the concession provider (cro. **koncedent**) and the concession holder (cro. **koncesionar**). Upon determining the concession deadline, the purpose, scope and amount of investment needed are considered, as well as the overall economic effects achieved through concession, taking into account the interest of the investor to obtain a return on the capital invested into the maritime domain within a reasonable period of time. The agreed amount of the concession fee consists of a fixed and a variable part, with the variable part depending on the revenues generated from the activity performed within the maritime domain. For example, the concessions comprising the construction of new buildings of major importance for the Republic of Croatia, which require heavy investment, and the economic effects of which cannot be achieved within the next 50 years are granted by the Croatian Government for the period of over 50 years with the consent of the Croatian Parliament.

However, it is legally questionable whether the granting of the concession for such a long period of time actually presents a circumvention of regulations, since it **de facto** represents a divestment of the property given in concession?

### 3. MACRO-MANAGEMENT AND STRATEGIC PLANNING

From a theoretical and practical perspective, there should be a distinction between management and governance. There are numerous definitions of management, but Robert Kreitner’s definition is probably the most appropriate for a simple interpretation of management, stating the following: **management is the process of working with and through others to achieve organizational objectives in a changing environment. Central to this process is the effective and efficient use of limited resources.** Therefore, the very definition stresses the importance of resources, which means that they are to be managed sustainably, establishing governance at all
the management levels for this purpose, from a micro level to a macro level. Such a communication is to be bidirectional, both as a top-down and a bottom-up communication, the functioning of which is controlled by the organisation’s management through various management functions. As Rick Griffin suggests correctly, there are four management functions, with the first one and the last one standing out among them: (1) planning and decision making, (2) organising, (3) leading, and (4) controlling.

Figure 1 Griffin’s P-O-L-C model of management organization through functions


In accordance with the European model of management, or the German School of Management, to be more precise, planning and controlling are central functions, and are also closely linked. The degree and form of their correlation are directly dependant on the success rate of the management as a whole. The European Management Model promotes the two aforementioned functions, constituting a separate system which needs to be adjusted to each management in terms of the level at which it is performed, such as a macro or a micro level.
What Griffin states are also to be emphasised, which is the following: “planning and decision making”, which particularly indicates the establishing of a goal. In other words, the plan and the goal form a unity, and one does not make any sense without the other one. Accordingly, the question arises as to what is a plan. There are many definitions of planning, but all the definitions may be reduced to the following statement: the plan is the way towards a goal, and the goal cannot be reached, presenting the conditio sine qua non of the management. However, while the goal is the essential and invariable prerequisite, the plan is a variable one, meaning that it can be changed in order to find the fastest and the easiest path towards the goal. Therefore, in order for the planning to make sense, it is necessary to set the goal which stems from the mission, i.e. from the following set of questions:

1. Diagnosis – Where are we today?
2. Plans and goals (objectives) – Where do we want to arrive?
3. The implementation of objectives – How are we going to arrive there?
4. Evaluation – How will we know when we will arrive there?

In order to establish realistically the four mentioned strategic areas, all the entities in the chain pertaining to the field of planning need to participate, achieving commitment at each step. In so doing, they need to be guided by the fundamental strategic formulation consisting of the system which includes all the participants in the top down model, providing answers to the crucial question as to what kind of plan, in what way and when is used to achieve the goals and objectives. This includes the strategies, tactics and action plans of the participants, on the basis of which the strategic plan of a higher level is developed.

2 Ibid, p. 263
3 Ibid, p. 269
It is evident that Croatia lacks all of the aforementioned, and since the strategic planning is performed at a higher level, its functionality is minor.

The question arises as to how to achieve efficiency and functionality of the strategic planning at all the levels, as the planning starts at a macro level, and this is exactly where the goal is missing, that is Drucker’s management by objectives. The answer lies in the motivation and knowledge. In order to achieve motivation within the system of the strategic controlling planning, all the management steps are to be carried out, which passes through the system of commitment. Therefore, it is to be done in the following order: reconciliation, the use of the professional practice, confrontation, and then commitment and implementation in order to set the goal and devise a realistic plan with the accompanying documentation, and in this case it is the regulation of the management of the maritime domain as a valuable national resource.

4. THE MARITIME DOMAIN FROM THE PERSPECTIVE OF THE DRAFT LAW, THE LEGAL ASPECT

The Government of the Republic of Croatia has partially fulfilled its function and has finally adopted the Strategy of the Maritime Development and Integrated Maritime Policy of the Republic of Croatia for the time period from 2014 to 2020 (the Maritime Strategy). The said strategy contains the following strategic goals: 1.) sustainable development and the competitiveness of the maritime industry in the following areas: a) maritime shipping and maritime transport services, b) port infrastructure and port services, c) education, and d) living and working conditions of seamen. Furthermore, as evident in the Section 2) a safe and ecologically sustainable maritime transport, maritime infrastructure and maritime space of the Republic of Croatia.

The Maritime Strategy stresses the following: a) the value of capital investment in the construction and modernisation of infrastructure in the ports of particular (international) economic interest for the Republic of Croatia, and b) the value of the co-funding of the construction of infrastructure in the ports of importance for the County and in fishing ports, amounting to more than 600 million euro in total. It is also emphasised, and this is particularly important, that its goal is the development of port specialisation which “does not prevent economic entities that have already acquired or are to acquire a valid concession for the

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4 The Ministry of Maritime Affairs, Transport and Infrastructure. Available at: http://www.mppi.hr
5 The Republic of Croatia owns 409 ports open to public transport, among which there are 95 ports with at least one shipping line. The six main ports (Rijeka, Zadar, Šibenik, Split, Ploče and Dubrovnik), are located along the mainland coast, and all the ports have been declared ports of special (international) economic interest for the Republic of Croatia. Today, in Croatian ports approx. 19 million tonnes of cargo are transhipped each year, with more than 12 million passengers transported (in 2012). In Croatian ports, the majority of cargo traffic is generated in the ports of Rijeka, Ploče, and lately in the Port of Split as well, accounting for almost 90% of the total cargo traffic of the Croatian ports of a particular economic interest, thus being the main cargo ports of the Republic of Croatia. On the other hand, the majority of the passenger traffic is generated through the ports of Split and Zadar, while the main port in which the cruise ship traffic is generated is the Port of Dubrovnik.
commercial use of the port from developing the port in some other form in the future. However, the specialisation of such a port will be primarily the obligation of the concession holder, not the port authorities nor is to be charged to the State Budget of the Republic of Croatia.” The question remains as to the monitoring of the development and specialisation, which should be the result of the State supervision model which has not been developed so far. In other words, the mere adoption of strategies, as well as of laws, has no impact if there are no executive and supervisory functions established by the State itself.

As part of the current practice, all the investment in the ports of a particular (international) economic interest for the Republic of Croatia has been implemented exclusively by the port authorities, which has proven insufficient for sustainable development and competitiveness. The introduction of private investors into this sector of the economy will be possible only when we change the existing institutional (legislation) framework pertaining to the Maritime Law, and when the economic model of implementation and management is developed. In other words, the macro system is to be shaped in a way that adequate control subsystems, without which the risk of introducing private investors would be too big, are incorporated into it. The risk would reach the level of the risk unacceptability, not only for the State administration and economy, but for the investor as well.

Namely, pursuant to Art. 5 of the Law on Maritime Domain and Seaports (cro. abbrev. ZPDML) “the buildings and other facilities built within the maritime domain permanently belonging to the maritime domain are considered affiliated to the maritime domain”. In addition to this, it is stated that “ownership or other rights in rem cannot be acquired within the maritime domain on any ground.” Such a rigid provision is to be replaced by the provision stating that the concession holder can acquire ownership on the facility built, the ownership of which lasts throughout the duration of the concession. This is also in accordance with Article 3, par. 4 of the Law on the Right of Ownership and Other Real Rights (cro. abbrev. ZVDSP), according to which “the buildings and other facilities built within the maritime domain based on the concession are not part of common property from the legal point of view, and therefore they form a separate property during the concession period.” It is expected that the new law on concessions will establish a balance between various, often conflicting interests, and that the new Maritime Domain and Seaports Act will comply with its provisions at last.

The Article 34 of the Maritime Domain and Seaports Act (ZPDML) introduces the possibility of pledging the concession as a right. The lien gives the lien creditor the right to benefit from the concession, provided that he meets the requirements of a concession holder, or he can cede the right to concession to third parties meeting the requirements of concession holders, provided they obtain the consent of the concession provider. This form of insurance has not met the expectations in practice, because it is not reliable enough for the bank and its operations unlike, for example, the existence of pledge on the property of the mortgage holder as traditional collateral. For this reason, the introduction
of the possibility of acquiring ownership rights of the superstructure facilities within the maritime domain is an important prerequisite for the increased interest of financial institutions in the investment into the development of the facilities within the maritime domain in the Republic of Croatia. Still though, it should be stressed once more that the increased interest of the investors can be realistically expected in case there is a model which may integrate the executive and the supervisory function at the macro level, thus making the investment risk more acceptable. This model is part of the system of all the developed European economies, and is not new to those countries, except for the economies in transition that are just starting to be market-oriented.

Another important question which arises is related to the changes in the legal status of the maritime domain pursuant to the provisions of the Law on Maritime Domain and Seaports. According to the theoretical analyses carried out in the Republic of Croatia, there is the opinion that the legal status of the maritime domain as general good needs to be replaced with a more flexible status of the public good in general use which is the unalienable property of the Republic of Croatia. Some authors claim that “it is high time” the maritime domain was approached in some other way, so as not to be considered general good anymore, but to become public property.” Their hypothesis is based on the comparative legislation (Italy, France, Spain, the Netherlands and Portugal), and they conclude that Croatia is “alone in determining the maritime domain as general good in its non-property system.” Other authors, who can be considered traditionalists, believe that the new law “does not challenge our centuries-old tradition of the maritime domain as general good which is of interest for the Republic of Croatia.”

The authors of this paper add new arguments in support of the changes in the existing legislation. First of all, the status of the maritime domain, as a general good from the original Law on Maritime Domain and Seaports (ZPDML), has already been harmed, which completely fell into oblivion in 2006, when, for the benefit of new strategic investment in port superstructures, the transhipment equipment was shut down (individual devices, machines, process installations, cranes and other equipment which formed an integral part of the plant or were independently incorporated into the building and used in the technological process in the port). The cranes have become the property of the Republic of Croatia, which is also very important. Secondly, the State ownership of the port infrastructure has proven to be effective in case of the Port of Koper, in a way that the infrastructure owned by the Republic of Slovenia is entered into the equity of company Luka Koper d.d. from Koper, which is today among the largest cargo ports in Europe. Thirdly, the ownership scheme of, for example, the public water property is defined in Art. 11 of the Water Act, in the following way: The public water property is a public property in general

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6 For example, Nakić, Jakob: “The Maritime Domain – a common good or a public property”, University Authors’ Collection of the Faculty of Law in Split, vol.53, 3/2016, p.797-832
7 Ibid.
8 For example, Kundih, Branko: The Maritime Domain – a specialised website for the maritime domain and seaports. Available at: http://www.pomorskodobro.com
9 Official Gazette nr.153/09.
use, i.e. in public use pursuant to Art. 14, par. 2 of this Law, and is owned by the Republic of Croatia. (par. 4); The public water property is an alienable (par. 5); On the public water property, third parties cannot acquire the ownership right or any other real right through maturity or in any other way, except the right of easement over property and the construction right as regulated by Art. 16 of this Law (par. 6); Legal transactions concluded contrary to par. 6 of this Article shall be void (par. 7); The individual unlawfully using the public water property shall not be able to obtain the protection of property (par. 8).

The authors believe that the section of the Water Act concerning the ownership scheme of the public water property may present a good model-act for the new Law on Maritime Domain and Seaports.

5. THE MARITIME DOMAIN FROM THE PERSPECTIVE OF THE DRAFT LAW, THE STRATEGIC ECONOMIC ASPECT

The sea and the accompanying maritime services have always acted as a generator of economic development worldwide. Coastal states, such as the Netherlands of the 17th century, as well as England in subsequent centuries, based their prosperity on a powerful maritime transport and sea trade. To this day, approximately 80% of the global trade takes place on the sea by volume, and some 70% by value. This share in the global trade is even bigger with the most developed countries. The passenger transport, and cargo transport by sea in particular is the most competitive industry in which the shipping companies from all over the world participate with no restrictions.

The sea and the seashore which, by its nature or purpose, regards the use of the sea or is used for other purposes related to the use of the sea (as a functional unit), represent the maritime domain, accounting for more than a third of the State territory of the Republic of Croatia. Unfortunately, our comparative advantage is still just the comparative advantage which has not been implemented in terms of resources. On the other hand, the Republic of Slovenia, with its coastline which is 46 km long, has recognised the Resolution on the Slovenia’s Maritime Navigation (1991) in the development of the Koper cargo port, and a few nautical tourism ports, has achieved its strategic goal.  

A part of the strategy is the Maritime Law (2001) as well, according to which the port infrastructure is owned by the State or the local community, and the management of the infrastructure can be left to the port authorities. Another part of the strategy is also the Water Act (2002), which declares the sea and the sea land (the bottom of the inland seawater and the territorial sea to the external borders of the coastline) as the maritime public property, with the sea land being

owned by the State.\textsuperscript{12}

The future of the maritime domain of the Republic of Croatia is to be built on a clearly set goal which actually supports the strategic plan of its development, i.e. of the maritime domain as the fundamental resource of national interest. The said strategy does not have the necessary attributions because the development of the maritime domain as part of it has been established through the port system, making it only one among several of its components. The strategy of development of the maritime domain should be a separate act based upon scientific knowledge and experience (the SWOT analysis is a common, though not the most significant strategy tool), supported by the control and implementation model. The strategy should be based on the solved accumulated issues on the transition from the privatisation and transformation of the social and private capital. Furthermore, the legal status of the maritime domain, i.e. the comparative advantages of the maritime domain under the sovereignty of the Republic of Croatia, in relation to other countries, must be focused on the competitiveness of the ports with respect to the world. Such competitiveness can be achieved through their specialisation, an adequate concession model, decentralisation of the governance of the maritime domain based on a powerful local government the main role of which is the sustainability of the economic system. The key question is the following: Is the State able to make changes? In other words, how is the strategic management to permanently determine the goal of the development of our most valuable asset in these times of transition? Economic policy holders have mostly reached contradictory decisions so far, making the already complex issue of the maritime domain even more complex. The starting point is the sovereign right of the Republic of Croatia to decide independently upon its territory.

Furthermore, the strategy is to set a target and develop a plan as to the expected revenues of the budget for the utilisation of the maritime domain for commercial purposes. The concession fee consists of the following: (1) one third is paid to the State budget; (2) the other third to the counties; (3) and the remaining one to the municipality or town. The funds received through the fees the boat and yacht owners registered with the boat register or yacht register must pay for the use of the maritime domain are allocated to the county budget, and the funds received as an indemnification of damage caused by the pollution of the maritime domain are allocated to the State budget. The concession approval fee is allocated to the town/municipality budget (Art.13 of the Law on Maritime Domain and Seaports - ZPDMG).

From the Report on the implemented concession policy for 2014 and 2015 by the Ministry of Finance of the Republic of Croatia, it is evident that it slightly benefited the budget in principle. Namely, the total revenues from all the concessions in 2015 amounted to 1.544,6 mln. kunas. The State budget revenues as joint revenues of the State, county and the town/municipality from the maritime domain concession fees amounted to 31,6 mln. kunas; revenues

\textsuperscript{12} Bolanča, Dragan: “The Legal Status of Seaports as the Maritime Domain of the Republic of Croatia”, University of Split, Faculty of Law, 2003, p.286
of the counties as part of joint revenues amounted to 31,566,550.58 kunas; revenues of the towns/municipalities as part of joint revenues amounted to 31,566,676.18 kunas.\textsuperscript{13}

Therefore, the overall revenues generated by the maritime domain utilisation fee in 2015 amounted to approx. 96 mln. kunas, based on the 861 concession agreements, which is considered insufficient with regards to the economic potential of the maritime domain. Therefore, we should seek the control by the public authorities of the management and the exploitation of the maritime domain (for example, to bring the action by the Republic of Croatia against individuals who use the maritime domain without authorisation, and thus acquire undue economic benefit).

Both the European and international literature provides research on the port system management and its development. The World Bank proves that the port functionality is based on the successful management that manages all the activities in the port area. In so doing, all the economic activities in the ports are taken into account, capital investment in the ports is planned, the environmental protection system is improved, marketing activities of the ports are promoted and improved etc. Most port managers believe that the only way to improvement is through the top quality operation of state-owned (public-owned) ports, through the process of privatisation, i.e. through the introduction of the private sector into the area which was previously designed exclusively for the State (public) sector.\textsuperscript{14}

In the Republic of Croatia, the term “privatisation” has had a negative connotation for years. The privatisation was based on the stock, share, asset and right selling activities, the holder of which is the State, according to the Law on Privatisation. The privatisation regards primarily the stocks and shares acquired by the Croatian Privatisation Fund pursuant to the Law on the transformation of corporations.

The potential privatisation of the maritime domain should not be considered in the same way. Namely, the acquiring of ownership of the facility built within the maritime domain, based on the concession, does not necessarily mean the selling out of the most valuable State asset. The purpose and goal of the acquisition of ownership of the facility (not the land) is to promote investment in the development of seafaring by private investors. Public interest is sufficiently protected if the concession agreements contain the provisions that prevent any kind of misuse by the concession holder, if there is a high-quality system of State supervision and implementation. Such provisions exist in the current Law on Maritime Domain and Seaports – ZPDML, stating the following: the utilisation of a facility contrary to its purpose shall be the reason for the revocation of the concession (Art.30), and the concession shall terminate with its revocation by the concession provider (Art.31). Upon the termination of the concession, the ownership of the facility shall terminate as well. If the maritime domain is

\textsuperscript{13} The Ministry of Finance of the Republic of Croatia. Available at: http://www.mfin.hr
legally deemed as public property in general use, the facility within it becomes the ownership of the Republic of Croatia. As so far, the concession provider will perform the supervisory function for the new legal scheme of the facilities built within the maritime domain as well. This function is yet to be established because for the time being it exists only in theory. With mere laws and strategies, with no macroeconomic system of supervision and development support, the maritime domain as the fundamental national asset is going to be exposed to excessive risk that might jeopardise its sustainability.

6. CONCLUSION

The issue of the maritime domain management is a current issue of the Croatian economy, though not the only one. The system of solving economic problems in Croatia is not developed yet, and is developing according to the trial-and-error principle. Its development is based on experience and the former Communist Yugoslav State system, in which the development strategies of specific industries were part of the vertical political system of commands. It must be admitted that the system operated well, it was established on the planning, but it was not market-oriented, which led to its economic fall in the long run, which occurred ultimately. Croatian economy adopted the crucial economic act immediately after the formation of the independent Republic of Croatia, the Corporations Act, which directed Croatian economy towards the capitalist system of thinking and economic activity. The market has become a training ground for economic and political confrontation. However, the inherited system of strategies as the fundamental document of the development has not been abandoned. Numerous strategies and strategic documents have been adopted, but Croatian economy was not developing; on the contrary, it took a step back. The question remains as to what is to be done in order to bring about the development of the Croatian economy, and the answer to this question should have been provided by theoreticians and the profession. A gap has been created between a deep economic and legal ignorance and disorientation, and the trial-and-error approach was adopted. Recently, the legal dominance has prevailed, and now when strategies have accumulated, attempts have been made to solve the economic issues with ever more new laws, as well as the modifications of the existing laws. The same occurred with the maritime domain. Its former status, the one of a general good, is now being considered public property. The question is whether its status should be such or not. Its comparison to the developed European economies which have granted the maritime domain the status of public property, have remained inconclusive, since the basic question has gotten in the way, which is the following: Has Croatia developed the macro-management system of the maritime domain which contains the developed system of supervision and the promotion of development? The economies which have granted the public property status to the maritime domain and have created the possibility of privatisation of one of its parts, have a well-developed macro-control and macro-management system resting on the long-term system, starting at the local self-government level. Unfortunately, in Croatia this still remains
unknown. Therefore, the question remains related to the objective possibilities and the appropriateness of the transformation of the maritime domain from the general good into public property. Therefore the research hypothesis which tells *the reform of the Law on Maritime Domain and Seaports is the result of a deliberate strategic policy of the Republic of Croatia, affecting and connecting all the stakeholders of that development system and model*, is not proven. In other words, it is clear that the system and model of management, containing a quality and an omnipresent supervisory function, as well as the development stimulating function, has not been developed yet in Croatia. Therefore, an answer is required to the following question: *Is it advisable to integrate the maritime domain into the existing trial-and-error model in order to learn from our mistakes how to responsibly manage the limited resources of national interest?* As for this question, i.e. answer, we hold the opinion that it is not advisable to expose the maritime domain to the role of a guinea pig in the current environment of the macro-management in Croatia, but to learn and build the macro system in some other way. Only when the system is developed at least at the level of the possible and acceptable risk, we can think about the maritime domain as public property, not before. Under the present conditions, it is important to understand and to admit, as difficult as this may be, the existence of a high level of ignorance and disorientation in the market-oriented economy, in order to be able to do as the President of the Republic of Croatia, Mrs. Kolinda Grabar-Kitarović says, which is the following: “Croatia should be running, not walking.” In order to do this, we should be learning and upgrading the system continuously, which represents the requirement for reducing the risk, as well as economic repercussions of legislative changes and annexes to legal acts.

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WELFARE AND GOVERNANCE CRISIS OF NEOLIBERAL GLOBALIZATION: THE NEW INSTITUTIONAL ECONOMICS PERSPECTIVE

Review
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Abstract
This paper focuses on why the debate over neoliberal globalization is so popular around the world at the beginning of the 21st century and investigates the new institutional economics responses. Crises are not new to capitalism, but we all have been witnessing devastating economic, social, cultural, and political fluctuations in the global economic order. Classical welfare economics ignores distributional effects of theory and morality. Global poverty, inequality, unemployment, unfair trade, migration, environmental disasters etc. are paradoxes or evils of neoliberalism and not sustainable for future of humanity. In order to explain evolution of major causes of the conflicts related to globalization historically, we review a wide range of the literature and analyze the recent discussions of controversial topics on global welfare and governance implications of neoclassic economic thought. The study concludes that there is a growing consensus on the inadequacy of welfare economics in global society. Technological progress and corporate-led economic globalization in real world result in economic nationalism. Retreat from globalisation may be the beginning of a new phase of capitalism. The
new institutional economics says that institutions and social order matter on well-being and development. So we should rethink losers and winners from neoliberal globalization and reshape rules of global economic order in favor of global losers.

Keywords: New Institutional Economics, Globalization, Neoliberalism

1. INTRODUCTION

Global capitalist order has been shattered. 21st Century globalization process has entered a new and destructive stage historically. The same as the economic troubles started in the later 19th Century concluded in big wars and economic crisis in the early part of 20th Century, 21st Century depressions has started with a range of major problems showing their influences since the last quarter of 20th Century. Technological revolution and unpredictable connections which were reached by globalization exist in the foundation of this deep fluctuations and inequalities. Humans knowledge being inadequate to solve today’s problems exists as the biggest handicap. Current national and global institutions have to manage the process on the one hand and form the new order on the other hand. Global movements of migrations, big changes in socio-economic and political statues of interest groups cause blowing up of human values, moral corruption and nearly disable these efforts, make the situation worse.

As an institution, economic order includes the natural environment human is in and the forms of this structure in the course of time. Everything concerning human is unavoidable to be a part or component of economic activities. As a social science, economics approaches internally and externally to the mutual interaction of economic and social facts, it is directly affected by physical sciences development as to explain the changes take place in time. In this case, economic analysis of economic order or organization as a system has to form the philosophical basis, based on the relationship between running of physical nature and development of human nature.

Modern capitalist order which was in the centre of debates in early part of the 21st Century, exists as a result of West enlightenment in 17th and 18th centuries after Mediaval Age and Industrial Revolution. In this period Weber (2015: 68-77) who considers all social facts which lie behind behaviour of saving capital and associates capitalist order expansion with capitalism soul; explains the developments such as seperating house work and production, free labor organization and work ethics in the frame of Protestant ethic. Commercial behaviour habits forming as bourgeoisie dedicates her/himself earning money, retins her/himself daily life joy by working more played an important role in disintegration of traditional structure. Religiously unrecognised behaviours as charging interest and earning money formed a moral basis to dedicate ones life into this job in accordance with the lofty aim of supplying material needs of humanity and also to capitalist system. Thus personal interest seeking
motivation and commercial activities which is realised to profit maximization could be explained within the capitalist institutional structure through economic rationalism.

Emerging individuals labor as the determinant of the economic value within capitalist system, is an important factor that begins the disengagement of market order from social order. “As property right includes the priority of ownership on both individuals himself and his own labor, it enables human to be a rising value in modern market society” (Buğra, 1989: 39-41). When market system which includes capitalist manufacturing model leaves social system, a socio-economic system emerges which is composed of employees represents economic system and state units represent political system and including staff who has different interests and in a hierarchic relationship. Organic relationship between political liberalism, capitalism and representative democracy submits the general framework of this economic order process as a system. In the capitalist system, economic base determining factors such as property and production relations, economic efficiency based on division of labour and specialization, individual who makes rational choices (homo-economicus), laissez-faire who quarantines to maximize individuals and societies interests and natural order approach, determined within the frame of moral basis, make government rival to market system politically (Avtan, 1995: 3-6; Akat, 2009: 50-51). This conflict which Adam Smith tries to conciliate by “invisible hand”, has become a dilemma field that capitalist system and liberal philosophy come across.

Basic tenet of capitalism is the coordination function it performs through price mechanism or invisible hand. However coordination is not the same as governance. Coordination take places in a body of specific rules or an institution. Though governance is an activity which requires restatement of all these rules and institutions when needed. In capitalist societies state commits the governance job as a political authority. Market does not have a type of mandatory power as the political authority has (Scott, B.R., 2011: 12). Polanyi (2014: 35-37) in the early 20th century, was emphasized the impossibility of a market system that can stabilize itself while he was examined the crisis represented by 1929 the Great Depression through a institutionalist point of view. However capitalist market system set up whose philosophical basis was formed with Adam Smith has changed in time. For example Smith is against to monopolistic mindset. Smith describes monopolism as the source of wretched spirit (wretched spirit of monopoly) (Aydnonat, 2010: 157). This approach reveals clearly the regulatory role of the state on market. On the other hand dominance of the “invisible hand” on social order has begun to increase with 20th Century. When the crisis and reconstruction terms about nearly 200 years old modern economic order process are considered, it has been seen that capitalist system is not static and mechanic process but it has a dynamic and evolutionary structure and this framework affects from several unpredictable factors within the system. It can be said that those changes shape the national and international political and economic relations.
Evolution of economic theory in the period of modern economy confront us historically sometimes as a solution and sometimes the problem itself. Capitalist order is being examined by the ones who suffered from the system. Increasing of global interconnectedness prevents both winners and losers of the system to be indifferent to the situation. Global imbalances which was lived in 2008 and still having its effect maintain show that, economic theory has to apply to its bases of 200 ago for the solution. This approach based on political economy. According to this, in order to understand today’s problems, economy has to have politic, normative and moral goals (Piketty, 2015: 628). However neoclassical economic theory and neoliberal global order not only have pushed sharing and development problem to the background but also it has suggested that inequality is usefull for economic welfare. Stiglitz (2014a: 138-140) has called attention to the fact that trying to show inequality fair functions as a mean for class power competition.

This study aims to argue and examine economic political, social and environmental problems and destructive imbalances of the current century by foregrounding economical order phenomenon properly to the institutional economics approach. Study shows how economic science has to change in the direction of solutions of economic problems on one hand, while it reveals current contributions which institutional economics provide for predicting uncertainties on the other hand. Within this framework, second part studies the characteristics of globalization process developed in terms of neoliberal economy and liberal approach in the post-World Wars period. In the last part, emerge of institutional economics and basic thesis were discussed with the aspect of their relationship with neoliberal globalization.

2. NEOLIBERAL GLOBALIZATION AND GLOBAL CAPITALIST ORDER

2.1. What is Neoliberal Globalization?

Liberalism is a system of thought belongs to Western civilization which bases on freedom of the market system (capitalist order) representing individual and modern economic patterns. Liberalism grounds politically on modern nation state settlement along with democratic governance approach which is responsible for supplying public sovereignty. On the other hand liberalism with its economic aspect, defends a non-interventioning government conception to the market mechanism process and free trade policy which Adam Smith made a scientific explanation through classical political economic theory with his wok “The Wealth of Nations” in 1771. From the later 19th Century, along with the marginal revolution classical liberal philosophy continued under the hegemony of neoclassical economics. This transition has meant economics become an independent social science using mathematics intensely rather than political economics. From 17th Century to the early 20th Century classical liberalism has dominated as expressed above. In 1930’s with the first global great crisis of capitalist order, after World Wars, J. M. Keynes has started an economic thought
movement which will initiate a new era in liberalism. In Keynesian sight “welfare state conception which emerged from the basic idea of governments not intervening to the market process aimed not to lose liberal societies gains (Dardot and Laval, 2012: 137). Accordingly, within national market, individuals and firms can make choices freely, can compete, their right of property should be defended uncompromisingly and state should interfere to exterminate disturbing situations.

When intercountry economic relations are discussed, states carry out national policies to arrange those relations. Increase of economic and financial co-operation and integration among nation states which adopt liberal capitalist system results in globalization process. Among this structure that we can call global economy, global markets and global management mechanisms come into play. As increase in dependency among systems is possible in global economy, managing interdependence requires transnational regulations. “Globalization different from liberalism which is an ideological notion is perceived as an economic phenomenon or a natural result of economic development process. Whereas globalization is a concept which is regulative and includes transnational institutional structures including sovereignty (Kazgan, 2016: 56). In this sense it certainly has an ideological and political meaning as well as economic. Global economy comes with contamination of economic problems and crisis as well.

After World War II, until the time 1970th’s while the global economy expands in the countries which base on West and Western model, new liberal approach accompanied by Keynesian economic policies is also called embedded liberalism (Abdelal, R. and Ruggie, J.G., 2009; Ruggie, J. G., 1982). While global organizations such as International Money Fund (IMF), World Bank, and General Aggrement on Tariffs and Trade (GATT) are responsible for global capitalist management, nation states play an active role both in determining national policies and carrying out coordination through global management. In terms of global polarity, the world order composed of East, West and non-aligned movement is known as Bretton Woods system. Due to the low bargaining power of non-aligned countries, interblock political affairs with a two-polar global economic order is called “cold war”. In this golden age of capitalist period rapid growth and development boom were seen in Western economies. In developing countries, import-substitution industrialization and protectionist foreign trade policies were applied as an inward oriented economic development strategy and accordingly the emerging of regional and global economic integration was restricred. In the process of industralization labour’s share of rising wealth has increased and this had positive effects to liberal democracy.

Since 1970’s significant political and economical developments arose on a global scale that would cause transition from embedded liberalism to neoliberalism. These showed up in the form of high inflation and unemployment in developed countries as a internal and balance-of-payment deficits in developing countries as a external imbalances. Thus reorganization of global governance system founded in post-war period to maintain capitalist system became necessary (United Nations, 2017: 50). Fluctuations increased with
the end of dollar-based gold exchange standard in 1971 and the oil shock in 1973, and the debt crisis lived in Latin American and African countries caused collapse of the system. By reason of the fact that countries effort to protect their internal balance increased protectionism tendency, shrinkage in world economy increased. Global financial system changed as a result of payment oil incomes of oil exporter countries through dollar, depositing this income to western banks, and financing needs of the developing countries through oil originated dollars. Global capital flows and finance sector became a determinative actor for global economy. These developments became the most important factor that puts forward integration of global market (Balaam and Dillman, 2015: 237; Tabb, 2004: 113). Within the global capitalist order which was founded under the leadership of USA after World War 2nd, international cooperations regulative role has seen to fall behind. Existing system can not respond to development differences among countries and global integration problems. Therefore Bretton Woods system, modern liberalism underlying it or embedded liberalism, Keynesian financial thought system, and sense of welfare state have been came to an end since the beginning of 1980s.

Sense of capitalist system in which markets are dominating instead of state is the distinctive feature of neoliberalism. Within this structure global economic relations took place as increase of interdependence among national economies have been discussed in the frame of neoliberal globalization. This approach change was based on “the idea of state failure” in the period between 1945-1970 (Peck, Brenner and Theodore, 2017: 8). Because the imbalances which has been seen in world economy since 1970s, can just be explained through falsification of former dominant paradigm. This logic has been accepted as basis in both intellectual and institutional construct of neoliberal thought system. While individual and market behaviours are parts of natural order in 18th and 19th Century classical liberal thought; neoliberal thought and presumptive market foreseen in neoliberal economy is a mechanism only which can run with the presence of specific political, legal and insitutional terms constituted by the state (Golubovic and Golubovic, 2012: 4). Market order has become functional through providing competition terms and, social order has become functional through composing a constitutional structure based on democratic sense of rule. Mission of state is to quarantee the functionig of this system. While states has been providing this coordination in national level, they also have the function of providing local markets integration with global market. Position of state within political and economical rule order of neoliberal globalization determines functioning of capitalist system.

Intellectual ground of neoliberalism influential in constructing neoliberal global economical system was layed by Ludwig Von Mises and his student Friedrich Von Hayek (Peet, 2011: 117-125). The system of neoliberal ideas formed on criticism of socialist thoughts supports values of individual freedom. Individuals choices cause unforeseen consequences and these provide the optimal both economically and socially. Therefore, state should not interfere in the process of this system. Despite states regulative dominant role, coordinating function of markets based on competition has been accepted. According to Von
Hayek (2015: 145-166) probability of having problem of a system based on competition in securing the justice is not more than the problems that can arise in the decisions made by state. People can attain economical power with their own will in case of taking decisions freely according to their skills and venture demands. When you take state as a planner instead of competition, people’s situation will change according to the powered ones appreciation. Regulations of state intended to maintain justice and equality can not be resulted as planned. Also as people are not equal in terms of knowledge, talent and skill, economic cost of distributing equal power to them will be high. Furthermore these differences are the main source of economic growth and development. So improvement is impossible without inequity (Wapshott, 2017: 190-191). Thus, at beginning of 20th Century, classical liberalism which was under threat because of socialism and the great depression, and the neoliberal approach which was developed to defend economic analysis, became a current issue by being renovated against the depression that Keynesian intervening system confronted in 1970s.

When it was handled in terms of mainstream economic theory, neoliberalism was supported with Milton Friedman’s supply side economics and monetarism approach. Inflation was seen as a monetary phenomenon (Lapavitsas, 2005: 34). This politics came into power by the government of Reagan in USA, and by the government of Theatcher in England since the beginning of 1980s. Aim was to achieve economic growth. While doing this it was aimed to increase demand and boost the production through tax cuts instead of supporting with public expenditure. It was accepted that economic growth would distribute automatically from rich to the poor (trickle-down economics) in all cases. The hypothesis; if market is efficient distribution will be the best too was reflecting market orders sense of justice. Arthur Lewis and Simon Kuznet had ideas supporting this view. According to this inequality is neccessary for development because of the capital savings and it should be seen normal at the first stages of development (Stiglitz, 2006: 99-100).

To meet the financial needs of developing countries and the integration of global neoliberal policy, a set of reform proposals put into practice known as “Washington Consensus” (WC) (Williamson, 2008: 14). These advices were also regarded as a milestone for neoliberal globalization. Policies handled as maintaining financial discipline in both developed and developing countries and keeping inflation under control, deregulation, privatization, free foreign trade and capital account liberalisation have been started to put into practice since the beginning of 1990s (Beeson and Islam, 2005: 201). Global management of policies were executed by International Money Fund (IMF), World Bank and World Trade Organisation (WTO). Washington Consensus has been considered as a development programme when handled in terms of developing countries. However with this programme, distribution mechanism will realize development which market will supply automatically not the state. Since the beginning of 1970s planning failures seen in developing countries caused to be understood also how capital is distibuted is as important as capital stock. As the idea of the interest groups pressure in state prevents efficient distribution of sources has both accepted in academic and politic area, market became prominent alternatively.
These progress has also been effective in the approach of neoclassical mainstream economics and development economics was no longer a separate field (Meier, 2001: 16-19). On the other hand in Keynesian period as state intervention in mainstream economics was not a recommended practice, development economics was studied as a separate sub-discipline (Sen, 1983: 747). Neoliberal economics minimal state approach leaves space to development economics and reduces state area of politics. As globalization process compels state to global integration, it also complicates doing national politics.

A method of management called as governance has been adopted in implementing national and global politics. Hereby about development problems, instead of planning an efficient state namely an authority that has the capacity to coordinate market factors perfectly has been replaced. Before 1980 successful growth performances seen in some developing countries, caused hiding problems about governance (The World Bank, 1992: 3). World Bank has referred “governance crisis” underlying economic growth problems lived after 1980 in both developed and developing countries. In neoliberal political economics, state will minimize irregularities caused by intervention and thus will determine the efficiency of market according to governance capacity. When market run efficiently, best results will be taken in development too.

“Good governance” has important functions in terms of neoliberal globalization (Demmers et al., 2004: 6). Firstly good governance served a practical solution to the problem of lack of policy about how to implement World Bank Structural Adjustment Programmes. Secondly, a more technocratic approach was adopted in the management of complicated processes. Lastly, disagreements were abolished about good governance, development concept and process. A setting composed of minimal state, non-political and non-ideological standardized development programmes and technocracy were implemented by Bretton Woods associations. Since 1980s economic policy proposals has started to be more determinant in the financial and technical supports of these associations (Van Waeyenberge, 2013: 317-318). So WC policies has adopted market fundamentalism in terms of perfectly working markets hypothesis. Success of this approach qualified mainly to the good governance capacity both national and global level. In global capitalist system, including civil society and technocracy to the governance period against conflicts of interest between global associations and nation states and opposition to global system, has been proposed as a solution.

2.2. Basic Problems of Neoliberal Globalization and Institutionalist Development Agenda

Neoliberal globalization has started to increase its sphere of influence economically and ideologically after 1970s. Increase in world trade volume, technological progresses and changes caused by financial liberalisation raised the tension between global economy and national economies and created changes in the welfare levels of interest groups. Likely situations in globalized economy can be listed like this (Hirst and Thompson, 2014: 127-129).
Constituting national and international public policies both efficient and integrated which can compete with global markets.

Multinational companies becoming transnational companies.

Decreasing political effect of labour and power of economic bargain more and

Increasing multipolarity in international political system

Crisis lived in global economy in neoliberal globalization period, effect of global financial system is considerable. Although there is many observations for financial globalization is the main source of economical instability, “financial instability hypothesis” of Minsky has a particular importance which proposes the problem arises from capitalist market mechanism itself. Minsky (2013: 178) states that capitalist system produces inequality different from mainstream economics view and he thinks that states can reduce the intense of crisis through intervention and reforms. Minsky has proposed about neoliberal politics and implementations in the years of 1980s and 1990s that a permanent unstable market should be supported by institutional regulations, otherwise crisis will repeat cyclicaly. Thus in the period of 1970-2000, 112 bank and money crisis were seen in 93 countries (Savaş, 2012: 28). The most important two crisis lived in neoliberal period, arose in Asian countries in 1997 and USA in 2008 and affected world economy globally (Sassen, 2011: 30-31). According to McKinsey Global Institute report (2017, 6-9) growth in the financial globalization has been in progress within the period after 2008 crisis. Even though global financial system is more stable, crisis threat has not disappeared yet.

When considered in terms of development policies, politic reform results was not happened as expected in the countries followed decisions of WC. The failure in the processes about market distribution such as poverty and inequality was so apparent (Stiglitz, 2006: 102-109). According to Oxfam report (2017: 2) “the richest 1% has owned more wealth than the rest of the planet”. For this reason globalization process causes tension between global market and social stability (Rodrik, 2014: 448). The primary factor which is effective in this is the increase of the inequality in favor of capital sector and highly skilled labour force with the lowering of trade and investment barriers. Secondly, in countries having different national norm and choices, competition between technology which is standardized because of mass manufacturing processes and local manufacturing processes has become more cruel. Lastly with global markets restriction of national policy fields, difficulties encountered while serving social security services are the envolvements reducing social control. Global society requests more egalitarian policies from state. In the period after 1997 crisis new development agenda was accepted with Post-Washington Consensus (PWC) under the leadership of World Bank (Rodrik, 2006: 977-978, Marangos, 2009: 362). Accordingly as in WC it was accepted that neglecting institutional structure, poverty and the governance capacities of countries were effective in crisis, additional reform proposals took part in PWC. It was understood that economic growth is not enough for development and human development is an important explanatory factor in development failures. Hence the following 2008
While global imbalance and stagnation were lasting in the later 2010, 13 significant economist including World Bank economists came together to handle economical problems in Sweden in October 2016 and compromised on a development policy text composed of 10 articles (Stiglitz et al., 2016). According to Stockholm Statement, approach based on traditional neoliberal economics and trickle-down economics threatens social coherence and economic development through raising inequality among countries. Accordingly development policies should be inclusive, have social goals except growth, be sensitive to environment, pursue the balance among market, state and society, care about social value and mind, consider the inequalities seen in global labour markets because of technological developments and monopolies of companies, adopt international society and aim equal distribution of wellbeing to everybody.

On the other hand also problems about governance of the basis institutions of neoliberal global economical order contribute this tension. For example 1997 crisis revealed the necessity of coordination among developed and developing countries. G- 20 is an informal forum composed to meet the need like this. After 2008 crisis it has started to take a more active role in overcoming global economic and financial recession (Barone and Bendini, 2015: 5). Crisis about welfare and governance seen in neoliberal period accepted as the failure of international institutions (Senses, 2013: 251). According to Stiglitz, (2014b: 568) international economic institutions such as IMF and World Bank’s management mechanisms and national politics do not have a priority to compensate the countries losses which suffered from globalization. While markets have been globalized, effect of national level politics and democratic structure to global politics has started to be weaker. Global losers have been acting against globalization and protectionism and economic nationalism has been increasing in all over the world notably in USA and England – Trump administration and Brexit vote. It has been seen that opposition put populist policy into power against globalization (Rodrik, 2017: 1-4). According to Dao et al. (2017: 9-10) in both developing and advanced economies, labour’s share of income has been declining since the 1970s because of globalisation of trade and global value chains. Decrease of the national middle class because of the inequality especially in Western economies, has reduced political effectiveness of these groups and, caused populism and plutocracy on national level. Evidences in the direction of increasing inequality weaken democratic capitalism in the national level have been increasing. Also increase has been observed in global middle class and global plutocracy (Milanovic, 2016: 192-204).

There has been two significant attempts of United Nations (UN) which support efforts on global development management. UN has proposed to expend scope of development as a concept, to manage in terms of global cooperation and political mobilization (United Nations WESS, 2014-2015: 1-2 and 141, United Nations Committee for Development Policy, 2012: 3). Millennium Development Goals at the United Nations Millennium Summit in 2000, and
17 sustainable development goals in the private summit in 2015 have been determined. (United Nations General Assembly, 2000, United Nations General Assembly, 2015) Accordingly, a change of those institutions’ strategic policy choices and administration which are responsible for management of global economy is important implications for global governance.

All of these factors mean the rise of risks and uncertainty in the management of globalization process in the global economy. National tensions complicate the management of globalization process at the national level. Negative externalities caused by the countries or classes who had loss because of globalization, intensify the need for new approaches in global economy management. There are many differences in globalization processes in the 21st Century than former periods. These differences also complicate effects of globalization at national and global level. Novelties in globalization can be listed as this; a) Effects of globalization are less predictable, b) Effect of new globalization is more sudden and uncontrolled, c) The New Globalization denationalized comparative advantage, d) The new globalization breaks the connection between employees and G7 firms, e) The new globalization changed the role of distance, f) The New Globalization should change how governments think about their policies (Baldwin, 2016: 10-14). So traditional neoliberal economic theory remain incapable not only fictionally but also in modelling new economic periods. For being globalization process sustainable, expectations for re-organization of globalization within the frame of development policies come up accordingly.

Asian countries, especially big players such as China and India’s integration to global economy has a great role in globalization movement getting more complex. Shift of global trade routes to Asia, expansion of global value chains as to connect America, Europe and Asia bring uncertainty in terms of global governance. There are two basic dimensions to overcome this uncertainty. Firstly, coming to an agreement on what kind of national and global mechanism in other words organization should be set up, secondly functioning and roles should be set out within the mechanism. This also mean establishing new world order. Significant efforts for this were mentioned above. Yet the conflict in terms of new globalization features, global economic and political fluctuations and political and force competition have kept on, new economic and political world order can be expected to be shaped through the mid-way of the first half of 21st Century. Rodrik (2011: 175-181, Rodrik, 2000: 181-185) has made a significant contribution to those arguments about global system and governance of globalization as “political triangle of world economy” or impossible trilemma.
As seen in the figure 1, in this trinity hyper globalization, democratic politics and nation state do not occur at the same time. In a wholly globalized economy, nation state politics, in other words if nation is demanded to have the right of determine its own destiny, democratic politics must be left off, if democratic politics is demanded nation state must be left off. Nation state and democratic politics describe after Second World War period. In neoliberal globalization period a consensus like Golden Straitjacket situation can be mentioned. In this case, states get downsized, importance of democratic politic representation declines and adaption to global markets and regulations gain importance. State’s mission is to realize this governance. Democracy gain importance for global governance in global federalism. In this situation supra-national rules get ahead rules of nation state. For the first half of 21st Century the probability of global federalism seems low. When new globalization tenets are taken into consideration, it can be predicted that Golden Straitjacket order will continue, on the other hand tension which will be caused by the decrease of national democratic governance and difficulties in managing diversities will continue increasingly.

3. THE NEW INSTITUTIONAL ECONOMICS (NIE) AND GLOBALIZATION

Roots of institutional economics which was originated in the USA has gone back to the later of 19th Century. Old or original institutionalists like T. Veblen, J.R. Commons, W.C. Mitchell and C.E. Ayres have criticized capitalist system by objecting to the basic hypothesis of neoclassical economics since the early part of 20th Century. Old institutional economist have defended that economics must also investigate human behaviours, traditions and institutions and that it must include interventionism as a policy option (Kazgan, 2014:
Institutional economics argues units such as market and firms are actually institutions which were ignored by mainstream economics (Özveren, 2007: 17). Theorists or founders of new institutional economics (NIE) which has started to be efficient in the last quarter of 20th Century are R. Coase, D.C. North ve O.E. Williamson. Coase handled a firm as an institution, North wrote economic history through taking into consideration institutional units and Williamson conceptualized economic units as institutional governance frameworks. Different from old institutional economics, it has an approach that strengthen mainstream economics rather than being an alternative idea to it. While it adopts mainstream economics assumptions such as methodological individualism, scarcity and competition, it reconsiders assumptions such as rationality and transaction costs (Şenses, 2017: 91, Cabellero and Soto-Onate, 2015: 960). Markets become completely efficient under zero transaction costs and symmetric information assumptions. If transaction is costing and there is bounded rationality, then institutions become important (Fine and Milonakis, 2014: 154). Because structure of institutions has determined transaction costs and so it has becomes the reason of market failure.

NIE actually has been developing on two different sides. First is interested in institutional environment -rules of game-, second is dealing with institutions of governance- how to play the game- (Şenalp, 2007: 72). According to North, (2010: 9-26) reason of different performances of economies are institutions. The significant role institutions play in society is to decrease ambiguity through founding a stable structure for the relationship between humans. North states the difference between institution and organizations is important. Institutions express rules of the game while organizations are governance institutions and are responsible for how to play the game. Institutions are body of formal rules which is set up by humans and informal rules such as practices and course of actions. Aim of the rules are to define and determine how a game must be played. Institutions defines and restricts the preference cluster of individuals through economic terms. Organizations though include political formations (political parties etc.) economic formations (companies, property rights, contracts, trade unions, global economic organizations etc.), social formations (sport clubs, help organizations etc.) and educational formations (schools etc.). Institutions and organizations change in time by interacting each other. While institutions define the opportunities in society with the standard restrictions of economic theory, organizations are founded to take advantage of these opportunities. Throughout of all this period of change the key factor is information. Change of institutions and organizations depends on information and accordingly process and capacity of learning (North, 1994: 364).

There is a close relationship between improvement of NIE and neoliberal globalization process. While NIE accepts free market ideology on one hand it has gained an opportunity to analyze economic systems and periods multi-perpectively by bending the assumptions in which market is unsuccessful and equipped with instruments to explain the mainstream economics and new economic developments on the other hand (Akansel, 2016: 21). It is possible to evaluate NIE as one of the great contributions made to development theory in
1980s when it was passed to neoliberal politics. New institutional framework has reminded the role of institutions in differentiation of development performance. It has enabled to non-market regulations in case of situations when non-market exchange formats exists especially in rural places (Thorbecke, 2013: 145-147). Thus development economic theory agenda in the market fundamentalism period was explained on NIE. Theoretical background of NIE was used for development strategies of institutions like United Nations and World Bank and global politics agreement platforms like WC and PWC.

Development policies which is a fundamental of globalization process, defined state as the most important component of global competition within good governance concept. Although market was foregrounded, effectiveness of market was associated with institutional capacity of state in some sort. Need to global effective state can be associated with new economics. In new economics political and social process are associated with economic order and can not exist without having their help (Demir, 2003: 66). As mainstream neoliberal economics field, market and social order evaluated as different areas, it has ignored social area in theory and externalities and disruptions that can arise from this. So, coming up of good governance concept is a sign of the connection between NIE and globalization process (Carroll, 2005: 21, Levent, 2016: 25). J.E. Stiglitz is an economist who made a contribution to the theory of imperfect information within institutional economics (Bardhan, 1989: 1389). The report headed “The State in a Changing World” (The World Bank, 1997) which was published in 1997 when Stiglitz was the head economist of World Bank, emphasized that nation state must be located in a more central position as an institution in development.

4. CONCLUSION

Economic, social, political and military imbalances which are felt worldwide has reduced the opportunities of societies to make politics and governance in national and global scale. Searching a creative new world order which pays regard to the balance between market and society and the uncertainty in this area has gone on. It has been seen that relationships between neoliberal economics and neoliberal globalization give significant analysis opportunities when handled in terms of institutionalist approaches. In this study it has been shown that NIE has an important contribution to neoliberal globalization period and development economic agenda. It has been seen that capitalist order was reorganized after 1980 and basic arguments of NIE were utilized there. As an advancing area in economic theory, institutional approaches has been used increasingly to explain the complexity and diversity throughout the period of globalization.

In the new world order, an egalitarian institutional structure which brings human development forefront, has a crucial importance for global society. Economic theory as a social science must give importance to the mechanisms which will find solutions to the humans real problems. In this study while
evaluating global economic order and perspectives of welfare and governance performances that in a very extended issue and restricted area, it is aimed to draw attention that institutional building must be considered. Countries must make regulations to create effective cooperation conditions in global system. Common ground of all these efforts are the developments in the direction of which state and central planning will have a major role in this field, area of national and democratic politics will get smaller for a while, more authoritative, faster and more flexible decision mechanisms (institutional organizations) will be used.

According to institutional economics approach, capitalist order itself is an institution. Working of capitalist system also depends on the approaches of national and global institutions which are responsible for applying the rules as well as those rules which compose it. Considering the most current developments effective in the early of 21st Century within neoliberal globalization, not only capitalist sytem but also all the institutions on national and global level are accepted as the determiner of economic performance. Global governance institutions such as IMF and World Bank have assigned global development as the priority issue while presenting the rules of global economy. This situation implies that globalization period can not be sustained with development differences. Global winners regard continuation of global capitalism and reinstating of global economic stability based on equal distribution of welfare and fostering organizational structure. Because network connections such as technological developments, global investment and trade connections, global value chains and global migration trends have been making the work of current organizational structure difficult. For this reason, very different social orders of a geographically developed economic organizational structure must be included in the system with low transaction costs. This situation means accepting the fact that different organizational systems in terms of economic the ory increase transaction costs and accordingly determine economic efficiency. Consequently, when all those developments and academic literature are examined, it has been considered that neoliberal globalization which became more chaotic will be end up with founding a new world order. Mainstream economic theory on the other hand has been trying to explain those developments through new institutional economic theory leaded by Coase, North, and Williamson.

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MANAGEMENT AND ORGANISATION
In this study, authors analyze the practices and effectiveness of educational management and leadership, according to the selected psychological and sociological characteristics of school principals in Croatia and Bosnia & Herzegovina. The selected psychological traits have been already analyzed in the case of entrepreneurial orientation and proved to be relevant for differentiation of schools and principals, according to their inclination to entrepreneurship. In this paper, more comprehensive, analytic criteria are used to explore the effectiveness of educational management and leadership practices in the sample of Croatian and B&H principals. The objective of the study is to determine the significance of the psychological and sociological variables for the practice of school management and leadership, as well as to suggest potential implications for school leaders’ professional orientation and development.

Keywords: school principals, psychological traits, social relationships
1. INTRODUCTION

In the previous decade, school management became an increasingly difficult profession, with multiple stakeholders raising their expectations toward the school principals, which resulted in a high stress and inadequate supply of new candidates (see, e.g. DiPaola & Tschannen-Moran, 2003). The ‘softer’ view of a profession, characterized by the transformation of the perceived governing role of a principal, toward a leading position, which involves multiple roles and a wealth of stakeholders’ expectations, has started to develop in UK, around 1988 (Hall & Southworth, 1997). Such a view of a principal, emphasizing the multi-faceted leadership role, has been often associated with professionalization and the licensing imperatives (once, again, with the UK as a benchmark – see, e.g. Bolam, 2004). The ‘new’ principal is a professional leader, engaging in both instructional and transformational leadership practices, which is a significant departure from the traditional view of principalship as a simple transmission of educational policy to the school level (Bush & Glover, 2014).

Challenges of principal professionalization in the transitional and post-transitional societies are as complex as those, faced by the advanced market societies, although the additional issues could be coming into play, as well. For instance, in Slovenia, candidates for new principals still seem to be adopting a more hierarchical view toward of the principal’s role (Trnavčevič & Roncelli Vaupot, 2009), which could be attributed to the differences in the educational tradition and social context. Due to the influence of the political elites to the educational processes, this type of an environment also fosters development of the principals’ political skills, aimed at ‘power brokerage’ and manoeuvring among powerful stakeholders (Trnavčevič & Roncelli Vaupot, op. cit.).

In addition, the political dimension of the job significantly increases the personal dimension of principals’ effectiveness. This might not be acknowledged in (post) transitional environments, which are often characterized by reliance on the standard Anglo-Saxon literature in educational training and emphasis on the managerial dimension of a principal’s job. Such an assessment has been made for the case of Slovenia (Sentočnik & Rupar, 2009), which was the first country in the South-East Europe to introduce a national program of professionalization and licensing in educational management.

1.1. Theoretical background, research question and hypothesis

The Croatian context of managing schools has been characterized by a range of activities, aiming to develop a national professionalization framework, similar to the Slovenian. Different public policy actors were involved in the policy development, although without enough transparency (Alfirević, Pavičić & Relja, 2016) and, mostly, without real support from the powerful actors from the educational policy arena. Analysis of the key policy documents also reveals that Croatian education is still centralized, with school principals expected to serve
as a transmission of national educational policy. Nevertheless, decentralization and principal professionalism/autonomy have been proclaimed as the goals of the ongoing educational reform (Varga, Peko & Vican, 2016).

The professionalization framework has been developing for as long as twelve years (since 2005, when the first working group, hosted by the Croatian Teacher training agency, created the draft of the national training program for principals – see: AZOO, 2005). The formal requirements for principal training and licensing have been included into the strategy for development and reform of science and education, as well as into the national legal framework. However, in practice, the educational authorities postponed the actual implementation of the framework (at least) until 2021.

In Bosnia and Herzegovina, principals’ role is, primarily, political, although an unintended advantage has been created by the creators of the complex institutional and political system of the country. Due to the lack of consensus in the national communities in B&H, many public policies, including the educational one, have been thoroughly decentralized and left to regional authorities, at least in a part of the country (Federation B&H), which is a positive driver of principals’ autonomy.

A recent study (Alfirević, 2017), compared the Croatian and B&H contexts, including the principals’ perceptions of their educational and training needs, as well as forms of support, received from the educational policy level. Regardless of differences in the institutional, political and social environment(s), surprisingly similar patterns of principals’ behavior were established across Croatian and two B&H educational systems (in Federation B&H and Republika Srpska, as constitutional elements of the B&H).

These results can be interpreted in terms of empirical results, to be discussed by a forthcoming study (currently available as an extended abstract by Alfirević, Pavičić & Petković, 2016), analyzing the principals’ entrepreneurial drive in schools across Croatia and B&H. This study indicates that the entrepreneurial behavior could be considered as a way of ‘patching up’ the institutional deficiencies of the educational systems and the weaknesses of the educational policies at the school level. The entrepreneurial behavior of a principal is, further, dependent on a range of individual principal characteristics, i.e. different psychological and social drivers. Factors, such as perception of own social status, personal satisfaction and the perception of social contribution, proved to be significant predictors of the entrepreneurial orientation.

An interesting analogy could be made between the behavior of entrepreneurs and school principals, once the entrepreneurial behavior becomes the topic of research. Namely, it has been suggested that, in institutionally unstable environments, entrepreneurs adopt behaviors, aimed at getting around the obstacles, created by the institutional context (Alfirević, Gonan Božac & Krneta, 2013).

Different theories have been developed to describe the emergence of entrepreneurial behavior. One of those is related to the ‘entrepreneurial personality’, i.e. to developing profiles of appropriate psychological and
sociological determinants of successful entrepreneurs. In a theory review, in the context of student entrepreneurship, Alfirević, Umihanić & Rendulić (2015) analyze such theories. Those suggest that relevant personal characteristics and social inclinations of entrepreneurially inclined personalities include the internal locus of control, risk propensity, tendency to behave in an innovative and non-conformist way, etc. (as based on a range of classical studies, including: Hornaday & Bunker 1970; de Vries, 1977; Brockhaus & Horwitz, 1986; Rauch & Frese, 2007).

In addition, personality is considered to be one of key components for the successful leadership, in general (Judge, Bono, Ilies & Gerhardt, 2002), which is applicable to the school context and leadership, as well (Goldring, Huff, May & Camburn, 2008; Leithwood, Harris & Hopkins, 2008).

In analogy with the entrepreneurship and leadership studies in the private sector, as well as studies, dealing with the entrepreneurial and leadership behavior of school principals, the research question has been developed. It can be formulated as follows: What are the individual and social characteristics, determining the effectiveness of principals’ work?

Namely, if entrepreneurial orientation seems to be a useful construct for the study of educational management in the SEE region, as the inefficient official governance systems and approaches need to be ‘patched up’, success in managing an educational institution remains heavily dependent on the individual principal and his/her personal characteristics. As to operationalize the research question, the following hypothesis has been developed:

HYPOTHESIS: Selected principals’ psychological and sociological characteristics can serve as empirical predictors of their educational management and leadership effectiveness.

1.2. Key constructs and measures

The selected psychological and social dimensions of principals’ effectiveness were constructed according to Gunn & Holdaway’s (1986) idea that the overall job satisfaction can be derived from a group of relevant, job-related perceptions. Different studies emphasized a range of applicable indicators, including the nature of the principal’s work, status of the profession, interactions with other actors, salary, working conditions, etc. (Friesen, Holdaway & Rice, 1983).

In this study, several psychological and social characteristics, have been selected. They have been previously identified as predictors of principals’ entrepreneurial behavior (Alfirević, Pavičić & Petković, 2016). According to their hypothesized influence to principals’ effectiveness, the same items are included into this study, as well. Those include: status of the profession in the local community and society, feeling of contribution to the local community and society, job compensation and benefits, as well as the resulting individual satisfaction – both personal and professional.
The effectiveness of principals’ work has been, also, previously successfully measured by two empirical constructs, composed of items, related to educational management and leadership effectiveness. There are several empirical studies in Croatia and B&H, employing those measures, such as those by Alfirević, Pavičić & Relja (2016), as well as Alfirević & Petković (2016).

All constructs are measured by standard 5-point Likert scales and are included into a research instrument, which has been deployed across schools in Croatia and B&H, as described in the following section.

1.3. Research population and sample

Population for the study consisted of all primary and secondary schools in Croatia and B&H. The sampling frames for schools in Croatia and Republika Srpska (RS) in B&H are available from relevant educational authorities (Ministries of education), while sampling proved to be much more difficult in Federation B&H (FB&H). Namely, educational policy in FB&H is decentralized to regional level, without much authority at the level of federal government. Due to the lack of the sampling frame for FB&H, an unofficial list of schools, available from the non-governmental organization and the on-line portal for educational professionals Školegijum (as available from: www.skolegijum.ba), has been used to determine the research sample.

Data has been collected both by using an online survey, as well as by using the paper-based questionnaire, which were distributed to principals by postal mail, or fax, in case they had no Internet access, or skill/motivation to participate in the online survey. All data were consolidated into a single dataset and entered into the IBM SPSS/PASW software, which was used for statistical analysis.

Random sampling has been used to select approximately 20% of items from sampling frames for Croatia, RS and FB&H in Bosnia & Herzegovina. The selected schools were contacted by e-mail, or phone, depending on the availability of their e-mail to the researchers, with prior permission being received from educational authorities. Authors received responses from 68 schools in RS and 55 in FB&H (15.2% of the overall B&H sampling frame) and 246 schools in Croatia (19% of the entire school population), which is the response rate, comparable to previously cited empirical studies, dealing with principals in Croatia and Slovenia.

2. EMPIRICAL RESULTS

Descriptive statistics for key constructs is presented by Tables 1 and 2, which provide an interesting insight into the satisfaction and its drivers. The level of principals’ satisfaction with their profession, as well as their overall personal satisfaction, are quite high. Principals in B&H are somewhat more satisfied with their profession, while their Croatian peers have a marginally higher overall personal satisfaction.

In both countries, principals’ social status in the wider social structure is
perceived to be below average, while the status in their local communities seem to be somewhat higher. This is not a surprising finding, since the actors in local communities do seem to have a better insight, as well as a higher understanding and appreciation for principals’ work. At the other hand, principals’ perception of own social contribution is also high, which hints of their intrinsic motivation, in terms of Herzberg’s theory. Both in Croatia and B&H, principals’ compensations are perceived to be inadequate, thus, confirming the conclusion of intrinsic motivation.

Descriptive statistics for the key constructs in Croatia

<table>
<thead>
<tr>
<th>Descriptive statistics - Croatia</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational leadership index</td>
<td>24.00</td>
<td>55.00</td>
<td>40.35</td>
<td>5.40</td>
</tr>
<tr>
<td>Educational management index</td>
<td>28.00</td>
<td>55.00</td>
<td>42.03</td>
<td>4.86</td>
</tr>
<tr>
<td>Social standing in local community</td>
<td>1</td>
<td>5</td>
<td>3.14</td>
<td>0.822</td>
</tr>
<tr>
<td>Social standing in society</td>
<td>1</td>
<td>5</td>
<td>2.55</td>
<td>0.804</td>
</tr>
<tr>
<td>Compensation</td>
<td>1</td>
<td>5</td>
<td>2.06</td>
<td>0.917</td>
</tr>
<tr>
<td>Contribution to local community</td>
<td>1</td>
<td>5</td>
<td>4.26</td>
<td>0.587</td>
</tr>
<tr>
<td>Contribution to society</td>
<td>1</td>
<td>5</td>
<td>4.22</td>
<td>0.646</td>
</tr>
<tr>
<td>Principals’ professional satisfaction</td>
<td>1</td>
<td>5</td>
<td>3.92</td>
<td>0.762</td>
</tr>
<tr>
<td>Principals’ personal satisfaction</td>
<td>1</td>
<td>5</td>
<td>3.87</td>
<td>0.774</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations

The principals’ effectiveness was measured by two indexes, constructed by multiple questionnaire items, which had been previously validated in studies, conducted by Alfirević, Pavičić & Relja (2016) and Alfirević & Petković (2016). Once again, there are very small variations in perceptions of effectiveness in educational leadership and management in two analyzed countries.

Further analysis concentrated on linear correlations among the key constructs, in order to reveal the existence of statistically significant empirical relationships. It also involved preliminary analysis of the obtained empirical distributions, by using the Kolmogorov-Smirnov tests. None of the variables involved conformed to the presumption of normal distribution, which required the use of non-parametric statistical methods in further analysis.

Descriptive statistics for the key constructs in B&H

<table>
<thead>
<tr>
<th>Descriptive statistics – FB&amp;H</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational leadership index</td>
<td>19.00</td>
<td>55.00</td>
<td>41.49</td>
<td>6.82</td>
</tr>
<tr>
<td>Educational management index</td>
<td>24.00</td>
<td>55.00</td>
<td>42.50</td>
<td>5.96</td>
</tr>
<tr>
<td>Social standing in local community</td>
<td>1</td>
<td>5</td>
<td>3.15</td>
<td>0.989</td>
</tr>
<tr>
<td>Social standing in society</td>
<td>1</td>
<td>4</td>
<td>2.60</td>
<td>0.830</td>
</tr>
<tr>
<td>Compensation</td>
<td>1</td>
<td>4</td>
<td>1.89</td>
<td>0.896</td>
</tr>
<tr>
<td>Contribution to local community</td>
<td>4</td>
<td>5</td>
<td>4.44</td>
<td>0.501</td>
</tr>
<tr>
<td>Contribution to society</td>
<td>3</td>
<td>5</td>
<td>4.38</td>
<td>0.561</td>
</tr>
<tr>
<td>Principals’ professional satisfaction</td>
<td>1</td>
<td>5</td>
<td>3.98</td>
<td>0.707</td>
</tr>
<tr>
<td>Principals’ personal satisfaction</td>
<td>1</td>
<td>5</td>
<td>3.76</td>
<td>0.881</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Descriptive statistics – RS B&amp;H</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational leadership index</td>
<td>27.00</td>
<td>53.00</td>
<td>41.52</td>
<td>5.46</td>
</tr>
<tr>
<td>Educational management index</td>
<td>30.00</td>
<td>54.00</td>
<td>41.20</td>
<td>4.82</td>
</tr>
<tr>
<td>Social standing in local community</td>
<td>1</td>
<td>5</td>
<td>3.31</td>
<td>0.868</td>
</tr>
</tbody>
</table>
Table 3 presents the value of linear correlation coefficient (calculated by using the rank-based Spearman method), which provide interesting conclusions about the association of principals’ satisfaction drivers with the measures of their effectiveness.

### Linear correlations among key constructs (Spearman coefficient)

<table>
<thead>
<tr>
<th></th>
<th>Educational leadership index</th>
<th>Educational management index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social standing in local community</td>
<td>0.055</td>
<td>0.062</td>
</tr>
<tr>
<td>Social standing in society</td>
<td>0.020</td>
<td>0.016</td>
</tr>
<tr>
<td>Compensation</td>
<td>-0.068</td>
<td>-0.123*</td>
</tr>
<tr>
<td>Contribution to local community</td>
<td>0.285**</td>
<td>0.273**</td>
</tr>
<tr>
<td>Contribution to society</td>
<td>0.262**</td>
<td>0.273**</td>
</tr>
<tr>
<td>Principals’ professional satisfaction</td>
<td>0.221**</td>
<td>0.222**</td>
</tr>
<tr>
<td>Principals’ personal satisfaction</td>
<td>0.194**</td>
<td>0.221**</td>
</tr>
</tbody>
</table>

Notes: *Significant at the 0.01 level. **Significant at the 0.05 level.

While social status seems to be irrelevant, the feeling of social contribution provides a relatively weak, but highly statistically significant correlation with the effectiveness measures. The same applies to the correlation among principals’ satisfaction and effectiveness. Once again, principals’ compensation is proved as inappropriate by the negative influence to effectiveness.

Causality of identified relationships was assessed by using the simple linear stepwise regression model, in line with the hypothesis of the psychological and social determinants of principals’ work, serving as potential predictors of effectiveness. Table 4 presents results of regression analysis for the case of effectiveness in educational management.

All obtained statistical models were significant (p<0.01), without any detected problems of multicollinearity (judged by the values of tolerance and VIF), or the assumption of independent errors (Durbin-Watson/DW value of 1.739). The assumptions of linearity and homoscedasticity have been checked by the visual inspection of the P-P plot of regression standardized residuals. Although all the statistical preconditions were met by the three regression models, their predictive power (measured by the $R^2$) is relatively low – with 7.1% of variance explained by Model 1, 8.8% by Model 2 and, finally, 10.4% by Model 3.
### Table 4

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>31.807</td>
<td>1.853</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Contribution to local community</td>
<td>2.364</td>
<td>0.428</td>
<td>0.266</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>30.099</td>
<td>1.943</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Contribution to local community</td>
<td>1.998</td>
<td>0.446</td>
<td>0.225</td>
</tr>
<tr>
<td></td>
<td>Principals’ personal satisfaction</td>
<td>0.854</td>
<td>0.314</td>
<td>0.136</td>
</tr>
<tr>
<td>3</td>
<td>(Constant)</td>
<td>31.686</td>
<td>2.017</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Contribution to local community</td>
<td>1.883</td>
<td>0.444</td>
<td>0.212</td>
</tr>
<tr>
<td></td>
<td>Principals’ professional satisfaction</td>
<td>0.946</td>
<td>0.314</td>
<td>0.151</td>
</tr>
<tr>
<td></td>
<td>Compensation</td>
<td>-0.696</td>
<td>0.260</td>
<td>-0.128</td>
</tr>
</tbody>
</table>

Notes: \( R^2 = 0.071 \) for Step 1; \( \Delta R^2 = 0.017 \) (p=0.007) for Step 2; \( \Delta R^2 = 0.016 \) (p=0.008) for Step 3

Source: Authors’ calculations

The best fit with the empirical data is provided by Model 3, using the contribution to local community, principals’ professional satisfaction and compensation as predictors. While the feelings of social contribution and professional satisfaction increase the effectiveness, the inadequate compensation serves as a source of demotivation and performance reduction.

Table 5 provides results of regression analysis for the case of effectiveness in educational leadership. Once again, all statistical preconditions were met by two obtained models of linear regression, as both models were significant (p<0.01). No multicollinearity was detected (judged by the values of tolerance and VIF) and the assumption of independent errors has been accepted, as well (Durbin-Watson/DW value of 1.681). The visual inspection of the P-P plot of regression standardized residuals also provides assurance for a statistically acceptable procedure. Nevertheless, predictive power of the obtained models is even lower, than in the case of educational management effectiveness, as the value of \( R^2 \) equals 5.9% for Model 2 and a somewhat higher value of 7.4% for Model 2.

Regression analysis singles out the perceptions of principals’ contribution to their local community and their professional satisfaction as drivers of effectiveness. This applies both to the ‘hard’ factors (addressed by the management dimension), as well as to ‘soft’ factors, represented by the leadership dimension. At the other hand, inadequate compensation proves to be negatively influencing the principals’ managerial performance, which is not the case with the leadership dimension of the principals’ effectiveness.
Table 5

Linear stepwise regression model of educational leadership

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>30.311</td>
<td>2.077</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Contribution to local community</td>
<td>2.418</td>
<td>0.480</td>
<td>0.244</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>28.236</td>
<td>2.224</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Contribution to local community</td>
<td>2.018</td>
<td>0.503</td>
<td>0.203</td>
</tr>
<tr>
<td></td>
<td>Principals’ professional satisfaction</td>
<td>0.961</td>
<td>0.385</td>
<td>0.126</td>
</tr>
</tbody>
</table>

Notes: $R^2 = 0.059$ for Step 1; $\Delta R^2 = 0.014$ (p=0.013) for Step 2

Source: Authors’ calculations

Based on empirical results, selected personal characteristics of school principals in Croatia and Bosnia & Herzegovina proved to be relevant predictors of their managerial and leadership effectiveness. This leads to the conclusion that the proposed hypothesis needs to be accepted, which has interesting implications, both for the academic discipline, as well as for the practice of educational management. Those are further discussed in the following section.

3. CONCLUSIONS, IMPLICATIONS AND FUTURE RESEARCH TASKS

This study proposed and, partially, supports a theoretical position that the ineffective and unsystematic approaches, used by the educational (and, potentially, other public policies) in different countries in South-East Europe, are ‘patched’ by the entrepreneurially oriented principals (and, probably, other public sector managers). In the uncertain and undeveloped environment/context, the managerial effectiveness seems to be dependent on the individual characteristics of a manager/leader and his/her skills to ‘navigate’ and ‘broker’ the requirements of powerful stakeholders.

The described theoretical position cannot be fully supported by the empirical results, presented in this study alone, although the overall empirical research of school principals (especially the arguments of Alfirević, Pavičić & Relja, 2016) seem to be affirmative. Nevertheless, future research, to be conducted in Croatia, as well as in other countries in the South-East European region, needs to be directed toward the discussion of the described problem.

There seem to be several promising fields of future research in the fields of educational administration/management and leadership, related to the presented empirical results. The promising future direction of empirical inquiry could include the analysis of principals’ personal traits and social inclinations, not only in the context of leadership, but also in the analysis of the managerial/administrative behavior. In addition, the ‘principals as entrepreneurs’ topic is quite neglected within the contemporary literature on educational management and leadership. Within this (sub)topic, the analysis of individual principals’ characteristics seem to be promising, as well.
Implications for educational practice are, also, based on the notion that the official educational policy does not seem to be especially eager to implement the professionalization and licensing programs, aimed toward the principals. In such an environment, school principals, as well as other public managers, should be advised to independently upgrade their managerial and leadership skills and competencies. This should be done regardless of the potential licensing requirements, which could (or could not) be implemented at some point in the future. Namely, development of a personal visibility and *habitus* within the profession, seem to be the correct pathway for navigating the public policy landscape and ensuring long-term success in managing individual educational institutions.

**REFERENCES**


TOWARDS THE MODEL OF SELF-TUNING BUSINESS PROCESS MANAGEMENT

Abstract
The interest in Business process Management (BPM) has flourished in the last decade as the adverse business conditions forced corporations to improve efficiency and effectiveness in daily operations. Though BPM can deliver significant business value, in practice it revealed challenges that prevented businesses from successful adoption. The modelling process has four distinct phases which leads to a lengthy implementation and often renders the processes too constrained for real life situations. This paper proposes a bottom-up approach based on actual daily activities logged by underlying monitoring infrastructure. If a number of activities form a repeatable sequence, they can be declared as a business process. A process may be identified by a single activity of the same type and source and destination in the Organizational Breakdown structure. Different repetitions of the same process can be compared and variations recorded. If the same variation is detected multiple times, the process definition can easily self-modify to become the new standard.

Keywords: business process model, business process monitoring, business process self-tuning

1. INTRODUCTION
Technology advances in the last few decades changed profoundly the way enterprises do business. Global corporate visibility, technology tools to improve marketing and acquiring new customers introduced competitiveness at unprecedented level. Market volatility forced companies even further in search of improvements and cost control leading them into analysis of internal procedures and processes. Old ways of doing business needed to be adapted to
new technologies. This led to wide effort in design of workflow management software tools in the nineties. Oriented mostly to manufacturing processes, professionals searched to optimize seconds in manufacturing because this led to high gains in yearly production. Manufacturing processes are well defined and easily measured, so analysis was fairly straightforward and changes fluently implemented. About the end of the century, management realized that improvements in manufacturing processes have only a limited reach and that processes outside the manufacturing plant need a redesign and optimization. Those processes, however, were not so well designed, they relied on individual experience and C-level managerial capability to organize effectively business processes inside their business units. This led to process micromanagement and lack of transparency across business units which later became one of the main challenges in corporate processes optimization. Workflow management efforts were broadened and we started talking of Business Process Management (BPM) whose benefits were hugely appealing but implementation revealed challenges that proved difficult to overcome.

Although the benefits of process modelling were undoubtedly present, financial gains were not easily quantified, which together with the amount of corporate effort needed to model and actualize the changes, made corporate management reluctant to invest in modelling initiatives. Indulska & All (2009) led a study of perceived benefits from implementing business process modelling and identified process improvement, inter-process communication, process performance measurement, problem discovery and cost reduction as most important.

Intangible financial benefits of process modelling in the enterprise do not justify management reluctance to encourage the necessary changes and invest time and funding, because the companies that implemented BPM procedures perform consistently better that the ones that didn’t. Castelina (Jan 2015) found that the enterprises that use BPM tools are 2.7 times as likely to be able to quickly tailor business systems to react to business change than the ones who don’t use BPM. A later analysis (Castelina, Oct 2015) based on 118 respondents showed significant enhancements in variety of performance metrics in enterprises with implemented BPM tools.

The implementation of Business Process Management framework requires a change of employee’s approach to everyday work. Most people are not used to thinking in process terms (Lyke-Ho-Gland, 2017).

APQC (2106) conducted a survey of 231 businesses to understand better the challenges and priorities of process management. The top ones were: moving from a function-based to process-thinking culture, defining and using process measures and Engaging leadership in process management.

Capgemini research study (2017) identifies five main barriers to BPM implementation: functional silo culture, fragmented budget, perception of BPM as an IT item, Resistance to BPM from IT staff who have responsibility for existing systems and lack of change readiness or willingness.
To gain insights into disappointing performance of information systems in BPM implementation, Mutschler & All (2007) conducted three empirical studies. They found five main problem areas: process evolution, hard-coded process logic, complex software customizing, inadequate business functions and missing process information. The study showed that many problems arise from the evolution of the business process and its variability. That is logical, as a business process is a live essence that should adapt constantly to new business conditions. But this forces constant changes in software which becomes complex task especially with hard-coded process logic which was predominant method of software development during last decades. Existing software solutions lack the possibilities to customize process logic at sufficiently flexible and detailed level.

There is a notable uncertainty among practitioners about how to create process models that analysts and business professionals can easily analyse and understand (Mendling & All, 2010). Existing frameworks provide insight into main process categories but remain too abstract to be directly applicable in practice.

Contemporary workflow management systems need completely specified design to enact a workflow managed process (Van der Aalst & Van Dongen, 2002). The design is a complex, time-consuming process and there are typically discrepancies between actual workflow processes and the processes perceived by the management.

Today’s workflow management systems enforce unnecessary constraints on the process logic (Van der Aalst & all, 2003) which was often mentioned as one of the main challenges in the adoption of BPM tools.

This paper proposes business workflow discovery based on actual flow of documents and information across different corporate departments which becomes the source for business process model and post-optimization monitoring.

2. METHODOLOGY

In view of a large scale software integration across multiple business units, the author felt it was sensible to test in a real life business situation how often and to what extent those challenges influence the flow of a business process and what steps could be taken to compensate for such events. In the next section, a real life business process is described, the flow of events around vehicle defect repair in an Internal Workshop Repair Unit. The process was selected for its straightforwardness and relative simplicity. It is part of a larger chain of processes across Transport Management and Preventive Maintenance systems and different dislocated business units, but those implications were not considered here for clarity. Observed behaviour and found discrepancies from standardized procedures are explained next. A solution is proposed next based on a modified model of Multidimensional Preemptive Coordination,
which in this case serves as a monitoring infrastructure to detect deflection from a standard business process and recommend a change or improvement to the modelled process.

The process observation was done at the location of municipal largest road maintenance company during December 2016. The company has six business units and another four that are territorially organized. A total of 977 vehicles and machinery are scattered across all the business units but the majority are organized in the Machinery Business Unit. Such a number of assets justifies the existence of an Internal Repair Workshop as a department. Internal Repair Workshop executed 3472 repairs in the year 2014, 3398 repairs in year 2015 and 3223 in year 2016. The company does not have BPM software tools implemented, but they are ISO-9001 certified, so that the processes are modelled and well documented. As the assets are of great value to the company, costs are meticulously tracked not only by asset, but also by business unit, operator and project. Each defect repair generates a Workshop Order where a number of records are kept: repair hours by type, spare parts, auxiliary material issued from the local warehouse, fuel etc.

A simplified model of the Internal Workshop Order (IWO) process is shown in Figure 1. When the operator or driver detects a defect he comes to the Machinery Business Unit (MBU) Supervisor who issues a Request with the operators description of the malfunction. This step is marked S1 for its later significance. The Workshop foreman opens the IWO and initiates an inspection. The inspection will show whether the defect can be addressed internally or the asset has to be sent to an external repair workshop. In that case, the asset is steered to external destination and a Request is issued to the Procurement department to follow with an Order. If the repair is possible internally, the necessary team of mechanics is assigned and a Request for spare parts and auxiliary material is initiated. The warehouse employee issues the material to the team, repair is performed and final inspection done. If the inspection is positive, the asset is released, the foreman verifies and records working hours, spare parts and auxiliary material used, prepares all the paper documents (the electronic copies are already online) and takes it to the MBU supervisor. The supervisor validates that all the documents are ready for invoicing and releases it to the proper employees. This step is marked S2. The administrator prepares the IWO for invoicing and at the end of the month an internal invoice is issued to the respective business unit.
3. RESULTS

In December 2016 there were 288 Internal Workshop Orders observed. A total of 183 assets, both vehicles and machines were repaired. The assets spent 1176 days in the workshop and a total of 1543 effective repair hours were executed. Each IWO took on average 4.08333 days to finish and included 5.35764 effective hours of work. Some assets had defects more than once and on average, an asset spent 6.42622 days in the workshop and was charged with 5.35764 effective hours of work. The distribution of number of defects per asset is presented in Table 1. The distribution of IWO duration in the period is shown in Table 2.

For the purpose of this discussion, the most important result is that out of 288 Internal Workshop Orders only 68 or 23.61% complied fully with the process model from Figure 1.

Figure 1 Internal Work Order process

<table>
<thead>
<tr>
<th>once</th>
<th>twice</th>
<th>3 times</th>
<th>4 times</th>
<th>5 times</th>
<th>6 times</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>46</td>
<td>31</td>
<td>14</td>
<td>13</td>
<td>15</td>
</tr>
</tbody>
</table>

In December 2016 there were 288 Internal Workshop Orders observed.
4. DISCUSSION

The non-compliance of the order of 76.39% to the modelled process was a surprise, but illustrates perfectly that process modelling often imposes obstacles and constraints in real life situation. It shows why BPM is so demanding and why the adoption is not more swift. Further research revealed that the step marked S1 in Figure 1 (supervisor issuing a Request to open IWO) is often skipped and is done after the fact, after the IWO is closed and should be validated for invoicing. The supervisor’s job is of such nature that he is seldom sitting behind his desk. When the operator / driver comes to get the Request, he is often left waiting for the supervisor to arrive. Each authorized supervisor has his own block of numbered Requests, which are used not only to start an IWO, but also to request provisions and service from other business units, so Request Blocks are not shared. In this situation, the driver / operator goes directly to the Workshop foreman. The Forman either knows the asset and is pretty sure that it is not an unknown vehicle or checks by phone with the head of the source business unit and opens a new IWO. From there on, the rest of the process model is followed consistently. When the order is completed, the Foreman gathers the documentation of all orders completed that day and, at predetermined time, meets with the supervisor (at the step marked S2 in Figure 1) at which point any missing Requests are filled and documentation completed. Although the process model is quite correct, and the Request should precede the opening of the IWO, in practice such sequence of events generates delays and process disruptions.

The monitoring process should be flexible enough to detect new patterns in process behaviour and recommend alternatives or possibly self-tune the model. This paper proposes such a solution based on modified model of Multidimensional Preemptive Coordination. The model was first described by Bacun (2013) and its extension to include participants external to the enterprise (Bacun, 2014). In the next sections, the model is briefly described, then model attributes that support monitoring of business processes even without existent model and lastly implications and level of self-tuning independence is discussed.

4.1. Multidimensional Preemptive Coordination

Multidimensional Preemptive Coordination is problem oriented corporate communications and alert infrastructure based on social networking principles. A group of professionals from different corporate business units gather on a closed corporate social network in an attempt to solve or monitor a business problem. Additional professionals might be invited into the discussion at different times and they post to the Topic News Wall at the altitude they were invited in. A topic is initiated by a Request For Action (RFA). Topic owner sets the deadline by which the problem has to be resolved. The authority to declare the topic as closed lies with the topic owner and that gives the information about the actual duration of the topic. The participants’ upper management is invited into the topic by default which renders both horizontal and vertical transparency. Data overload is avoided with modifiable horizon of visibility that
each participant can tailor to his own needs. At any corporate altitude, the upper management might declare topic visibility mandatory which overrides visibility settings at the lower levels.

Business processes are not constrained to a single business unit and interdepartmental transparency is one of the major issues in BPM implementation. The model of Multidimensional Preemptive Coordination is problem oriented and is insensitive to closeness of a single business unit. The organizational breakdown structure of a single business unit is still observed, and managers at a higher level can still argue the topic, but such interventions are logged in topic history and are transparent to the participants at the same altitude, which increases overall corporate accountability. But this has an important side effect. When such intervention is initiated, all the participants at the same altitude are alerted of a new condition. The alert propagation is governed by the particular topic’s horizon of visibility and not by organizational breakdown structure so different business units will be alerted simultaneously at the proper altitudes. The system keeps track whether a post has been examined by a participant so uninformed participants can receive further notification.

In the business process modelling environment, a Request For Action is to be regarded as a task, one simple BPM element, a business problem that need to be solved. In fact, real business situations imply such sequence of events. In the process described in Figure 1, the Supervisor actually issues a numbered document that is called Request and is supposed to initiate a creation of an internal workshop order. The workshop foreman requests an introductory inspection of the asset to assert further actions.

A RFA has at least two participants: the Sender, who owns the topic, and the Recipient, responsible for work necessary for successful task completion. This implies that there is an implicit direction of the task, from Sender to the Recipient. The request has two distinct parts: a Heading, where task particularities are defined, and a History log, where progress is reported and options argued. The Heading contains request description, the deadline or planned duration and a status. The description and deadline are owned by the Sender and the Recipient cannot change them, while the status can be changed by any participant, signaling others of changed conditions. Only the Sender can declare the RFA resolved, implicitly defining its actual duration. The Sender may invite more participants as observers from any business unit and any corporate altitude, so that they may be able to post comments in the History log and participate in task resolution and progress. They become participants of a closed group of professionals gathered around a business problem and they are simultaneously alerted of new condition posted by any of them. This History log is timestamped and protected from change maintaining an audit trail of the discussion and actions taken. It becomes an effective billboard where selected professionals face problem resolution. The system logs status changes and may post system messages when predetermined conditions, like deadline approaching, are met.
Multiple requests can be chained into a sequence of process tasks creating a thread of events that spans multiple business units. A participant may need assistance from another professional or business unit in which case he would initiate another RFA. In the process model from Figure 1, after initial inspection, the foreman has to decide whether to engage external repair shop if the repair cannot be done internally. In that case he would need to issue a real document named Request to the Procurement Department to order the repair from one of the partners. Alternatively, he would order one or multiple mechanics to do the necessary repairs. In BPM technology we would say that he issued another RFA to his subordinates. In real life both situations can coexist simultaneously. There may be repairs that can be done internally, but particular spare part, or services, might be needed from external sources to repair the asset. This is a fork in a process model, and it is important to recognize the horizon of visibility of each fork. The mechanics who are doing the repair do not need to know who is the employee who handles orders to external partners, the foreman does. The Procurement Department does not need to see particularities that the mechanics are doing daily. However, in the Procurement Department, the received RFA might be routed to a particular employee who will select the partner to perform the external service. This partner might be constrained by Accounting for his financial obligations and payment might be restricted. If such condition implies delay in ordered spare parts or service, this information might be lost in bureaucratic labyrinths. As the workshop foreman initiated original RFA, he would be automatically notified of such development as he owns the thread and is a participant through the thread depth. The new status would be propagated both horizontally in Procurement Department and Accounting and vertically by organizational breakdown structure in both departments. It would further be propagated through the thread, across the departments, ultimately reaching both the workshop foreman and the Supervisor that started the thread, or the business unit that initiated the request to repair the asset.

Tailored views into presented data, personalized for each participant, focus his or hers attention to processes in the relevant scope of visibility and avoid data overload. Each employee can receive and initiate multiple requests. He may be participant of other request threads where he is an observer. His Personal News Wall shows just the posts from RFAs he participates in. At that, he may be invited at different altitudes in each thread. His Personal News Wall will, by default, show only the first depth level of each thread unless upper management declared a particular thread mandatory, in which case the posts from that thread will show compulsory. He can further tailor the Personalized News Wall by selecting date range, participant or particular thread. If a thread is not visible in the selected view, he will still be notified of its status change so he can react if necessary.

4.2. Business Process Monitoring

Linked Requests For Action form an ordered sequence of tasks that define a business process. Each task has a source, the Sender, and a destination, the Recipient. The Sender and Recipient may come from different business units.
Each request has a deadline or duration. The sum of thread durations define the planned duration of the process. Participants record worked hours in the History log. The sum of recorded work hours across the chain of request gives the actual duration of the process.

There is one task in any business process that is the central point of the process, the one that gives the whole process a meaning. In the process described in Figure 1, that is the creation of the Internal Workshop Order. There is a sequence of chained tasks that precede the main task and a sequence that follows. There is always a direction of events that create the IWO and thus define the whole process. Each task is performed by a particular altitude position in the Organizational Breakdown Structure of the corporation. Regardless of who is the actual professional that performs the task, his organizational position reveals the default performer.

We can recognize a business process if we analyse a sequence of RFAs. We can detect a group of RFA that repeat frequently because we have the information of direction, a sequence of events. One Supervisor Request initiates a particular IWO. Another request will instantiate a different IWO. The direction of RFA flow indicates that we have two instances of the same type, the same process and we can apply directed graphs theory. If we recognize the main task we can analyse the chain in both directions, preceding RFAs and following RFAs, and easily discover forks in the process.

The analysis of chained RFAs reveal the default participants. In a business process each Sender and each Recipient belong to a particular organizational unit. The model of Multidimensional Preemptive Coordination recognizes the Organizational Breakdown Structure and participants position in it. Once we recognize which task form a business process, we will know which organizational units will be touched and at which altitude, which leaves interesting possibilities in planning. If a particular task needs additional professionals to be invited as observers, we can easily plan replacements from the same business unit. From RFA History logs we know the frequency of each observer participation in a particular RFA. If an observer was invited only once in 10 instances of a particular task, we may decide to ignore it. Once the starting event is triggered, we know not only the sequence that follows, but also average time it will take, average workforce cost and participants that will need to be invited at a particular time.

The model of Multidimensional Preemptive Coordination solves one of the main challenges of BPM, namely long and complex model development. Enterprises engage teams that analyse and model processes in a number of interviews with the staff. This effort proved to be quite lengthy because team members tend to be employees from IT provenience which have to learn business processes and extract knowledge from the participants. But the processes, optimized or not, are performed actively today and pertinent documents are issued. When an operator comes with a defect, the Supervisor actually writes a paper (it doesn’t matter whether he does it by hand or computer) that is named Request No X, and tells the operator to go with that paper to a particular
employee, in this case workshop foreman, for further action. The foreman will create a paper called Internal Work Order where the sequence of actions will be recorded so that an internal invoice can be issued later. From the BMP point of view, those papers are the same, although their graphical representation and content are different. They have a Sender, a Recipient and a History log. The only thing that is missing is a timestamp and direction capture. We know that the Supervisor is the Sender, because he issued the Request, we only need to capture who should react to the Request, which is the information that the model of Multidimensional Preemptive Coordination captures.

4.3. Self-tuning Process Model

Business process recognition opens possibilities of self-tuning. Once the data of the process is captured analysis is the next logical step. Logging hours worked on particular task will give the total hours per task and the process. This is not extra work for the employees as this information is logged today, as it is basis for weekly or monthly time sheets. The only difference is that time sheets contain both effective and waiting hours, the hours spent in the enterprise. The distinction between effective and waiting hours is meticulously recorded in a number of productive environments, like manufacturing plants. It is mandatory that every driver and every machine operator logs working and waiting hours because maintenance depend strongly on that data. The hours worked per task will have a mean distribution which will suggest optimistic, pessimistic and most likely duration. If the values diverge from the expected values task status can be automatically upgraded and particular participants alerted. Bacun (Apr 2016) described a model of automated risk trigger status change detection based on data collected by Multidimensional Preemptive Coordination. A set of threshold values are attached to each task that update different task statuses when reached in a repetitive evaluation process. Similar principles were use to detect cost trending in construction project schedule activities based on ratio of effective resource consumption against planned quantities of the resource (Bacun, Oct 2016). The ratio of task effective duration up to date compared with expected duration across all the tasks of the process might give insight into the process cost trending.

Self-tuning should be considered as a periodical activity. It is safe to assume that each process would impose different evaluation periods. When divergence from established routes are detected, corrections can be taken. The results section of this paper shows not only the divergence from the process model in Figure 1, but also alternative solution. Although the Request should precede the IWO creation, business practice forces the personnel to adopt a different process route (issue the Request at step S2). If this reality is non-damaging, the evaluation routine could modify the model by introducing a decision stage, a getaway, before step S1. If the Supervisor is reachable then obtain a Request, if not, proceed to Workshop Foreman. Each task has a set thresholds defined that would trigger possible modification of the process. The process owner should decide what percentage of divergences should candidate the process revision. Had there been just 3 occasion when step S1 was skipped,
we would not change the process, but 30 divergences make 10% of all process performances, so it might be significant. The 76.39% suggest that the model is not in accordance with reality, which is one of the most important challenges reported during BPM implementation.

There need be a Referee that would decide whether the process needs to be updated, whether the divergence actually is not damaging. Accepting automatic self-modification of the process might lead to cementing bad practice. After a divergence threshold is reached, the process owner should be notified and presented with alternative routes. Accepting the suggestion initiates the change of process model defaults. Process owner periodic evaluation is a periodic obligation as comparison of default work hours against realized hours will give insight about process bottlenecks and opportunities to improve.

A business process is seldom isolated, it is usually a chain in a larger process. The preventive maintenance process represents a significant financial burden to the enterprise. The regular maintenance of an asset requires the same process as defect detection does. The trigger is just different. The preventive maintenance is triggered by reaching the prescribed number of work hours, or predetermined number of miles driven. The scheduled maintenance have a serious impact on asset availability and hence project supply chain process and transportation process. Process interdependencies can be analysed once BPM data is collected, but data collection has to be blended with everyday business activities so that employees do not feel estranged. The model of Multidimensional Preemptive coordination provides unobtrusive data collecting that introduces self-tuning process modelling opportunities prior to the formal model definition. It presents how the process works at the moment and suggests alternatives resulted from everyday business workflow.

5. CONCLUSIONS

This paper proposes a business process monitoring infrastructure, blended with everyday business activities, that enables model recognition prior than formal model definition, logs alternative routes and lays foundation for refereed self-tuning procedures.

The adoption of BPM has been tenuous despite undisputed economic pressure and undeniable benefits. The process design is challenged by the lack of modelling data and insufficient process detail knowledge. The process programming on the other hand shows frequent program code changes which introduces delays in adoption. The proposed model of Multidimensional Preemptive Coordination confronts successfully both challenges. Process model is easily extracted from the captured data, alternatives disclosed and self-tuning capabilities enabled under referee supervision.

The model captures the direction of process activities as both the Sender and the Recipient are known. The presence of Observers is also logged. Hours worked reveal the performance of each task and overall process. The user login procedure establishes his position in the Organization Breakdown structure which positions the
participants in the corporate arena. These elements are enough to recognize different instances of the same process and hence analyse process compliance and possible alternative routes. Set threshold values of diverged instances trigger self-tuning recommendations.

REFERENCES


CIVIL SOCIETY ORGANIZATIONS INFLUENCE ON THE DEVELOPMENT STRATEGIES FORMULATION PROCESS AT THE MUNICIPAL LEVEL

Original scientific paper
UDK: 347.471
JEL classification: L31, R58

Abstract
This research is aimed at analyzing the rate and mode of Citizens Society Organizations’ (CSO) participation in the process of development strategies formulation in the Central Bosnia Canton (CBC), as well as to measure their impact on the actual substance of development strategies. To get a deeper insight into research topics, a questionnaire was developed and sent out to more than 300 CSOs from the CBC, yielding 117 valid responses. The research results show that 39.2% of the surveyed CSOs participated in the development strategies formulation process in the CBC, where the most common mode of participation was public consultations and debates. The research also revealed that the more proficient CSOs’ contribution to the process is, the greater influence on the development strategy substance they have. The main implication of this research is better understanding of the development strategies formulation process at the municipal level, and a deeper insight into the nature of relationships between municipalities and CSOs in regard to that process.

Keywords: Civil Society Organization, Development Strategies, Municipalities
1. INTRODUCTION

The guiding principles of strategic planning at municipal level are transparency, sustainability and social inclusion. Imperative for the municipal level of government is to act in a transparent manner. Transparency means conducting business in an open, communicative and accountable fashion. It ensures simple and efficient mechanisms of access to information and keeping local community informed on all relevant developments. Sustainability, as a modern phenomenon, is defined as lasting endurance of systems and processes. In this context sustainability is about prudent and responsible management of economic, environmental and social potentials, by local decision makers, so as to ensure adequate living environment for many generations to come. An additional principle that should guide strategic planning at municipal level is social inclusion. Applying this principle to local governments means to interact with all elements of the society, especially marginalized groups, thus providing equal opportunities for participation and benefits for all stakeholders in the local community.

Participatory democracy requires that governments are in constant interaction with citizens and other stakeholders and thus adopt decisions that meet their demands and make the most efficient and effective use of the available resources. Strategic planning at municipal level creates a framework or a guide for proactive and sound decision making process, which should ensure sustainable development of the community.

By increasing the participation of civil society organizations (CSO) and other non-formal civic groups in the process of strategic planning, municipalities increase the probability that the development strategies will better meet citizens’ demands in all areas covered. CSOs in particular have their say in social, environmental and spatial development of municipalities.

In the light of what has been said, the purpose of this research is to analyze interaction between municipalities and CSOs in the Central Bosnia Canton (CBC) in the process of formulating development strategies. Thus, the objectives of the research are as follows:

− to measure the degree of participation of CSOs in the process of formulating development strategies at the municipal level; and

− to analyze what specific characteristics of CSOs make them more influential in the process of formulating development strategies at the municipal level.

The following section reviews the literature related to the strategic planning process in municipalities, and provides an analysis of the framework for strategic planning in CBC. The third section describes the data and methods used in the analysis of empirical data. This section ends with a detailed report about the results obtained. Finally, the study wraps up with some concluding remarks about the study itself and its implications.
2. THEORETICAL OVERVIEW

Having been in use for over 50 years, strategic planning remains one of the key management techniques for anticipating the future and for making decisions in many different organizational environments – business, government, civic and community, etc. Strategic planning is an organizational process of formulating a strategy, where strategy formulation steps are scheduled, tasks are specified, responsibilities are assigned, budgets are allocated, and evaluation mechanisms are put in place (De Wit & Meyer, 2014). Jones and Hill (2009) note that a result of the strategic planning process is a strategy, which represents a direction for making decisions by managers. In other words, strategic planning is about knowing where the organization is heading, how it will reach there and how it will know if it got that end (Web Management, 2015).

Formulating a sophisticated strategic plan is just one part of the story. In accordance with the design school of strategic thought, the strategy planning process consists of five main steps (Mintzberg et al, 1998), where the fifth step comprises strategy implementation. To be successful, an organization must create an appropriate organizational system for both strategy formulation and implementation. That system, nowadays called strategic management (Haines & McKinlay, 2007), must be designed to lead the organization into new territories, to grow, to develop and to change. Growing from formulating strategic plan into strategic management means committing the whole organization into strategic thinking and thus installing mechanism of continuous improvement.

2.1. Strategic planning process in municipalities

The strategic planning process is always a commitment to a particular course of action. In order to make that process work effectively, strategists need to properly use the information at their disposal, through the sound strategic decision making (Hill & Jones, 2013). Strategic planning and formulation of sustainable development strategies at the municipality level represent important aspects of local development (Vele et al, 2016).

Experience suggests that limiting strategic planning to the top of the hierarchy is one of the reasons why strategic plans go unimplemented (Hill & Jones, 2013). As a consequence, the strategic planning process increasingly involves work in groups and teams. For successful planning and decision making in the group, members should be diverse and informed and they should hold independent judgments that are not coordinated in advance (Saaty & Peniwati, 2013). Benefits of the group work include diversity, rich experience base, enhanced organizational memory, error detection, creativity and greater acceptance of decisions and outcomes, (Butterfield, 2012).

Successful strategic planning in municipalities involve partnerships between local government and citizens/citizens groups, which increases potential for solving problems and acceptance of the proposed solutions (Poister, 2010). If a development strategy is produced on these premises, then there is
an increased likelihood that the plan will be accepted by the community and ultimately successfully implemented (Dalal-Clayton & Bass, 2002). In order to achieve this goal, municipalities tend to form small, easily manageable groups, so called steering groups, which meet often and facilitate organization of meetings of the planning committees.

Another very important fact that needs to be taken into account is the fact that decision making in municipalities is influenced by local politics and emotions. Thus, during the environmental scanning stage of the development strategies formulation process, participants should also focus on understanding local dynamics and perspectives, which if integrated increase probability that the plan is accepted and implemented (Agranoff & McGuire, 2003).

2.2. Models and methods of strategic planning for municipalities

Strategic planning in a municipal setting prescribes a systematic process, which enables a community leadership to understand numerous environmental facets that the community will face in future, establishes consensus about how to achieve its most desired vision, and illuminates actions that will most likely make that happen, all within the context of expected financial and human resources (Gordon, 2005). Strategic planning in public sector should not be viewed as an end in itself but merely a tool to improve municipality’s performance and meeting citizens’ demands (Terstegen & Willemsen, 2005).

In the USA, strategic planning at the municipal level, having been in use for more than twenty years (Bryson, 2010), has been characterized by multiple success factors – local promotion of the process, the importance of starting the process with strategic thinking, and the importance of the environmental scan as an application of collective wisdom of participants in describing future as clearly and comprehensively as possible (Gordon, 2005).

Three mostly applied methods of formulating development strategies in municipalities of Bosnia and Herzegovina are as follows:

1) Rights based Municipal Assessment and Planning Project (RMAP)

Method of development planning for municipalities in B&H developed by the United Nations Development Programme (UNDP), which is based on the protection of human rights. According to RMAP, the core driver of local development is economic development, however it is equally important to ensure access to and quality of social services and political representation (UNDP B&H, 2009).

2) Integrated Local Development Planning Methodology (MiPRO)

The MiPRO methodology, developed by UNDP and Swiss Agency for Development and Cooperation (SDC), is a balanced approach to local development planning, which is based on a practical combina-
tion of necessary technical expertise and adequate citizens’ participation (SDC, UNDP, 2011)

3) Municipal Development Planning Committee (MDPC)

Strategic planning methodology developed by the Organization for Security and Co-operation in Europe (OSCE), Mission to B&H. This concept is aimed to install a functional local mechanism for strategic planning in partnership with citizens (“Ugovor” Prospectus, 2005).

2.3. Analysis of the framework for planning and participation in the CBC

The Central Bosnia Canton (CBC) is one of the ten cantons that make up the Federation of Bosnia and Herzegovina. It is located in the central part of B&H, encompassing twelve municipalities. CBC governance structure is made of the Assembly, and the Government with 8 Ministries and the Office of the Prime Minister. Ethnic representation is one of the key characteristics of the decision making system. Municipalities in the CBC enjoy similar competencies to those across FB&H, which are primarily defined by the FB&H Law on principles of local self-governance (FB&H Official Gazette 49/06, 2006). The CBC, similarly to other Cantons in the FB&H, functions within a complex constitutional and legal system. Cantons in the FB&H maintain strong competencies; however in many areas they share their powers with the Entity level of Government. Overall the CBC is regarded as an area with poorer economic conditions in relation to the FB&H average.

2.3.1. Regulatory framework and strategic planning

Civil society organizations (CSO) are popularly defined as nonprofit organizations that work in the arena between the household, the private sector, and the state to negotiate matters of public concern (Forrester & Sunar, 2011). CSOs or civic sector, in addition to governmental and business sectors, make up a tripod of any democratic society. CSOs perform a variety of service and humanitarian functions. In B&H they also deal with sports and culture activities, bring citizen concerns to governments, advocate and monitor policies and encourage political participation through supply of information.

In Bosnia and Herzegovina, the CSO sector is defined by the Law on Associations and Foundations of B&H (Official Gazette B&H 32/01, 2001), and the Law on Associations and Foundations in the F B&H (FB&H Official Gazette 45/02, 2002). According to the FB&H Law on Associations and Foundations, CSO is any form of voluntary association of multiple natural or legal entities for the benefit of advancement and achievement of a common or public interest or goal, in line with the Constitution and Laws, whose primary purpose is not to acquire profit.

Formulating development strategies using strategic planning technique has become a regular practice in many CBC municipalities. Over the
past ten years all municipalities, except two have adopted their development strategies, some even drafted two successive ones. Several methods of strategic planning have been applied in CBC. The process of formulation of development strategies, in a procedural sense, applies the following logic:

1. Adoption of a decision to start the process, and appointment of a team/working group, which runs the process of formulating strategies.
2. Establishment of sectoral working groups.
3. Data collection relating to all programmatic areas that fall under municipal jurisdictions.
4. SWOT analysis, general SWOT analysis or sectoral SWOT analysis, definition of key problems.
5. Definition of the mission, vision and key values.
6. Definition of the strategic goals.
7. Definition of operational plans.
8. Definition of monitoring and evaluation mechanisms.

2.3.2. CSOs in the CBC – situational analysis

In the CBC, CSOs are mainly registered with the Cantonal Ministry of Justice and Governance. This Ministry runs a registry of all CSOs registered at the cantonal level. According to information provided by the CBC Ministry of justice and governance, in 2014 there were 1504 CSOs registered in the Ministry’s CSO Register. CSOs get registered as individual associations, alliances or foundations. Comparing numbers from the official register obtained from the CBC Ministry of justice and governance and contact directories obtained from municipalities, it can be concluded that the number of active CSOs is probably close to half of the official number, or 750, which will be used as the number of the entire population in this research.

The CBC Ministry of justice and governance does not group CSOs based on their preferred field of action. Analyzing names of CSOs, it is broadly recognizable that they are registered in the following thematic areas: sport, culture, rights-based associations, war veterans associations, protection of environment, pensioners associations, associations of professions/professionals, youth and general civic associations. For the purpose of this research, CSOs have been grouped in the categories presented in Figure 1.
3. DATA AND METHODOLOGY

To get a deeper insight into the research topics, an appropriate survey questionnaire, consisting of 15 questions, was developed, and then sent to 305 CSOs from the Central Bosnia Canton, which were randomly chosen from within the whole population of the CSOs.

A total of 117 valid responses (38.36%) were received. Slightly more than a half of the responding CSOs (54.70%) have between 11 and 100 members, while 43.59% have more than 100 members. It must be noted here that only 20% of the responding CSOs employ at least one person on regular basis.

A very important indicator of CSOs’ presence and effectiveness is the project implementation rate. In this regard, the responding CSOs can be grouped into three categories: a) CSOs that barely implement one project a year (26.50%), b) CSOs that implement between 1 and 5 projects a year (51%), and c) CSOs that implement more than 5 projects a year (22%).

Another important indicator for CSOs is the fund securing level. CSOs face big difficulties in securing funding for their operations. More than a half of the responding CSOs (58.97%) have managed to secure less than 10,000 KM annually. However, at the same time, 15.38% of the responding CSOs had a budget of more than 100,000 KM annually.

The estimated population of the CSOs in the CBC is about 750, so the expected statistical error is around 9% (95% confidence level). The responding CSOs are proportionally distributed among different categories and different municipalities from the CBC.
3.1. Results

Data analysis in this research is done for the purpose of meeting two specific objectives:

− The first objective is to test the overall CSOs’ participation in the development strategies formulation process in the CBC at the municipal level.

− The second objective is to test the mode of CSOs’ participation in the process of formulating development strategies.

The participation of CSOs in formulating development strategies in the Central Bosnia Canton at the municipal level amounts to 39.32% (Figure 2). Overall this rate of participation exceeded the expectations and can be assessed as good. The result is even more significant if one takes into account that municipalities entered the process of formulating development strategies for the first time and had no previous experience, not to mention lack of participatory culture in general.

Figure 2 Participation of CSOs in formulating development strategies in the CBC

![Figure 2](image)

Figure 3 Inclusion of CSOs in the development strategies formulation process

![Figure 3](image)
Regarding the mode of “continuous” CSOs’ participation, the CSOs exercised most direct participation through membership in the Municipal Development Planning Commission and through membership in sectoral working groups (21 CSOs or 45.66%). The remaining 54.34% of the CSOs participated through “ad hoc” forms of participation, such as consultations with sectoral working groups and public debates (Figure 4).

![Figure 4 Mode of interaction between CSOs and municipalities](image)

The actual contribution of the CSOs that participated in the drafting process is presented in the chart below (Figure 5). CSOs contributed the most or showed the most interest in defining future-oriented parts of the plan i.e. vision, goals and projects.

![Figure 5 Contribution of CSOs to the development strategies formulation process](image)

Concerning the level of integration of CSOs’ proposals and suggestions into the final version of the development plan, 56.53% of CSOs have had
positive experience, where the majority of their proposals were accepted (Figure 6). Tightly related to this finding is the CSOs’ satisfaction level related to the satisfaction with their own participation in the development strategies formulation process (Figure 7).

![Figure 6 Acceptance of proposals put forward by CSOs](image)

![Figure 7 CSOs satisfaction with their participation in the process](image)

Combined together, the last three findings point to the fact that the more knowledge-based assistance was offered by CSOs, the greater their influence was on the process of strategy formulation.

4. CONCLUSIONS

In democracies, citizens and groups of citizens assume active role in shaping up the development of their communities. In fact it is generally known
that their active participation yields positive effects on the quality of development and well-being of communities. By working together, governments, CSOs, and citizens make better and broadly accepted development decisions. At the municipal level, a functional system of strategic management should therefore encourage a purposeful participation of CSOs.

Results of the research reveal that participation of the CSOs in the process of formulating development strategies in the Central Bosnia Canton (CBC) is 39.32%, which is relatively good, especially since participation of CSOs in the process of public strategies development is not legally obligatory in F B&H. This level of participation is higher than 10%, which has been set as the threshold for significant participation, as per rule of thumb often used in statistical analysis of effect (Field, 2009). Thus it can be concluded that CSOs significantly participated in the process of formulating development strategies at the municipal level in the CBC.

However, as is usually the case, there are two sides to this story, too. Probably the biggest obstacle to a greater and more fruitful participation is the lack of participatory culture, which is beneficial to the operation of CSOs and their participation in the decision making processes. Authorities in B&H have adopted the required legislation which ensures lawfulness of CSO operations. However, in order to have vibrant participatory democracy, both CSOs and authorities need to raise their awareness on the need and importance of having a functional CSO sector.

The research also showed that the mode of contribution of CSOs during the development strategy formulation process matters. Those CSOs that offer more knowledge-based assistance to the process of strategy formulation have eventually succeed in integrating more of their proposals into the final document. The authorities who manage the process of strategic planning should pay more attention to what CSOs are doing and what they can offer. Participation via open call for participation and predetermined criteria, being the most transparent mode of inclusion, has not been used widely enough. This mechanism of inclusion ensures transparency and selection of CSOs that meet the criteria and show interest to contribute to the process.

On the other hand, in order to have purposeful cooperation the CSOs also bear must their share of responsibility. The CSO sector in the CBC has been burdened by excessive fragmentation and a high number of inactive, just formally registered organizations. Those that are active suffer from inability to position themselves as credible partners within the communities, which can offer added value. Participation in the development strategies formulation process should be attractive to CSOs, not because they can only influence projections for the well-being of their communities, but can also influence areas of their interest and improve partnerships with the authorities. Ever since the end of last war in Bosnia and Herzegovina CSOs have been recipients of significant financial and technical assistance. CSOs that wish to see their home community growing should deploy these capacities for the benefit of all.
Obviously there is a lot of room for improvement. CSOs should be regarded as a valuable assets for communities. In fact, the CSOs that use the highest volume of funds through their accounts actually secure those funds mainly through the external/non-municipal sources. This implies that CSOs are good channels for bringing investments into the communities. Even more so, one fifth of the CSOs provide employment for citizens of the CBC. Coupling this and CSOs experience and expertise in dealing with projects highlights a rational need for their inclusion in the strategic planning process within the communities.

4.1. Limitations and suggestions for future research

There are a few different limitations that apply to this research. However, the biggest and most important limitation is that all collected data come from one part of the country only (one canton), so the obtained results could be generalized only for the population from which the sample was drawn.

Thus, in order to validate findings of this research and make it more general, another datasets, from other cantons or, even, other countries, should be obtained and analyzed in the same way.

Beside this validation issue, another particularly interesting extension to this research would be comparative analysis of the success and/or implementation level of development strategies, which are formulated with and without CSOs participation.

REFERENCES


MANAGERIAL SKILLS IN HOTEL INDUSTRY – EVIDENCE FROM CROATIA

Original scientific paper
UDK: 65.012.4:640.4
JEL classification: L83, M54, J24

Abstract

Regardless of the type of organization and management level, the basic task of the manager is to give a prompt and proactive answer to any kind of pressure which is a part of his/her daily business, with the final aim of providing adequate service to customers (clients, consumers, businesses...). Over the decades, the hotel industry has experienced continued evolution by becoming one of the fastest growing industries worldwide. Today, the hotel industry is exposed to dynamic changes and great market heterogeneity, and, therefore, managers in the hotel industry need to be in a constant race for competitive advantage achievements. Among the numerous sources of competitive advantage, managerial skills also stand out because they produce higher value and affect organizational performance. It is well documented that skilful managers are the key determinants of organizational success. Unquestionably, only skilful managers could become effective managers, and effective managers are crucial for organizational success. An effective manager is the one who should have an extensive set of developed skills in all essential areas of managing which, with the company’s growth and progress, become more complex and demand more attention. This paper focuses on the
managerial skills, considering the main skill areas of management. The main aim of this paper is to analyse managerial skills in the Croatian hotel industry, specifically in large hotels in the Split-Dalmatia County. The main research question is: whether the level of managerial skills relates to organization effectiveness - is there a relationship between managerial skills and organizational performance in large hotels in the Split-Dalmatia County? In the light of posed research questions, two hypotheses are settled. Quantitative research was conducted and interesting results were found. To collect data, a questionnaire was used as the main research instrument. Out of 61 questionnaires that were sent, a total of 36 correctly completed questionnaires were used for analyses, yielding a response rate of 59%. Two hypotheses were accepted and the research question positively answered. Results showed that managerial skills are well developed; that organizational performance of large hotels in the Split – Dalmatia County depend on managerial skills in directing them to compete on the market. In addition, the research result pointed out that the effect of communication skill is larger than any other.

Keywords: managerial skills, effective managers, managers in the hotel industry

1. INTRODUCTION

Today’s organizations operate in challenging and uncertain circumstances, consequently, more than ever before, their success or a failure is the result of managers’ ability to adopt their way of managing to contemporary business environments (Bulog, Jukić and Kružić, 2016). When referring to the changes in our environment Whetten and Cameron (2011, p. 26 - 27) argue that there is still something that has remained relatively constant, with minor variations and stylistic differences; something that has not changed over thousands of years. These are basic skills that lie at the heart of effective, satisfying, growth-producing human relationship. Therefore, it doesn’t surprise at all that almost every article or a book targeting topic of management and manager effectiveness stresses the importance of managerial skills for all managers, regardless of the type of organization and level of management.

Due to the great interest of researchers over the last decade, it has been documented in thousands of articles that skilful managers are the key determinants of organizational success (e.g. Bertrand and Schoar 2003; Bennedsen et al., 200; Bandiera et al. 2013; Mullins and Schoar, 2016). Unquestionably, only skilful managers could become effective managers, and effective managers are crucial for organizational success. Management effectiveness and efficiency require managerial skills (Fattah, 1999 in: Mostafa et al., 2012, p. 388). An effective manager is the one who should have an extensive set of developed skills in all
essential areas of managing - from planning and delegation to communication and motivation – which with organization growth and progress, become more complex and demand more attention (Bulog, Jukić and Kruzic, 2016).

The topic about managerial skills has for a long time attracted the attention of many scientists and practitioners. Their focus was usually on strategic management level since it has been empirically confirmed by many researchers that strategic managers are a critical and vital resource for company success due to the significant influence they have over strategic decisions on the organization’s overall success on the market.

This paper prioritizes the managerial skills of top management in the hotel industry considering eight essential skill areas of management where managers should focus their energies: understanding team dynamics, selecting and developing the right people, delegating, motivating, managing conflict, communicating, decision making and problem solving, and avoiding common managerial mistakes (Bulog, Jukić and Kruzic, 2016). These are people – oriented skills. Why the hotel industry? Over the decades it has experienced continued evolution by becoming one of the fastest growing industries worldwide. The hotel industry represents significant business within global frameworks and modern development trends (Pavia et al., 2014). Managerial skills are not industry or firm specific, but they may become because of the unique combination of managerial skills that each organization holds (Carmeli and Tishler, 2006, p. 18).

Much research focused on managerial skills has documented that there is a positive connection between organizational performance and well established skills for managing people (Whetten and Cameron, 2001). Managerial skills are viewed as being of fundamental importance for improved managerial performance and effectiveness as the whole (Analoui et al., 2000). As Carmeli and Tishler (2006, p. 18) stress “it is not so much the particular skill that each of the managers possesses, but rather how they complement one another to affect firm performance”.

The main objective of this paper is to analyse the development of managerial skills at strategic management level in the Croatian hotel industry, specifically targeting large hotels in the Split-Dalmatia County. The main research question is: whether the level of managerial skills relates to organization effectiveness - is there a relationship between managerial skills and organizational performance in large hotels in the Split-Dalmatia County? This research contributes to the literature on management and leadership.

2. MANAGERIAL SKILLS

Organizations, just like humans in every aspect of their life, need to grow and develop to survive in the current environment. For organizations, this requires mastering many types of managerial skills. Managerial skills are parts of managerial competencies (Smutny et al., 2016). Managerial competences are
explained through competence models which usually include various abilities, skills, knowledge, personality features, attitudes and other characteristics individually tailored. Competences at an individual level influence the effectiveness of the entire organization (Cardy and Selvarajan, 2006; Analoui, 1999 in: Smutny et al., 2016). This paper is focused on managers who hold a formal managerial position and on their skills, but not on the other variable of their competencies mentioned here.

Management skills identify abilities or behaviours that are crucial to success in managerial positions (Hunsaker, 2001). When considering managerial skills, one thinks about the set of behaviours that direct the manager to better job performance. The term “skill” refers to the ability to do something in an effective manner (Yukl, 2002). Managerial skills are defined by Katz (1974) as a manager’s ability to transform information and knowledge into practice. They are seen as the building blocks upon which effective management rests (Whetten and Cameron, 2011, p. 30). Whetten and Cameron (2011) differentiate managerial skills from other kinds of managerial characteristics and practice by defining their various characteristics: behavioural; controllable; developable; interrelated and overlapping; contradictory or paradoxical.

When it concerns the typology of managerial skills, several authors have identified skills that effective managers should possess (e.g. Katz, 1974; Christensen et al., 1978; Koontz and Weirich, 1988; Castanias and Helfat, 1991; Mumford et al., 2000; Whetten and Cameron, 2001; Yukl, 2002; Montel et al., 2004; Carmeli and Tishler, 2006). The most common classification of managerial skills was conducted by a great mind in management - social psychologist Robert Katz (1974). He was the first who provided a typology of managerial skills by identifying three types of skills: technical, human and conceptual with regard to the skills’ importance for successful management. He actually set the foundations for the skill research area. All typologies that were developed after were the product of researchers’ conscious awareness that there are some other managerial abilities or behaviours that are also critical to organizational success, e.g. team building, delegation, motivation, goal setting etc. Recent developments in this field point to the presence of three paramount and overlapping categories of managerial skills that play a crucial role towards increasing managers effectiveness in both private and public sector organization (Analoui et al., 2000): task-related; people –related and self-related.

Since the responsibilities of managers have become more demanding and sensitive due to the increase of environmental complexity, effective managers should have an extensive set of developed skills in all essential areas of managing. By developing and upgrading them over time they would increase efficiency of their organizations. In this paper, authors decided to analyse eight essential skill areas of management on which managers should focus their efforts (Bulog, Jukić and Kružić, 2016): understanding team dynamics, selecting and developing the right people, delegating, motivating, managing conflict, communicating, decision making and problem solving, and avoiding common managerial mistakes. These skill areas are explained in Table 1.
Table 1

<table>
<thead>
<tr>
<th>Managerial skills</th>
<th>Explanation</th>
</tr>
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<tbody>
<tr>
<td>Understanding team dynamics and encouraging good</td>
<td>Be aware of the diversity regarding personality, abilities, relationships, and perspectives of team members, and pilot those differences in a positive direction.</td>
</tr>
<tr>
<td>Selecting and developing the right people</td>
<td>Have good recruitment skills, because selecting and developing the right people is a basic requirement for achieving organizational effectiveness.</td>
</tr>
<tr>
<td>Delegating effectively</td>
<td>Delegating the tasks to the right people and clearly outlining the expectations determine success of the managers themselves and the company overall.</td>
</tr>
<tr>
<td>Motivating people</td>
<td>Motivation skills are essential for high performance employees who will, through high job satisfaction, achieve valuable and meaningful individual and organizational goals, and thus contribute to the overall business results.</td>
</tr>
<tr>
<td>Managing discipline and dealing with conflict</td>
<td>Managers must discipline the members of the team trying to facilitate a resolution or avoid destructive conflict between employees if they want the company to progress.</td>
</tr>
<tr>
<td>Communicating</td>
<td>Effective communication skills are essential to organization success because the level of communication effectiveness leads to more or less successful objectives achievement.</td>
</tr>
<tr>
<td>Planning, making decisions, and problem solving</td>
<td>These activities, done properly or slovenly, can make a great difference not only to individual managers’ careers, but also to the organization position on the market.</td>
</tr>
<tr>
<td>Avoiding common managerial mistakes</td>
<td>It is imperative to learn how to recognize and avoid common mistakes that managers make because this help manager to become more successful and productive, and consequently, their company can benefit.</td>
</tr>
</tbody>
</table>

Source: Adopted from: http://www.mindtools.com

These skill areas of managing are the key skills needed if the manager aspires to individual and organizational effectiveness. These skills fall into the category of people-related skills and they must be developed and improved on an ongoing basis as managers encounter new challenges or opportunities when leading/managing people.

3. MANAGERS IN HOTEL INDUSTRY

The global hotel industry is changing rapidly and continuously, therefore, it is necessary for a hotel’s management to adjust to those changes (Vrdoljak and Bukvic, 2004). Cerović (2003) classifies hotel types according to their size, completeness of the provided service, location and global market orientation. The size differentiates small hotels up to 100 beds, medium to 300 beds and large with over 300 beds. In large hotels, the managers are the head of departments (e.g. reception, household, food and beverage, accounting and other) who are also the most responsible personnel who manage the hotel’s daily business (Hayes and Ninemeier, 2005).
The hotel manager sets the goals, creates a strategy and establishes the business policy of the hotel. He or she makes decisions, contracts, organizes, allocates, creates teams, delegates, motivates, cares for the advancement of associates, and manages financial and other resources (space, equipment, time, people, money...). Furthermore, if s/he wants to be effective, s/he needs to control the accomplishment of each goal and the performance of each task; needs to provide information about business, and encourage economic and technological development (Sambol, 2008). The overall effectiveness would be accomplished in his/her work if s/he manages all essential areas of management.

Cerović (2003) states that managers in the hotel industry in regards to other economic sectors must be: more entrepreneurial, more imaginative, more prosperous, more persistent and more patient. They always need to be at guests’ disposal in order to satisfy their needs due to the fact that, in the tourism industry, the guest is always right. Another feature of the hotel business is the exposure to constant changes that need to be confronted. More than in any other industry, the manager in the hotel industry must have developed skills in all essential areas of management. Galičić and Simunic (2006) state that hotel management needs to adopt new principles and new management trends in order to fit more efficiently into international tourism streams. For the purpose of a successful response to current market trends, in hotel management the main task is in mastering numerous knowledge and abilities such as: understanding managing change; ability to lead in the dynamic and unpredictable circumstances; ability to manage complex organizational structures; inventiveness and initiative in terms of technological progress; management and use of increasingly complex information-communication systems; managing human potentials etc.

4. METHODOLOGY

This study attempts to contribute to the better understanding of the importance of managerial skills. The main objective of this paper is to analyse the development of managerial skills at strategic management level in the Croatian hotel industry, specifically targeting large hotels in the Split-Dalmatia County.

The main research question is: **whether the level of managerial skills relates to organization effectiveness - is there a relationship between managerial skills and organizational performance in large hotels in the Split-Dalmatia County?** The main objective of this paper is to analyse managerial skills in the Croatian hotel industry, specifically in large hotels in the Split-Dalmatia County. In the light of the literature discussed in previous sections and the above posed research questions, the following hypotheses are suggested:

**H1 - The managerial skills possessed by managers in the hotel industry are well developed.**

**H2 - The managerial skills possessed by managers have a significant positive effect on organizational performance.**
Our survey was conducted among large hotels in the Split-Dalmatia County in the year 2017 (January and February). To collect data, a questionnaire was used as the main research instrument. Questionnaires were mailed electronically to the strategic managers. Out of 61 questionnaires that were sent, a total of 36 correctly completed questionnaires were used for analyses, yielding a response rate of 59%. Previous studies indicated that top managers are a reliable source of information (O’Reilly at al., 1993; Miller et al., 1998 in: Carmeli and Tishler, 2006). With the aim of encouraging managers to participate, two commitments were made: first (1) that their participation is anonymous, and (2) the results of empirical research would be delivered to them, which they can use for evaluation and further improvement of their managerial work.

The questionnaire consisted of three parts. The first part considered some demographic characteristics of managers: age, gender, education and tenure. The second contains questions about people-related managerial skills considering eight areas of managing: 1) understanding team dynamics, 2) selecting and developing the right people, 3) delegating, 4) motivating, 5) managing conflict, 6) communicating, 7) decision making and problem solving, and 8) avoiding common managerial mistakes. Managers were asked to answer the questions from the current position to the current state, meaning that, for each statement, they chose the answer that best described him/her. There were 2 – 3 questions/statements for each managerial skill category.

The third part was dedicated to organizational performance. In the literature, organizational performance has been operationalized in a variety of ways. Some authors used subjective measures (manager’s perception) while others used financial data. Research has found measures of perceived organizational performance to correlate positively with objective measures of firm performance (Dess and Robinson, Jr, 1984; Dollinger and Golden, 1992; Powell, 1992 in: Delaney and Huselid, 1996). This research considered three perceptual measures of organizational performance which target three levels of performance: financial, market and operating (according to: Kaynak, 2003). These measures are: a) profit; b) market position and c) quality of services their hotel provides. In this part of the questionnaire, respondents were asked to give responses to the proffered statements according to a Likert’s scale with five levels of intensity, ranging from “I strongly disagree” to “I strongly agree”. Collected data were evaluated using the SPSS 23.0 and Microsoft Excel software. Data were analysed using both descriptive and inferential statistics.

5. FINDINGS

The sample included predominantly female managers (61.1%), with a university degree (44.4%) (see Figure 1). This is a little bit surprising, but positively. This is actually in line with the results that show that the rate of women in management positions in Croatia is on the rise, but they are still significantly under-represented in comparison to male managers. Perkov et al. (2016) encouraged the inclusion of women in management structures as being
of high significance to modern tourism organizations if they wish to survive, grow and develop, because in that way, they will gain the necessary diversity of leadership styles and approaches to management.

Managers are mainly young people. One third of the sample are managers who are not older than 40 (77.8%). A part of managers have been in their current positions between 0 and 5 years (50%). Thus, it can be concluded that managers were introduced on their positions (high ones) very early in their career. Just a small part of managers (2%) have earned their current position with considerable years of experience.

![Figure 1 Main characteristics of managers in the sample](source: Research results)

Due to the characteristics of contemporary business environment of the hotel industry and rapid technological achievements that are part of everyday business activities, young people, because of their education backgrounds, can progress in their careers faster and more easily. Namely, their knowledge comes to the fore – it is much needed if organizations want to be up to date.

Table 2 presents the descriptive statistics of the main variable in this study - managerial skills. As shown in the table, all managerial skills are showing...
a great level of appearance (from 4 to 5). By analysing each managerial skill area, it can be seen that managers’ communication skills are the most developed which amounted to 4.97; while the skill of avoiding common mistakes is somewhat less developed and amounted to 3.97. Communication skill, which is the most developed, is of great importance for managers in the hotel industry, since as a team leader and as a hotel leader, the hotel manager must always be at guests’ disposal. S/he needs to have well developed communication skills because s/he and his/her team are always in direct contact with guests. In addition to all the other skills, s/he has to be able to listen and to accept customer feedback and advice, listen actively, speak, talk, communicate.

Among the most developed skill areas are also team building skills, selecting and developing right people and managing conflict (means were above 4.5). Areas in which managers should focus their attention and efforts are: motivation and decision making (means were under 4.5).

Overall, it can be concluded that managers in this research sample possess all eight managerial skills and that each is well developed. Thus, Hypothesis 1 can be accepted.

### Table 2

<table>
<thead>
<tr>
<th>Index</th>
<th>Managerial Skills</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Std. D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS1</td>
<td>Understanding team dynamics and encouraging good relationships</td>
<td>4.64</td>
<td>5.0</td>
<td>5</td>
<td>.593</td>
</tr>
<tr>
<td>MS2</td>
<td>Selecting and developing the right people</td>
<td>4.53</td>
<td>5.0</td>
<td>5</td>
<td>.506</td>
</tr>
<tr>
<td>MS3</td>
<td>Delegating effectively</td>
<td>4.25</td>
<td>4.0</td>
<td>4</td>
<td>.649</td>
</tr>
<tr>
<td>MS4</td>
<td>Motivating people</td>
<td>4.00</td>
<td>4.0</td>
<td>4</td>
<td>.862</td>
</tr>
<tr>
<td>MS5</td>
<td>Managing discipline and dealing with conflict</td>
<td>4.61</td>
<td>5.0</td>
<td>5</td>
<td>.549</td>
</tr>
<tr>
<td>MS6</td>
<td>Communicating</td>
<td>4.97</td>
<td>5.0</td>
<td>5</td>
<td>.167</td>
</tr>
<tr>
<td>MS7</td>
<td>Planning, making decisions, and problem solving</td>
<td>4.25</td>
<td>4.0</td>
<td>4</td>
<td>.554</td>
</tr>
<tr>
<td>MS8</td>
<td>Avoiding common managerial mistakes</td>
<td>3.97</td>
<td>4.0</td>
<td>4</td>
<td>.736</td>
</tr>
</tbody>
</table>

*Source: Research results*

In addition, it was interesting to see whether there was any difference in developed managerial skills when considering the gender variable. Concerning gender differences, Table 3 reveals that somewhat equally managerial skills are developed among men and women managers. But, it also could be noticeable, when it comes to skills of delegating and motivation, that the mean difference was a little bit higher in favour of men and when considering managing conflict skill the mean difference was a little bit higher in favour of women. Results are interesting, but since women dominated the research sample, it is hard to give some objective arguments for the explanation of these differences.
Table 3

Mean values of managerial skills according to gender

<table>
<thead>
<tr>
<th>Index</th>
<th>Managerial Skills</th>
<th>Men (Mean)</th>
<th>Women (Mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS1</td>
<td>Understanding team dynamics and encouraging good relationships</td>
<td>4.60</td>
<td>4.68</td>
</tr>
<tr>
<td>MS2</td>
<td>Selecting and developing the right people</td>
<td>4.60</td>
<td>4.55</td>
</tr>
<tr>
<td>MS3</td>
<td>Delegating effectively</td>
<td>4.50</td>
<td>4.14</td>
</tr>
<tr>
<td>MS4</td>
<td>Motivating people</td>
<td>4.50</td>
<td>3.64</td>
</tr>
<tr>
<td>MS5</td>
<td>Managing discipline and dealing with conflict</td>
<td>4.40</td>
<td>4.64</td>
</tr>
<tr>
<td>MS6</td>
<td>Communicating</td>
<td>5.0</td>
<td>4.95</td>
</tr>
<tr>
<td>MS7</td>
<td>Planning, making decisions, and problem solving</td>
<td>4.30</td>
<td>4.23</td>
</tr>
<tr>
<td>MS8</td>
<td>Avoiding common managerial mistakes</td>
<td>4.00</td>
<td>4.14</td>
</tr>
</tbody>
</table>

Source: Research results

Hypothesis 2 focused on the relationship between managerial skills and organizational performance among large hotels in the Split-Dalmatia County. The results about interdependence between managerial skills and organizational performance are interesting and somewhat puzzling. To test the hypotheses, a correlation test was conducted. Table 4 reveals only significant results. As shown in the table, results of correlation analysis show a statistically significant interdependence among seven managerial skill areas with one or more organizational performance measures. Only one managerial skill showed that there was no interdependence with any of the organizational performance measures. Namely, only for managing conflict skill a statistically significant correlation was not determined. This might be due to communication skills that are highly developed and therefore conflict situations are not so pronounced.

Highly significant results were found for the interaction of the five managerial skills with organizational measure - quality of service (p<0.01). The intensity of those relationships is very strong (values of correlation coefficients were above 0.4). All other, previously mentioned connections are significant, but on the lower level of significance (p<0.05). Overall, the results revealed partial support for Hypothesis 2.
The interdependence between managerial skills and organizational performance

<table>
<thead>
<tr>
<th>Spearman’s rho Correlation coefficient; Sig. (2-tailed); N = 36</th>
<th>P</th>
<th>MP</th>
<th>QS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS1</td>
<td></td>
<td>.372*</td>
<td>.562**</td>
</tr>
<tr>
<td>MS2</td>
<td>.343*</td>
<td>.025</td>
<td></td>
</tr>
<tr>
<td>MS3</td>
<td></td>
<td>.562**</td>
<td>.000</td>
</tr>
<tr>
<td>MS4</td>
<td>.453**</td>
<td>.006</td>
<td></td>
</tr>
<tr>
<td>MS5</td>
<td></td>
<td>.426**</td>
<td>.010</td>
</tr>
<tr>
<td>MS6</td>
<td>.360*</td>
<td>.039</td>
<td>.518**</td>
</tr>
<tr>
<td>MS7</td>
<td></td>
<td>.518**</td>
<td>.001</td>
</tr>
<tr>
<td>MS8</td>
<td>.386*</td>
<td>.020</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research results

Notes: *p<0.05; **p<0.01 - only significant value are shown

Only one managerial skill (communication) is positively related to all three measures of perceived organizational performance. With the first two measures (profit and market position) results revealed statistically significant correlation with positive direction, but slightly weaker intensity compared with the third measure (quality of service) which is of strong intensity. Also, positive and statistically significant correlation with two measures of organizational performance was determined when analysing two managerial skill areas (team building and motivation). Therefore, it can be concluded that each managerial skill has a different effect on organizational performance.

Overall, the results revealed that the people-related managerial skills variables examined in this survey are very important for organizational performance of large hotels.

6. CONCLUSION

Skilful managers are of crucial importance for organizational success because of contemporary business external environment characteristics. Regardless of organization type, it is undisputable that managerial skills, viewed as a part of managerial overall competencies, influence organizational effectiveness.
Acceptance of the two hypotheses of this paper and positively answered research question empirically validate that the above statements also apply to the hotel industry in Croatia, specifically on large hotels in the Split- Dalmatia County. Results showed that managers in the research sample possess all eight managerial skills and that each is well developed. Among the most developed skill areas are: communication, team building skills, selecting and developing right people and managing conflict. Areas in which managers should focus their attention and efforts are: motivation and decision making. Partial acceptance of the second hypothesis indicates that there is a statistically significant interdependence among the seven managerial skill areas with one or more organizational performance measures. Only the managerial skill of managing conflict showed the interdependence with none of the organizational performance measures. In addition, research results pointed out that the effect of the communication skill is larger than any other. Namely, it is more related to organizational measures than any other.

Overall, it can be concluded that the organizational performance of large hotels in the Split – Dalmatia County depends on the managerial skills in directing them to compete on the market. Hotels need to develop them in order to survive in the contemporary business environment. This requires mastering many types of managerial skills. Managerial skills can be learned and gained by training; therefore managerial skill training needs to be an important part of managers’ education.

The limitations of this study and suggestions for future research are closely linked. Undeniably, future research may reduce the limitations. This research can be upgraded into several directions in order to get a more detailed and complete picture about managerial skills development in the hotel industry in Croatia. Future research in this area would benefit from studies aimed at increasing the sample to more easily achieve generalization of the research conclusions. It would also be valuable to make a comparison between the hotel and other industries in Croatia; to compare the hotel industry in other regions of Croatia as well as to compare the hotel industry in Croatia and other countries in the region. The importance of managerial skills should also be discussed in relation to the external environment variables since it is acknowledged that organizational functionality depends on the conditions of the external environment.

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Abstract

Work teams are labelled “emotional incubators” because of the ubiquitous emotion generated as team members work together. Although this emotion affects team processes and effectiveness, little theory or research has provided practical information about how teams can manage emotion so that it supports, rather than hinders, team effectiveness. To solve this problem, we draw on social psychological theory suggesting that emotion in teams primarily comes from whether team members’ social and emotional needs (i.e., belonging, shared understanding and control) are satisfied by the team. We then present a study conducted with teams in six U.S. based (four global) companies, testing the relationship...
between six emotionally intelligent team norms aimed at satisfying team member needs. We hypothesize that incorporating these six norms will lead to high levels of team effectiveness through their influence on the emergence of a productive social and emotional environment (i.e., team psychological safety and team efficacy). Hypotheses are primarily supported. Our study contributes to current knowledge about human social and emotional needs and the influence of emotion and its management on team effectiveness.

**Keywords:** teams, effectiveness, emotional intelligence

1. **INTRODUCTION**

Since the earliest days of team research, scholars have understood the ubiquity of emotion in teams and its influence on team motivation and effectiveness (Barsade & Gibson, 1998; Homans, 1950; Menges & Kilduff, 2015; Steiner, 1972). Although emotion in teams ranges from unpleasant (e.g., anger and fear) to pleasant (joy and thrill), the specific emotion is not as important as its effect on team member interactions and collaboration (Smith & Berg, 1987). Because emotion is contagious in teams (Barsade, 2002), its influence on team member interactions spreads quickly and fuels either unproductive feedback loops of poor collaboration, and lower effectiveness, or productive feedback loops of pro-team collaboration, and higher team effectiveness (see Lerner, Valdesolo, & Kassam, 2015; Lindsley, Brass & Thomas, 1995). Unfortunately, downward spirals that generate lower levels of collaboration are more powerful and longer lasting than upward (Baumeister, et al., 2001). In this paper, we present and test theory aimed at helping teams manage their emotion in the direction of building productive social and emotional environment that supports pro-team collaboration and strong team effectiveness.

Team emotion management is defined as the team’s influence over the emotions members experience in the team (Druskat, Wolff & Truninger, 2017). Just as a person’s effective self-management of emotion leads to higher quality social interactions (Lopes, et al., 2005), effective team-management of emotion leads to higher quality team interactions and processes (Huy, 1999). Teams that do not manage their emotion suffer from what Steiner (1972) branded “irrational bends in direction,” which create less collaboration and “process losses” (Steiner, 1972, p.9).

We propose that team emotion management is best carried out through the development and enforcement of a set of **emotionally intelligent norms**. These norms create a team culture that satisfies the social and emotional needs of team members considered to be the greatest triggers of emotion in team environments (see Clark et al., 2004; Fiske, 2014; Hareli & Parkinson, 2008). Specifically, we present hypotheses about the relationship between six emotionally intelligent team norms and a productive social and emotional environment, defined as
including team psychological safety and team efficacy, which we propose to facilitate team effectiveness. We test our hypotheses with work teams conducting a variety of interdependent tasks in six US based companies, four of which are global companies.

2. **CAUSES OF EMOTION IN WORK TEAMS**

   Emotion is defined as the personal display of relatively intense affected or agitated feeling states (e.g., joy, love, contentment, fear, anger, or embarrassment) accompanied by physiological changes; it is differentiated from feelings, which involve awareness of the arousal and from moods, which are longer in duration (Fineman, 1991, p. 546). Emotions are highly evolved signals that provide information about events (or anticipation of events—rooted in past experience) in one’s environment; the sensation of emotion demands attention (Archer, 2004). Emotions are meant to move us and to do so, they affect attitudes, cognitions, and behavior (Elfenbein, 2007). They can disrupt valuable time in a team, or, if managed well, can facilitate pro-team collaboration. Relevant to our thesis in this paper is the finding that emotions also have predictable and recognizable antecedent causes (George, 2002).

   Emotion pervades teams, in part, because every human interaction evokes emotion (Fiske, 2014; Kemper, 2000) and interactions are the basic building blocks of teamwork (George, 2002). But, a deeper reason has recently been highlighted in theory and research— the chief triggers of emotion in teams are unconscious (or subconscious) social needs aroused when humans enter groups (see Clark et al., 2004; Fiske, 2014; Hareli & Parkinson, 2008). A review of the literature identified three primary social needs: belonging, shared understanding and control (see Druskat, Wolff & Truniger, 2017). The need to belong is defined as the desire for secure interpersonal relationships that provide acceptance as an inimitable team member, not easily replaced (Hornsey & Jetton, 2004). The need for shared understanding is defined as the desire to make accurate sense of the social situation by comparing the team’s current reality with other team members, it improves team members ability to predict and control their destiny in the team (Fiske, 2014). The need for control is defined as the desire to influence one’s own future (Shapiro, 2010) and has long been considered a primary trigger of emotion in teams (Hare, 1976).

   Team members vary in the level of social need satisfaction they desire, but social needs are considered atavistic and universal (Leary, 2007). Their satisfaction (or lack of) triggers emotion that prioritizes and focuses attention and behavior toward gaining their satisfaction. When satisfied, they facilitate well-being and help a team member thrive in the team’s environment (Pittman and Zeigler, 2013). Evidence suggests that at one time social needs aided human survival by prioritizing and motivating behavior that secured group inclusion and the security it provided (Levine and Kerr, 2013). Today humans continue to scan environments to determine their level of social needs satisfaction and this still generates the majority of emotion in group environments (Fiske, 2014).
focuses behavior, and rewards a person with pleasurable emotion when needs are satisfied (see Sterling, 2012).

Social needs theory and research adds value to theory on emotion in teams by supporting ideas long been discussed by social psychologists – that emotion is not solely intrapersonal phenomena and emotion management need not begin and end with individual cognitions, states temperaments and skills (Clark, Fitness, & Brissette, 2004; Van Kleef, 2009). For example, Zajonc (1998) repeatedly argued that emotions were primarily social phenomena. Before him, Heider (1958) beseeched social scientists to remember how easily they might overlook the critical influence of the social situation on emotion and behavior. Thus, if emotion is created by the “interplay of person and situation,” (see Fiske, 2014: 14), emotions in teams can be managed by developing a situation that satisfies team member social needs. As described below, we propose that team cultures (as created by team norms) that satisfy the social needs of team members, build a productive social and emotional environment that facilitates team effectiveness.

3. EMOTIONALLY INTELLIGENT TEAM NORMS

A number of scholars have drawn from emotional intelligence theory to advance thinking about managing emotion in teams (see Jordan & Troth, 2004). Emotional intelligence (EI) is the individual ability to perceive and express emotion, assimilate emotion in thought, understand and reason with emotion, and regulate emotion in oneself and others (Mayer, Caruso, & Salovey, 2000). Scholars have suggested several ways that EI could influence emotion management in team environments (Côté, 2007; Elfenbein, 2007). Some propose that team members with EI assist teams in managing emotion and that the greater the number of team members with EI, the better a team’s emotion management (George, 2002, Jordan & Troth, 2004). Others argue that relying on the EI of individual team members is not enough to cultivate and sustain emotion management in teams and that it is preferable to manage emotion through team norms that build a productive social and emotional environment (Gantt & Agazarian, 2004; Huy, 1999). Team norms are informal rules that teams adopt to regulate and make member behavior predictable (Feldman, 1984). We agree with this latter group.

We define team emotional intelligence (Team EI) as a set of team norms that build a productive social and emotional environment that leads to constructive interactions and team effectiveness (see Druskat & Wolff, 2001). Team EI norms help manage emotion in the team environment by satisfying team member primary social needs Norms are team-level constructs. Team EI norms, like all team norms, are team-level constructs, however they specify expectations about the three levels of interactions that occur in team environments: (1) individual interactions that occur between team members, (2) Team interactions that occur among the team as a whole, and (3) cross-boundary interactions that occur between team representatives and external stakeholders.
We propose that Team EI norms lead to the emergence of a productive social and emotional environment that facilitates team effectiveness. Before presenting the six specific Team EI norms and our hypotheses, we first define a productive social and emotional environment, team effectiveness, and their link.

4. A PRODUCTIVE SOCIAL AND EMOTIONAL ENVIRONMENT AND TEAM EFFECTIVENESS

We propose that Team EI norms will produce a productive social and emotional environment that consists of two team motivational states that facilitate team effectiveness: (1) team psychological safety (Edmondson, 1999, Frazier et al., 2017) and (2) team efficacy (Gibson & Early, 2007). Team motivational states are cognitive and affective states that emerge from patterns of team member interactions (Marks, Mathieu, and Zaccaro, 2001). Although motivational states are dynamic, they remain fairly stable in teams with strong norms (Mullen & Cooper, 1994). We use Hackman’s (1987) definition of team effectiveness as multidimensional and including: objective team performance and team viability, or the team’s ability to continue performing well in the future.

4.1. Team Psychological Safety

Team psychological safety is a team-level cognitive and affective state defined as the degree to which the social climate in the team is conducive to taking interpersonal risks (Edmondson 1999). Willingness to take interpersonal risks improve team learning and effectiveness by facilitating question-asking, feedback seeking, and the discussions of problems or mistakes (Edmondson 1999). Since these behaviors enable a deeper level of openness and analysis, it is no wonder that safety has been found to be related to team member engagement (Kahn 1990) and team innovation (Burningham & West 1995). Team psychological safety motivates meaningful team interactions, processes, and performance (Frazier, et al., 2017).

Hypothesis 1: Higher levels of team psychological safety will be associated with higher levels of team effectiveness.

4.2. Team Efficacy

Team efficacy is a team-level cognitive and affective state through which members perceive that their team can and will perform effectively (Park, Spitzmuller, and DeShon, 2013). Gibson (1999) suggests that team efficacy grows out of team member interactions focused on the acquisition, organization, and exchange of information about each other, and about the team’s task context, process, and past performance. Such interactions permit the development of a
shared sense of the team’s potential. Team efficacy emerges when members are collectively confident that, together, the team has the skills and motivation to perform well. This generates team decisions and behaviors that aid team goal achievement (Gibson and Early, 2007).

Hypothesis 2: Higher levels of team efficacy will be associated with higher levels of team effectiveness.

5. **EMOTIONALLY INTELLIGENT TEAM NORMS**

Behavior in teams is structured through norms, defined as standards or informal rules adopted by team members to make member behavior in the team predictable (Feldman 1984; Stryker & Statham 1985). Team norms emerge from member interactions that actively create expectations about how members should behave and work together (Bettenhausen & Murnighan 1985). Norms structure the patterns of behavior that influence a team’s level of effectiveness (Hackman 1987). We present a model of six specific norms we refer to as Team EI norms because they satisfy team member social needs for belonging, shared understanding and control and, therefore, produce a productive social and emotional environment (i.e., emergent states of team psychological safety and team efficacy) that support team effectiveness. Below we present six Team EI norms and hypothesize their links to productive social and emotional environment (i.e., team psychological safety and team efficacy.)

5.1. **Interpersonal Understanding**

The first Team EI norm we present is *interpersonal understanding*. It encourages behavior that seeks members to develop an accurate and shared understanding of team member talents, preferences, and needs. Actions taken to understand team members must be ongoing (i.e., exist as norms) because team member’s lives are dynamic. This norm requires a team to continually seek opportunities to build a more accurate understanding of members. Members must take the time to ask each other about evolving needs, foci, and goals. A norm of interpersonal understanding helps satisfy members’ social needs for belonging and an accurate understanding of one another. Team members experience a greater sense of belonging when they feel themselves to be known as unique and distinctive members (Brewer, 1991). Research shows that team members who feel their teammates know and understand are more creative and reliable than members who do not feel known or understood within their team (Thatcher & Greer, 2008). McAllister (1995) showed that interpersonally attentive behavior within a team helps build trust and perceived safety, which leads to increased knowledge sharing and cooperation (Larkey 1996; Rousseau, et al., 1998). We offer the following hypothesis:

Hypothesis 3: Higher levels of a norm of interpersonal understanding will be associated with higher levels of team psychological safety.
5.2. Confronting Members Who Break Norms

A team norm of confronting members who break norms enables management and control of member behavior. It encourages constructive feedback and candid feedback for member’s whose actions disturb team operations. The norm helps build the emotional capability and capacity (i.e., the willingness to deal with difficult emotion, see Holmer 1994) to cope with the difficult feelings that might result from candid feedback. Teams that ignore inappropriate member behavior in an attempt to avoid conflict decrease their ability to influence team member behavior and gain a sense of control over the team. Murnighan and Conlon (1991) found that members of successful string quartets confronted rather than avoided problematic member behavior. When done skillfully, confronting members who break norms builds trust and safety in the team by promoting honest, trustworthy, predictable behavior, which increases team effectiveness (Campion, Medsker, & Higgs, 1993).

A norm of interpersonal understanding that facilitates member’s understanding of one another can also improve and make easier team members’ ability to effectively confront members who break norms. The better team members know and understanding each other, the more easily and effectively they can confront one another when norms are broken (Druskat & Wolff, 2001). Therefore, we offer the following hypotheses:

Hypothesis 4: Higher levels of a norm of confronting members who break norms will be associated with higher levels of team psychological safety.

Hypothesis 5: The strength of a team’s norm of interpersonal understanding will be positively associated with its norm of confronting members who break norms.

5.3. Team Self-Evaluation

A team norm of team self-evaluation promotes shared team understanding about the team and builds in opportunities for continuous team improvement. It encourages behavior that seeks awareness of team-level strengths, needs, preferences, and resources. Through practice, it helps build the emotional capability to address the discomfort or anxiety that often accompanies evaluation. A norm of team self-evaluation encourages the surfacing and evaluation of routines or habits that may be compromising team effectiveness. Evaluating the “status quo” is a prerequisite for team development and team effectiveness (Gersick & Hackman 1990). The self-correction and improvement that can come out of a norm of team self-evaluation also helps build a team’s sense of efficacy and stimulates team effectiveness by encouraging behavior that makes team efficacy self-fulfilling (Gibson & Early, 20007; Lindsley, Brass et al. 1995). Thus:

Hypothesis 6: Higher levels of a team norm of team self-evaluation will be associated with higher levels of team efficacy.
5.4. Proactive Problem Solving

A team norm of proactive problem solving helps satisfy team members’ need for control by facilitating more control over a team’s future. It encourages acknowledging challenges in a “can-do” way. It helps the team plan ahead and think proactively when problems occur, rather than rigidly or reactively, as so often occurs in human systems (Staw, Sandelands, & Dutton, 1981) and thus builds the team’s sense of efficacy. Research links proactive planning to team effectiveness (Ancona & Caldwell 1992).

The emergence of a norm of proactive problem solving is facilitated by a norm of team self-evaluation. Team member reflection and discussion of their team’s strengths and weaknesses leads a team to think and plan proactively about its future. We offer the following hypotheses:

**Hypothesis 7:** Higher levels of a team norm of proactive problem solving will be associated with higher levels of team efficacy.

**Hypothesis 8:** The strength of a team’s norm of team self-evaluation will be positively associated with its norm of proactive problem-solving.

5.5. Organizational Understanding

A team norm of organizational understanding addresses team member social need for shared understanding of the organizations broader context and how it affects the team. The norm encourages behavior that seeks information from the larger organization and that attempts to understand the needs, preferences, perspectives, and behaviors of important individuals and teams outside of the team’s boundary. Such behavior helps the team learn the conceptual frameworks and language used by important organizational members, a crucial step toward building networks of external relationships (Tushman & Scanlan 1981) that provides information, resources, and support from the larger organization (Ancona & Caldwell 1992; Yan & Louis 1999) and develops a team’s sense of efficacy and control over its future. Therefore, we offer the following hypothesis:

**Hypothesis 9:** Higher levels of a team norm of organizational understanding will be associated with higher levels of team efficacy.

5.6. Building External Relations

A team norm of building external relationships addresses team member social need for control over the team and its outcomes. It encourages actions that build relationships with individuals and teams that can help the team achieve its goals, which have been linked to a team’s sense of efficacy and team outcomes (Yan & Louis 1999). Research specifically reveals that team effectiveness is highest in teams with strategies that involve engaging and working with colleagues in the larger organization to acquire information, resources, and support; effectiveness and the team’s sense of control and confidence is lowest in teams with non-aggressive and non-existent external boundary strategies (Ancona 1990; Ancona & Caldwell 1992). As discussed above, it makes
sense that teams who develop a norm of organizational understanding will be more likely to build a norm of going the next step and developing external relationships. We offer the following:

**Hypothesis 10:** Higher levels of a team norm of building external relationships will be associated with higher levels of team efficacy.

**Hypothesis 11:** The strength of a team’s norm of organizational understanding will be positively associated with its norm of building external relationships.

Figure 1 displays our hypotheses and the full model we tested.

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**6. METHOD**

**6.1. Study Participants and Setting**

The sample was drawn from six organizations located in the Midwestern United States, including four Fortune 1000 firms. Diverse industries were represented including industrial and consumer goods manufacturers, financial services, transportation, and product design and development. The average number of teams per organization was 20.7 with a range of 8-40. Teams had a mean of 11.95 team members (Range = 4-29; Median = 8). Our full sample
consisted of 905 respondents representing 145 teams from six organizations. However, we were only able to obtain objective performance data for 119 of the teams (despite our best efforts to negotiate the need for good objective data prior to data collection, some organizations did not have objective data that could be broken down by specific teams). We received subjective effectiveness data from managers of 112 of the 119 that provided objective performance data. Our final sample included 109 teams (as described below, three teams were dropped for low participation rates) for which we had both objective and subjective effectiveness data. Of the team members in the final sample, 26% had high school degrees, 36% had some college or technical school, 19% had college degrees, and 9% had graduate work or degrees. Average company tenure was 7 years and team tenure was 2 years. Age was fairly evenly distributed, with 16% under 25 years of age, 31% between 26 and 35, 21% between 36 and 45, 23% between 46 and 55, and 7% over 56 years of age. More than half (61%) was female.

6.2. Data Collection

Employees were invited to participate in a volunteer study about “how teams work,” and were assured that their responses would be kept confidential. Questionnaires were distributed by one of the authors during regular working hours at each organization and collected by the same author upon completion. Only one person declined participation. For various reasons (e.g., travel, illness) several employees were not present for data collection. We used a 50% member participation rate as our cut off for including a team in the study. We dropped three teams from the study because their participation was less than 50%. For the 109 teams included in the study, team member participation ranged from 50% to 100% (mean = 73%; median = 70%).

Emotionally intelligent team norms. Scales measuring the six Team EI norms were developed and pretested using two sections of graduate students in an MBA program. In the present study, interpersonal understanding was measured with four items, e.g., “On our team there is a clear sense of knowing and understanding each other.” Confronting members who break norms was measured with five items, e.g., “In our team we will inform a member if his or her behavior is unacceptable by team standards.” Team self-evaluation was measured with four items, e.g., “On our team we often discuss what is helping or hurting our performance.” Proactive problem solving was measured with four items, e.g., “In our team we work hard to anticipate problems that might occur.” Organizational understanding was measured with four items, e.g., “Members in our team have good insight into how decisions are made by our professors.” Building external relations was measured with five items, e.g., “We build relationships with teams that can help make a difference in our performance.” All constructs were measured using 7-point Likert scales ranging from 1 (Very Inaccurate) to 7 (Very Accurate), with some items reverse scored.
**Emergent motivational states.** Team psychological safety was measured using three items from Edmondson’s (1999) scale, e.g., “It is safe to take a risk on this team.” Team Efficacy was measured with three items used by Druskat and Kayes (1999), e.g., “Our team would deliver outstanding performance on any task.”

**Team effectiveness.** Effectiveness was measured through two sources: (1) objective performance data for each team and (2) subjective performance ratings completed by the manager of each team. To measure objective performance, we asked contacts in each company to provide us with the metrics they used as the most important and accurate indicators of team performance. Examples of these include: number of defective parts; percentage of production goals met; percentage of revenue goals met, and turn-around times. We felt that some companies set goals that were easier to attain than others, thus we chose to standardize the metrics within companies. Objective performance for each team was then recorded as performance relative to all other teams in their company. Objective performance data was collected for a mean of 8.6 months (SD = 1.9; Mdn = 10; Range = 6 to 10 months), including a mean of 4.14 (SD = 1.68) months of performance data after questionnaire administration (Mdn = 4; Range = 3 to 7 months).

For the subjective performance measures, the manager responsible for each team was sent a rating form one month after team questionnaires were complete. (On average 2.25 later; Range = 1 to 4 months.). The form asked managers to provide an evaluation of their team on four dimensions using a 7-point Likert scale format: Team product quality, performance compared to other teams, the team’s viability (i.e., ability to continue working together effectively in the future). Responses were tallied to produce a mean subjective effectiveness rating for each team.

7. **RESULTS**

7.1. **Descriptive statistics, validity and reliability**

Data were analysed using SPSS 17 and LISREL 8. There were less than 0.2% missing data and these data can be considered completely random; thus, we imputed these values with SPSS missing value analysis using the Expectation Maximization method for imputation. After imputation, we used intraclass correlations (ICCs) (Shrout & Fleiss 1979) to test whether individual data could be aggregated to obtain team-level variables. Since between-team variance significantly exceeded within-team variance for all factors, aggregation was appropriate (F<sub>108,785</sub> >1.5, p<.001) (Rousseau 1985). Descriptive statistics and ICCs are shown in Table 1.
Table 1 Descriptive Statistics, Reliabilities, ICCs and Correlations (n=109)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
<th>SD</th>
<th>ICC1</th>
<th>ICC2</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interpersonal Understanding</td>
<td>4.72</td>
<td>.53</td>
<td>.11***</td>
<td>.45***</td>
<td>(.75)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Confronting Members</td>
<td>4.38</td>
<td>.70</td>
<td>.17***</td>
<td>.58***</td>
<td>.31**</td>
<td>(.73)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Team Self-Evaluation</td>
<td>4.47</td>
<td>.59</td>
<td>.14***</td>
<td>.54***</td>
<td>.32**</td>
<td>.45***</td>
<td>(.73)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Proactive Problem Solving</td>
<td>4.72</td>
<td>.57</td>
<td>.07***</td>
<td>.34***</td>
<td>.65***</td>
<td>.40***</td>
<td>.55***</td>
<td>(.78)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Organizational Understanding</td>
<td>4.64</td>
<td>.65</td>
<td>.16***</td>
<td>.57***</td>
<td>.61***</td>
<td>.36**</td>
<td>.40***</td>
<td>.71***</td>
<td>(.71)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Building Relations</td>
<td>4.78</td>
<td>.62</td>
<td>.14***</td>
<td>.52***</td>
<td>.64***</td>
<td>.41***</td>
<td>.62***</td>
<td>.77***</td>
<td>.65***</td>
<td>(.82)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Team Efficacy</td>
<td>4.97</td>
<td>.72</td>
<td>.18***</td>
<td>.61***</td>
<td>.58***</td>
<td>.28*</td>
<td>.56***</td>
<td>.75***</td>
<td>.54***</td>
<td>.72***</td>
<td>(.76)</td>
<td></td>
</tr>
<tr>
<td>8. Team Psych. Safety</td>
<td>4.80</td>
<td>.65</td>
<td>.16***</td>
<td>.56***</td>
<td>.69***</td>
<td>.27*</td>
<td>.25*</td>
<td>.70***</td>
<td>.73***</td>
<td>.63***</td>
<td>.62***</td>
<td>(.77)</td>
</tr>
<tr>
<td>9. Team Effectiveness</td>
<td>-.01</td>
<td>.78</td>
<td>--</td>
<td>--</td>
<td>.32**</td>
<td>.06</td>
<td>.14</td>
<td>.28*</td>
<td>.21*</td>
<td>.26*</td>
<td>.41***</td>
<td>.27*</td>
</tr>
</tbody>
</table>

Note. a Numbers in parentheses along the diagonal represent Cronbach’s alpha for the scales. These were calculated using unaggregated data (n=905).

The intraclass correlation (ICC) statistic (Shrout & Fleiss, 1979) tests whether variance in member responses between teams significantly exceed the variance within teams. Significant coefficients support aggregation of individual responses to team-level constructs. These were calculated using unaggregated data (n=905).

*p<.1. **p < .05. ***p < .01. ****p < .001.

We next analysed our hypothesized global model (Figure 1) using Structural Equation modelling (SEM) with LISREL 8.72. Table 2 shows the estimated correlations among the constructs of our global model. However, the norms and the two emergent motivational states (team psychological safety, and team efficacy) showed multi-collinearity to a great extent (for example among the states, r = 0.708). To address this issue, Bentler and Chou (1988) suggest splitting the model so the hypotheses can be tested. Consequently, we ran three separate models (see Figure 2), one for each level – individual, team and cross-boundary. This subdivision model specification strategy avoids collinearity problems and also leads to a less complex model, which is more appropriate for our relatively reduced sample size.

Table 2

Bivariate correlations among the latent factors

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Team Effectiveness</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Team Psych. Safety</td>
<td>0.423</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Team Efficacy</td>
<td>0.598</td>
<td>0.708</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Building Relations</td>
<td>0.443</td>
<td>0.745</td>
<td>0.741</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Org. Understanding</td>
<td>0.477</td>
<td>0.804</td>
<td>0.799</td>
<td>0.927</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Proactive Problem Solving</td>
<td>0.514</td>
<td>0.830</td>
<td>0.860</td>
<td>0.859</td>
<td>0.927</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Team Self Evaluation</td>
<td>0.353</td>
<td>0.529</td>
<td>0.591</td>
<td>0.684</td>
<td>0.738</td>
<td>0.710</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Confronting Members Who Break Norms</td>
<td>0.213</td>
<td>0.467</td>
<td>0.356</td>
<td>0.413</td>
<td>0.446</td>
<td>0.502</td>
<td>0.548</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>9. Interpers. Understanding</td>
<td>0.441</td>
<td>0.878</td>
<td>0.737</td>
<td>0.795</td>
<td>0.858</td>
<td>0.867</td>
<td>0.521</td>
<td>0.517</td>
<td>1.000</td>
</tr>
</tbody>
</table>
7.2. Measurement Model

As required, we first tested the fit of the measurement model. We tested the global measurement model’s fit using Confirmatory Factor Analysis (CFA) with Maximum likelihood estimation. The model included the six norms from the three levels, both emergent motivational states and team effectiveness. Because we first pruned the items with low reliability from the original questionnaire (Druskat & Wolff, 2001). Table 3 shows that the loadings of each item on its associated norm. The global fit indexes for the global measurement model are relatively high and the unidimensionality (the assumption of local independence) cannot be rejected for each norm using the Chi-square test associated with the maximum likelihood estimation.

Table 3

<table>
<thead>
<tr>
<th>Team Effectiveness</th>
<th>Team Psych Safety</th>
<th>Team Efficacy</th>
<th>Organizational Understanding</th>
<th>Proactive Problem-Solving</th>
<th>Team Self-Evaluation</th>
<th>Confronting Members</th>
<th>Interpersonal Understanding</th>
<th>Building Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.000</td>
<td>0.692</td>
<td>0.882</td>
<td>0.717</td>
<td>0.751</td>
<td>0.745</td>
<td>0.899</td>
<td>0.781</td>
<td>0.630</td>
</tr>
</tbody>
</table>
Although our sample size was reduced (109 teams), the magnitude of the loadings and the parsimony of the measurement models (individual, team, and cross-boundary) (Saris, Satorra & Van der Veld, 2009) lead to relatively high power, which allowed us to trust the Maximum Likelihood (ML) estimation criteria and common goodness of fit indexes. However, since our data violates the hypothesis of Multivariate Normality we have used the Satorra-Bentler (1988) Chi-square scaled test as the first global fit index in addition to RMSEA, its p-value of close fit and its confidence interval as well as CFI. However, to avoid what Kline (2005, p.321) labelled “Fit index tunnel vision” (which is tantamount to looking at indexes of overall model fit and discarding other types of information on fit), we paid more attention to the detailed diagnosis of the residuals, to the estimates, and to the detection of misspecification errors rather than global fit (see Saris et al., 2009 for an extension). The strategy used by Saris and his colleagues (Saris et al., 2009) also takes into account the power of the test rather than using recipes from manuals based only on statistical significance. Using this test procedure, no misspecifications in the measurement model were detected.

Reliability is usually computed as Cronbach’s alpha (α; Cronbach, 1951) on the assumption that items are at least tau-equivalent (e.g. Bollen, 1989: 215-216). We did not reject the unidimensionality of our items within each norm, but we rejected the loadings equality and the equality of the measurement error variances. So, likely our estimates of the reliability are negatively biased, i.e., our estimate is likely lower than the actual value and thus it is conservative. The estimates of the global reliabilities per construct are shown in

7.3. Tests of Hypotheses

As mentioned above, the hypotheses were tested specifying the structural model for each level. Chi-square change and other goodness of fit indexes of these three structural models do not exhibit significant changes in comparison with the measurement model and the detailed diagnoses do not provide any suggestion of misspecification errors (Saris et al., 2009). Since all models tested represent a reasonably good fit and no presence of misspecification errors, we can proceed to interpret the tests of our hypothesis.

Figure 2(a) illustrates the model for individual team member norms. The estimates of the effects support Hypotheses 1, 3, 4, and 5. These results support Hypothesis 1, which focuses on the positive effect of team psychological safety on team effectiveness. Our data show a significant correlation (r = .517) between interpersonal understanding and confronting members who break norms supporting Hypothesis 5. Since Hypothesis 5 is supported, to estimate the individual effects of each norm on team psychological safety we estimated the effects of the individual norms separately by specifying only one norm at a time in the model. Results also corroborate Hypotheses 3 and 4, namely, both individual norms have positive effects on team psychological safety.

1 Due to collinearity among individual norms (r=0.517) we have estimated the effects of the individual norms on safety separately by specifying only one norm at a time in the model: Interpersonal Understanding or alternatively only Confronting members Who Break Norms.
At the team level only team efficacy is specified in the model tested. Results from Figure 2(b) corroborate Hypothesis 2, which predicts a positive effect of team efficacy on team effectiveness. Regarding team norms – Hypotheses 6 to 8 – the path diagram of Figure 2(b) shows that our data support Hypothesis 6 and 7, that is, the team’s norms of team self-evaluation and proactive problem solving positively affect team efficacy. Since we find also support for Hypothesis 8 concerning the correlation between the team’s norm of team self-evaluation and the team’s norm of proactive problem-solving (r = .710), to estimate the individual effects of each norm on efficacy we estimated the effects of the team norms separately by specifying only one norm at a time in the model (similar to our statement in Footnote 1).

Finally at the cross-boundary level the path diagram of Figure 2(c) shows that Hypotheses 10 and 11 are clearly supported by our data, i.e., first, the strength
of a team’s norm of building external relations is high (standardized coefficient = .818) and positively related to team efficacy; and the magnitude of the correlation between the team’s norm of organizational understanding and the team’s norm of building external relations is the highest of any path coefficient (.884).

To summarize, our study findings support our fundamental premise that Team EI Norms account for a great extent of the variability in the development of the emergent motivational states used to measure a productive social and emotional environment ($R^2$ at any level ranges from 67% to 82%). which in turn predicts more than 29% of the variance in team effectiveness at each level.

8. CONCLUSIONS

Overall, study findings supported our proposal that Team EI norms are related to the development of a productive social and emotional environment (i.e., psychological safety and team efficacy), which in turn predicts team effectiveness. These findings also reveal that Team EI supports team effectiveness. However, a longitudinal study is necessary to verify causality in the relationships among the norms and between the norms and the emergent motivational states.

We did not find our hypothesized positive relationship between confronting members who break norms and team psychological safety. It may be that confronting members diminishes safety within the team. Providing difficult feedback, even if it is constructive, so that it can be heard without harming members’ sense of safety is not easy and must be skillfully done. We were not aware of any of the teams we studied receiving training on how to provide constructive feedback. Moreover, when sharing the results of our study with the participating organizations, managers consistently mentioned that their team members were not comfortable providing one another with feedback. Indeed, confronting members who break norms had the lowest mean of all the norms studied ($\bar{x} = 4.38$, S.D. = .70).

8.1. Implications for Theory and Practice

Our study makes a number of contributions to theory and research on team effectiveness. Scholars have consistently discussed the tendency for researchers to discuss team emergent states, such as team psychological safety and trust, as if they can be commanded (Kelly & Barsade, 2001; Marks et al., 2001). Few group researchers have examined the behaviors and norms that underlie the emergence of these productive social and emotional states that motivate team outcomes. Our research provides important information about how productive social and emotional states like team psychological safety and team efficacy emerge. Team norms are an important, though understudied, influence on team emotion, environments, behavior, and outcomes.

Our study results also support our idea that specific emotionally intelligent Team EI Norms account for significant variance in predicting a
productive social and emotional team environment and team effectiveness. Another contribution made by this research is the support it provides for the idea that emotion influences team effectiveness. It is well known that emotions are “integral to the work of work teams” (Barsade & Gibson, 1998). Research on emotion in teams and in particular on the environmental influence of emotions in teams has recently increased (see Menges & Kilduff, 2015). We hope our study encourages more research on the relationship between team norms and productive social and emotional team environments.

8.2. Limitations and Directions for Future Research

A strength of our research was the quality of our team effectiveness data. At the same time, a weakness was that norm and emergent motivational state data were collected in the same survey. As discussed above, causal relationships cannot be inferred unless data is longitudinal. Future research should take the time to test some or all of our causal predictions longitudinally.

Future theory and research should also examine in greater detail the link between confronting members who break norms, team-level emergent motivational states and team effectiveness. This research might seek to differentiate effective from problematic confrontation and then identify the norms and behaviors that best support feedback that changes behavior, builds learning and relationships, and facilitates team effectiveness. Future research might also test whether an intervention focusing on developing skills in giving and receiving effective feedback influences the relationship between confronting members who break norms, team psychological safety and team effectiveness.

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CONTEMPORARY LEADERSHIP CHALLENGES IN HOSPITALITY ORGANIZATIONS IN TIMES OF UNCERTAINTY AND CHANGE

Abstract

Traditional approaches to leadership in the hospitality industry are becoming less and less effective in engaging, empowering and energizing its workforce of today, especially when taking into account the growing complexity of the contemporary world and its associated political, cultural, economic and environmental dimensions. As the importance of hiring a highly motivated and educated workforce becomes paramount in creating a competitive organization, it is imperative that hospitality providers implement the best leadership styles in order to boost employee satisfaction and retention. Addressing a dearth of information in the literature, the purpose of this paper is to provide exploratory research regarding the most effective leadership approaches employed by front-line managers in hotels operating in volatile environments; those hotels, for example, that are located in highly seasonal locations. Front-line employees at ten Dubrovnik, Croatia hotels, hotels operating in a highly seasonal environment, were surveyed as to the leadership styles of their respective employers and their accompanying levels of overall job satisfaction. Additionally, distinct demographic profiles associated with observed leadership styles were identified. The results indicate that managers use a combination of transformational and transactional leadership. Contradicting some previous studies, seasonal workers were not found to be less satisfied than full-time workers, were not more
satisfied in a Transactional versus transformational environment, and did not express higher levels of job satisfaction as associated with length of employment. The results of this study offer an insight into how to form and foster a strong hospitality corporate culture that is ready to offer new value in volatile environments.

**Keywords:** contemporary leadership styles, employee satisfaction, hospitality industry

1. **INTRODUCTION**

   “Without involvement, there is no commitment. Mark it down, asterisk it, circle it, underline it.” --Stephen Covey

   The hospitality industry of today is under the influence of the growing complexity of the contemporary world and its associated political, cultural, economic and environmental dimensions. In this highly competitive yet volatile business environment hospitality firms have to find a way how to differentiate themselves by offering consistently superior service and unique experience (Kim, Tavitiyaman & Kim, 2009, p.369).

   As stated by Clark, Hartline and Jones (2009, p.210), even when all the standards of recruiting and training are secured, there is a lot of variance in front line employees’ performance. And front line employees are directly accountable for creating personal and unique service quality.

   The purpose of this paper is to provide exploratory research regarding the most effective leadership approaches employed by front-line managers in hotels operating in volatile environments; those hotels, for example, that experience extreme seasonality.

   There is a body of research suggesting that employees in hospitality tend to be less satisfied and more prone to switching careers due to demanding work load, high stress, lack of job security (high seasonality) and long working hours (Back et al, 2011, p.111 and Furnham, 2006, p.27). In their research on quality of life of front-line employees Lee, Back and Chan (2015, p.768) found out that in order to meet multiple needs of employees there has to be an understanding of the importance of positive interactions between the employer and employees as well as recognition and appraisal systems within the organization.

   Since job satisfaction (JS) has become an important aspect in business today of one’s workplace attitude, the hospitality industry has to investigate the causes of both high and low JS and how to improve it. The fact that hospitality employs not only full-time but also part-time employees further complicates the issue of JS. Research conducted by Wilkin in 2013 suggests that JS is contingent on the type of employment and that it varies within the same category as well. The study suggested that part-time workers do experience lower JS and that that, in turn, causes lower task performance and higher turn-over (Wilkin, 2013, p.64).
When focusing on part-time employees, including seasonal employees, terms such as “nonstandard workers” or “contingent workers” are to be found in literature (Wilkin, 2013, p.48; Dickson, 2009, p.166). It is worth mentioning the findings of the Dickson (2009, p.174) study relating to nonstandard workers who have been with the same company for more than just a season – the results show that they possess higher JS.

Numerous studies stress the importance of creating a motivated, happy and well-provided for workforce that in turn will create more value to the customer; thus, turning the customer into a more loyal, profitable and committed guest (Heskett, Sasser & Schlesinger, 1997; 2003; Garlick, 2010, p.304). Since service quality in hospitality is revealed through moments of truth, front-line employees and their perception of JS have become a very important organizational concern.

The hospitality industry is operating in a highly uncertain environment and the need to investigate the leadership influence on JS poses itself as critical under those circumstances (Rothfelder, Ottenbacher and Harrington, 2012, p.202).

The authors of this paper claim that traditional approaches to leadership in the hospitality industry (or “doing it as we used to”) are becoming less and less effective in engaging, empowering and energizing its workforce of today. The time is ripe for change in how we lead, influence and develop a strong workforce. And when we talk about introducing change, everything starts from “the head”: leadership practices.

1.1. Leadership Styles

The first in depth studies related to leadership were conducted by Burns (1978) where he defined the two elementary types of leadership: transactional and transformational leadership. Taking into consideration that this initial research was published over 39 years ago, one searches for and finds more recent research which confirms the original ideas, showing them to still be valid (Hinkin & Schriesheim, 2008, p.513). Additionally, using the original ideas proposed by Burns, Bass (1985) concluded that transactional and transformational leadership styles are inter-connected and that they are the prerequisite for each other. He argued that a good leader should have characteristics of both leadership styles to be an effective leader. Next to transactional and transformational leadership there is also a third leadership style called non-transactional or laissez-faire (Bass, 1985).

The transactional leadership model has been described as being a sanction and reward model where the leader communicates the need and the compensation for doing that need. In the case of good performance the subordinate is rewarded in a material or non-material way, whereas bad performance is punished in the form of a sanction that is portrayed as a consequence of said performance (Burns, 1978; Bass, 1985, 1997; Erkulutlu, 2008, p.709). According to Bass (1985, 1997) there are three components of transactional leadership:
contingent reward; management by exception (active); and management by exception (passive). Continent reward relates to having strict group or individual goals which need to be met and the associated performance will result in a reward or sanction. Contingent reward is focused on the transaction between the leader and subordinate. Active management by exception relates to having a leader who actively overviews his subordinates and intervenes with sanctions when goals and performance levels are no met. Passive management by exception relates to the leader not intervening until big problems occur (Bass, 1997).

Bass (1997) firstly argues that transactional leadership can lead to mediocrity if a leader intervenes only when subordinates are not working according to standards and procedures. Secondly, he believes that a leader who uses a transactional leadership style will use threats to make his employees perform up to a standard; this method is ineffective in the long run and likely to be counterproductive. Thirdly he concluded that the sanction and reward method primarily depends upon the ability of the leader to influence subordinates. Also, if a leader does not have the complete freedom to carry out those threats or promises, he loses credibility.

Transformational leadership has also been defined and assessed by many different researches (e.g. Travis, 2007; Bass 1985, 1997; Xenikou & Simosi, 2006, p.566; Davidson, 2003, p.50). The overall research background on this topic reveals that there are four elements of transformational leadership: charismatic leadership; individual consideration; intellectual stimulation; and idealized influence (Bass, 1997). Inspirational motivation (or charismatic leadership) is an important factor in transformational leadership because the subordinates tend to identify with the company goals and vision if the leader is enthusiastic and positive. Individual consideration is focused of the needs, wants and emotions of every single employee while supporting and leading them towards exemplary performance (Den Hartog et al. 1997, p.30). Intellectual stimulation occurs when the leader engages and challenges subordinates to deal with work problems by themselves; in this way employees get more engaged with the organization. Idealized influence focuses on emphasizing that the group’s needs come before the needs of the individual (Tims et al. 2011, p.122). In research conducted by Xenikou & Simosi (2006, p.577) it was claimed that transformational leadership has a positive impact on employee performance.

The third leadership style is called non-transactional or laissez-faire. This leadership style occurs when there is no actual leadership present. It happens when the leader avoids taking responsibility, lacks in communication, and does not provide any kind of support to his subordinates (Bass, 1997). According to Bass (1997) and Avolio et al. (1999) this leadership style can be viewed as a part of transactional leadership because it has some components directly related to it. Throughout this research this leadership style will be viewed as a separate style.
1.2. Leadership Styles and Job Satisfaction

Leadership style has to be linked with effectiveness in order to prove its organizational value. As Erkutlu (2008, p.708) rightfully pointed out, effectiveness can only be measured through outcomes produced for the intended audience. In this study the authors chose to assess one aspect of leadership effectiveness; namely, subordinate satisfaction with leadership style and work conditions.

In a study issued by Cornell University in 1994, the authors claim that the transactional (or the so called classical management) style was favorable and welcomed when the economy was stable, when the competition was weak and when the customer demands could be predicted with certainty (Tracey and Hinkin, 1994). The hospitality industry of today has lost some (if not all) of the above mentioned criteria; thus, making transactional leadership style not capable of meeting the demands of the current hospitality business environment. Moreover, the nature of challenges has changed as well and is not only external but internal to the organization as well (Tracey and Hinkin, 1994).

In a more recent study, Erkutlu (2008, p.708) studied the relations between the leadership style and organizational effectiveness thus supporting the suggestion in the literature that transformational leadership stimulates organizational commitment and job satisfaction in the hospitality industry of today. An interesting result emerged from Erkutlu’s paper pertaining to the comparison of foreign owned and locally owned boutique hotels. The results suggest that the managers of foreign boutique hotels in Turkey were using transformational leadership more than the managers of domestic boutique hotels (Erkutlu, 2008, p.725). The author presupposes that the different approach had to do with the perception of the Turkish hospitality industry as either unstable or stable; owners with a less stable perception of the industry would want a transformational style utilized.

The European Union recognized Croatia as a destination with great potential and a great need for specific leadership education to meet the needs of a changing and unstable environment (Ministry of Tourism, 2013).

Previous research that focused on Dubrovnik tourism supports the need for specific leadership and management education to deal more efficiently with the complexity of the hotel industry as such (Dulčić & Raguž, 2006, p.1162; Raguž, 2007, p.57). Dulčić’s and Raguž’s (2006, p.1162) report on leadership style suggests the usage of consultative leadership style (p.6) while Raguž (2007, p.68) indicates the need for a more adaptable leadership style that would serve better the individual characteristics of managers as well as the needs of employees and guests.

The above research produces the following four hypothesis for this paper:

\[ H1: \] employees in general (considering the whole sample) are more satisfied in a transformative leadership environment than a transactional one.
H2: seasonal workers are less satisfied than full-time employees.

H3: seasonal workers who have been with a hotel for a longer period of time (more than two years) are more satisfied than those who have worked with a hotel for a shorter period of time (less than two years).

H4: seasonal workers employed in a transactional environment are more satisfied than those working in a transformational environment.

2. METHODS

This paper seeks to determine leadership styles utilized in hotels operating in highly seasonal locations as well as the associated levels of employee job satisfaction. Specifically, this paper examines the environment under which reception desk employees, perhaps the front-line position with the greatest exposure to guests, act.

Dubrovnik, Croatia, with its highly seasonal tourism industry, was selected as the appropriate location as an area of study. Dubrovnik’s tourist visitation numbers paint a telling picture. In January 2016, for example, Dubrovnik had 25,726 overnight stays while in the middle of its high-season on July 31, Dubrovnik had 721,572 overnight stays (Turistička zajednica Grada Dubrovnika). Likewise, an examination of cruise ship arrivals to Dubrovnik reveals that 14,786 passengers arrived in March of 2016 as opposed to 124,481 arriving during the peak month of August same year (Lučka uprava Dubrovnik).

Matching the seasonal tourist flow, many of Dubrovnik’s hotels are seasonal, closing during the off-season. In order to gain a broad perspective of the subject matter, both seasonal and non-seasonal (open all year) hotels were surveyed. Additionally, hotels categorized as three, four, and five stars were included in the study. A total of 67 employees working in ten hotels were surveyed. The research was conducted from April to May 2017. The surveys were administered via two approaches: the paper’s authors distributed the paper surveys in person to the respondents and the hotel itself distributed the paper survey (not allowing the researchers to do so).

Survey participants were requested to complete a three part survey: an adapted version of the Multifactor Leadership Questionnaire 5X (MLQ 5X) questionnaire that queried front desk employees as to their supervisors’ leadership styles; a modified version of the Minnesota Satisfaction Questionnaire (MSQ) that inquired as to job satisfaction of front desk employees; and demographics, including mode of employment (seasonal or full-time) and time spent with the current employer (hotel) of the front desk employees.

The MLQ is widely recognized as being a valid and reliable instrument for evaluating transformational, transactional, and laissez faire leadership styles (Rothfelder, Ottenbacher & Harrington, 2013, p.207) and was consequently used in this study. The MSQ was used as it is readily available to researchers and easy to use. Additionally, it and the Job Description Index (JDI), a job satisfaction
index that is shown to exhibit high construct validity (Kinicki, Schriesheim, McKee-Ryan, & Carson, 2002, p. 26), have convergent validities (Kinicki, Schriesheim, McKee-Ryan, & Carson, 2002, p. 23). In fact, according to Kinicki, Schriesheim, McKee-Ryan, & Carson, (2002, p.26), the MSQ might do a better job of measuring certain aspects of job satisfaction. Both surveys, the MLQ and MSQ, have 5-point Likert scale response sets.

Transformational and transactional leadership styles are comprised of four and three elements, respectively, each one of these elements consisting of four items. Each element’s score was computed by taking its associated arithmetic mean and, in turn, the overall score for transformational and transformative leadership were determined by taking the arithmetic means of their respective elements. The laissez faire leadership style was computed by taking the arithmetic mean of its four items. Likewise, job satisfaction was calculated by taking the arithmetic mean of its ten associated items.

A combination of IBM’s SPSS Statistics software package and Microsoft Excel were used for calculations.

3. RESULTS

A total of 67 individuals participated in the survey, but two respondents neglected to complete the demographic data (seasonal versus full-time and length of employment) and were consequently excluded.

An analysis of the respondents reveals that 42 and 23 of them are seasonal and full-time employees, respectively. And of these 23 full-time workers, only one of them has been with his employer for less than two years (Table 1). In terms of length of service, 14 (21.5%), 12 (18.5%), 6 (9.2%), and 33 (50.8%) of the respondents have worked, respectively, less than six months, between six months and a year, more than a year but less than two years, and longer than two years at their particular hotel (Table 1).

A descriptive analysis of the respondents reveals that 55 (84.6%) were male and 10 (15.4%) female (Table 1). When considering age, 33 (50.8%), 20 (30.8%), 5 (7.7%), and 7 (10.8) of the respondents were from the ages groups 18 – 29, 30 – 39, 40 – 49, and over 50 years respectively (Table 1).

In terms of the three evaluated leadership styles (and using a 5-point Likert scale response set), transformational leadership was revealed to be the highest rated \( M = 3.97, SD = 0.62 \), followed by transactional leadership \( M = 3.51, SD = 0.42 \) and laissez faire \( M = 1.77, SD = 0.59 \). Means and standard deviations for the studied three leadership styles and job satisfaction are found in Tables 2, 3, and 4. A t-test revealed (Table 5) that respondents reported that their supervisors engage in a statistically significant more transformational manner than transactional one \( p=0.000 \).

Correlation analysis showed that transformational leadership is positively and significantly correlated to both transactional leadership and job satisfaction.
while being negatively and significantly correlated to laissez faire leadership. Additionally, transactional leadership is not significantly correlated to Laissez faire leadership, but it is positively and significantly correlated to job satisfaction. Correlations among the three leadership styles and job satisfaction are found in Table 6.

A predominate leadership style was identified for each respondent by determining which of the three leadership styles received the highest score from the respective respondent. Based on this analysis, it was revealed that the predominant leadership style experienced by Dubrovnik-based front desk employees is transformation (55 respondents or 86%). Transactional leadership was the other experienced leadership style (9 respondents or 14%) and laissez faire was not experienced by any of the respondents (note that one respondent reported his supervisor to be equally transformational and transactional).

When considering job satisfaction of all respondents as associated with leadership style, respondents indicated satisfaction mean scores of 3.76 (SD = 0.70) and 4.01 (SD = 0.59) operating under predominantly transactional and transformational leadership, respectively. A t-test (Table 7) revealed that there was no significant difference between these two groups (p=0.33); consequently, Hypothesis 1 was rejected.

Contrasting seasonal employees to full-time ones, one discovers that seasonal workers record a satisfaction score of 3.96 (SD = 0.55) versus full-time employees’ satisfaction score of 4.02 (SD = 0.66). As revealed by a t-test (Table 8), there is no significant difference between these two groups (p=0.72); thus, Hypothesis 2 was rejected.

Considering only seasonal workers and their length of employment at their respective hotels, no significant difference was uncovered pertaining to job satisfaction. Specifically, those individuals who have worked at the same hotel for at least two years did not record a significantly different level of job satisfaction than did those workers being at their hotels for less than two years. Employees with two or more years indicated a satisfaction level of 4.07 (SD = 0.47) whereas workers with less than two years spent at their hotel recorded a satisfaction level of 3.97 (SD = 0.55). No statistical difference, as determined by a t-test (Table 9), exists between these two groups (p=0.59); therefore, Hypothesis 3 was rejected.

Finally, seasonal workers were evaluated to determine if they achieved higher levels of job satisfaction under predominantly transformation leaders as opposed to transactional ones. While seasonal employees working in a predominantly transformation environment had a higher level of job satisfaction than those working in a predominantly transactional setting ($M = 4.01$, $SD = 0.58$ and $M = 3.74$, $SD = 0.36$ respectively), a t-test (Table 10) showed that the difference was not significant (p=0.13); consequently, Hypothesis 4 was rejected.
4. CONCLUSIONS

The results of this study indicate a contextual nature of seasonal employment thus advancing this concept with a new geographic area (Croatia), which can be added to the hospitality leadership study.

One aspect of this study’s findings was consistent with prior findings showing a high correlation between transformational and transactional leadership style among front desk managers in Dubrovnik hotels. In a positive sign for the state of front-line leadership in Dubrovnik hotels, laissez-faire leadership was largely absent.

This study’s findings are somewhat unique in that all of its proposed hypotheses were rejected. But note that these hypotheses were based on extant literature and studies that have yet to be applied to this study’s specific context; namely, hospitality that occurs in a highly seasonal environment. As such, this study extends the sphere of understanding pertaining to part-time (seasonal workers in this study’s context) workers’ job satisfaction and perception of leadership.

Inconsistent with some prior studies, this study has not been able to demonstrate that subordinates of transformational leaders experience significantly different work satisfaction than subordinates of transactional leaders. There are a couple of possible explanations for this result.

The first explanation might be that our sample of seasonal and full-time employees expressed similar work satisfaction because of the ability of front desk managers to effectively apply their leadership style and adjust it to the situation at hand.

The second explanation might lie in the fact that the same managers were effective in utilizing both styles depending on the maturity level of the followers thus resulting in similar work satisfaction.

Results of this study suggest that seasonal hospitality providers and their managers occupy a unique space in the leadership field. It is compelling to note that fully 31 of the 42 (73.8%) seasonal workers have been employed at their particular hotels for less than two years. Traditional leadership thinking would suggest that these individuals experience lower levels of job satisfaction. Again, this was not the case in this study. It is quite possible that Dubrovnik front-line employee managers have developed a unique style that combines the best elements of transformational and transactional leadership, applying them appropriately to each individual as demanded by his or her context. These managers appear to have mastered the art of adjusting to the individual situation. Lack of Laissez-faire leadership speaks to these managers ability to successfully diagnose each situation and level of maturity of the employee, allowing them to create an environment of equal levels of job satisfaction for both permanent and seasonal employees.

Earlier studies have demonstrated differences between national culture and leadership styles. Although the scope of this research did not focus on national cultures, the results gathered in this study indicate the impact of national culture
as an important cultural contributor that has to be included in any further study on leadership and its effectiveness. The tourism business culture and environment in Dubrovnik and its seasonal nature has potentially shaped and molded frontline managers such that they are able to adapt and accommodate all modes of employees.

Based on the available literature dealing with the same geographic area the findings of this study were surprising in the sense that the front desk managers were evaluated as being effective and highly able to personalize and provide their employees with the individual consideration and care for their needs. Thus, in turn, the same employees will be able to personalize their service and provide the guests with individualized and caring attention that they deserve.

One suggestion from the authors would be to conduct similar research at a different time of the year (e.g. in months of high occupancy and higher work related stress) so as to be able to measure work satisfaction under different workloads and business demands.

Being a dynamic field of study, contemporary leadership needs to be further explored in order to meet the needs of a complex hospitality business environment and changing needs of all stakeholders. The perception of this industry as being stable or unstable proved itself to be crucial to the appropriate choice of leadership style and the impact that it has on the organizational overall health and success.

4.1. Limitations and Future Research

This research effort was limited in a number of ways. Timing constraints and lack of accessibility resulted in a sample comprised of ten hotels and 67 front-desk employees. A more robust study would include a more comprehensive set of respondents. Additionally, the administration of the survey could have been more optimal as certain participating hotels requested that they administer the survey as opposed to the paper’s researchers, potentially influencing participants’ responses. Finally, again related to timing issues, this research was conducted at the beginning of the tourist season when employees have not been subject to the full rigors of a season. An interesting future research effort, as previously mentioned, would be to determine if employees’ responses would be materially different at the end of the season; for example, would supervisors maintain their predominately transformative style throughout the season and might employee job satisfaction change?

REFERENCES


Travis Blackwell (2007); A New Vision of Leadership, Prentice-Hall, New Jersey.


**Tables**

**Table 1**

Respondents’ Profiles

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Mode of Employment</th>
<th>Length of Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Full-time</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>33</td>
<td>10</td>
<td>42</td>
</tr>
<tr>
<td>30-39</td>
<td>20</td>
<td>15.4%</td>
<td>23</td>
</tr>
<tr>
<td>40-49</td>
<td>5</td>
<td>64.6%</td>
<td>7</td>
</tr>
<tr>
<td>50+</td>
<td>7</td>
<td>10.8%</td>
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</tbody>
</table>

Source: authors’ calculations

**Table 2**

Transformational Leadership Means and Standard Deviations

<table>
<thead>
<tr>
<th>Elements of Transformation Leadership</th>
<th>Overall Transformational Leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspirational Motivation</td>
<td>Mean 4.13</td>
</tr>
<tr>
<td>Individual Consideration</td>
<td>Std. Dev 0.60</td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>Mean 3.88</td>
</tr>
<tr>
<td>Idealized Influence</td>
<td>Std. Dev 0.68</td>
</tr>
<tr>
<td>Idealized Influence</td>
<td>Mean 3.84</td>
</tr>
<tr>
<td>Idealized Influence</td>
<td>Std. Dev 0.73</td>
</tr>
</tbody>
</table>

Source: authors’ calculations

**Table 3**

Transactional and Laissez-faire Leadership Means and Standard Deviations

<table>
<thead>
<tr>
<th>Elements of Transactional Leadership</th>
<th>Overall Transactional Leadership</th>
<th>Laissez-faire Leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contingent Reward</td>
<td>Mean 3.90</td>
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</tr>
<tr>
<td>Active Mgt. by Exception</td>
<td>Std. Dev 0.68</td>
<td></td>
</tr>
<tr>
<td>Passive Mgt. by Exception</td>
<td>Mean 2.47</td>
<td></td>
</tr>
<tr>
<td>Passive Mgt. by Exception</td>
<td>Std. Dev 0.77</td>
<td></td>
</tr>
<tr>
<td>Overall Transactional Leadership</td>
<td>Mean 3.51</td>
<td></td>
</tr>
<tr>
<td>Laissez-faire Leadership</td>
<td>Std. Dev 0.42</td>
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</tr>
</tbody>
</table>

Source: authors’ calculations

**Table 4**

Job Satisfaction Mean and Standard Deviation (entire sample)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.97</td>
<td>0.59</td>
</tr>
</tbody>
</table>

Source: authors’ calculations

**Table 5**

t-Test Comparing Leadership Styles for Complete Sample

<table>
<thead>
<tr>
<th>Leadership Type</th>
<th>Transformation (Mean)</th>
<th>Transaction (Mean)</th>
<th>T Statistic</th>
<th>p-value (2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformation</td>
<td>3.97</td>
<td>3.50</td>
<td>5.2193</td>
<td>.000*</td>
</tr>
<tr>
<td>Transaction</td>
<td>3.50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at 0.01 significance level

Source: authors’ calculations
### Table 6
Correlations Between Transformation, Transaction, Laissez-faire Leadership and Job Satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Transformation Leadership</th>
<th>Transaction Leadership</th>
<th>Laissez-faire Leadership</th>
<th>Job Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformation</td>
<td>Pearson Correlation</td>
<td>1.00</td>
<td></td>
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</tr>
<tr>
<td>Leadership</td>
<td>Significance (2-tailed)</td>
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</tr>
<tr>
<td>Transaction Leadership</td>
<td>Pearson Correlation</td>
<td>.653*</td>
<td>1.00</td>
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<tr>
<td></td>
<td>Significance (2-tailed)</td>
<td>.00</td>
<td>.055</td>
<td>1.00</td>
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<tr>
<td>Laissez-faire</td>
<td>Pearson Correlation</td>
<td>-.445*</td>
<td>-.055</td>
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<td>Leadership</td>
<td>Significance (2-tailed)</td>
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<td>.661</td>
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<tr>
<td>Job Satisfaction</td>
<td>Pearson Correlation</td>
<td>.559*</td>
<td>.552*</td>
<td>-.233</td>
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<tr>
<td></td>
<td>Significance (2-tailed)</td>
<td>.00</td>
<td>.00</td>
<td>.057</td>
</tr>
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</table>

* Significant at 0.01 significance level

Source: authors’ calculations

### Table 7
T-test for Complete Sample’s Job Satisfaction and Leadership Type

<table>
<thead>
<tr>
<th>Leadership Type</th>
<th>Transformation (Mean)</th>
<th>Transaction (Mean)</th>
<th>T Statistic</th>
<th>p-value (2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Sample’s Job Satisfaction</td>
<td>4.01</td>
<td>3.76</td>
<td>-1.0305</td>
<td>0.33</td>
</tr>
</tbody>
</table>

Source: authors’ calculations

### Table 8
T-test to Compare Seasonal and Full-time Employees’ Job Satisfaction

<table>
<thead>
<tr>
<th>Mode of Employment</th>
<th>Seasonal (Mean)</th>
<th>Full-time (Mean)</th>
<th>T Statistic</th>
<th>p-value (2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Satisfaction</td>
<td>3.96</td>
<td>4.02</td>
<td>0.3661</td>
<td>0.72</td>
</tr>
</tbody>
</table>

Source: authors’ calculations

### Table 9
T-test for Seasonal Workers’ Job Satisfaction and Length of Employment

<table>
<thead>
<tr>
<th>Length of Employment</th>
<th>Seasonal Worker Job Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2 Years (Mean)</td>
<td>3.97</td>
</tr>
<tr>
<td>&gt; 2 Years (Mean)</td>
<td>4.07</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>T Statistic</th>
<th>p-value (2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.5541</td>
<td>0.59</td>
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</table>

Source: authors’ calculations

### Table 10
T-test for Seasonal Workers’ Job Satisfaction and Leadership Type

<table>
<thead>
<tr>
<th>Leadership Type</th>
<th>Transformation (Mean)</th>
<th>Transaction (Mean)</th>
<th>T Statistic</th>
<th>p-value (2 tailed)</th>
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</thead>
<tbody>
<tr>
<td>Seasonal Worker Job Satisfaction</td>
<td>4.01</td>
<td>3.74</td>
<td>-1.5946</td>
<td>0.13</td>
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Source: authors’ calculations
CONTROLLING AS A FUNCTION OF SUCCESSFUL MANAGEMENT OF A MARINA

Review
UDK: 65.012.4:725.87
JEL classification: M10, L83

Abstract

Controlling, as a management function, is often absent in the practice of economies in transition. The reason for absences mostly due to the lack of knowledge, but also occurs as a result of managerial operative which is burdened by a series of other problems, such as the billing, transparent business, liquidity, seasonality, and others. Due to the duality of this management problem, which often makes controlling seen as a „waste of time” while asserting that there are more important things to be addressed puts the functionality of controlling into question. Commercial private marinas, which are examples of successful operations of the Croatian economy, are a good case for studying the role of controlling in the formation of complete and successful management. The administrative system is a marina, and their management, especially during the season, are operating almost 24 hours, thus intensifying the control over the actions of every operational task, as well as harmonization of all processes and tasks. Starting with the arrival of the yacht in the marina, alongside of all other services, to the billing and the departure of the yacht, a system of activities was designed in the marina, which must be carried out in order to satisfy the yachtsmen and the guests. Practice has shown that the establishment of an effective system of management and processes in the marina, is very dynamic and demanding, and in regards to the seasonality, extremely dynamically oscillatory. This raises a number of research questions, (1) how and in what way does controlling, as a function, contribute to the success of the management of the marina, (2) whether, and in what way, controlling can contribute
to solving the current daily problems which seem to be “higher priority” than controlling. (3) what are the characteristics of controlling, of different types of marina, such as the city marinas, or the marinas at smaller destinations away from the city. This work/study will answer the questions mentioned above, which will, through the understanding of controlling, contribute to the success of management of Croatian commercial marinas.

**Keywords:** controlling, management, marine, seasonality, control and harmonization of processes in the marina

1. **INTRODUCTION**

Tourism and nautical tourism, in particular, are activities that have been experiencing high growth rates during the past several years. In today’s world and society, where the global economy’s ground is shaken by the economic crisis, as well as the crisis of investment and investment ideas, nautical tourism is presented as an intriguing economic opportunity. There is an increasing number of researches and testing of development opportunities, which the European and world economies are certainly looking forward to. However, it is not enough just to be aware of opportunities, investments and shaping of the enterprise, but to successfully manage the enterprise, secure its growth, earn profits and meet all market requirements for competitive advantage. Thus, the management of an enterprise, as a team, and management as a process that goes through four basic management functions, are areas which require further researches. Considering the importance of nautical tourism, for both Croatian and European economies, this research will focus on two basic management functions in marinas, controlling and planning.

The goal of this research is to valorise control and planning, as two crucial managerial functions, which are the main factors of successful management of the marina. Respectively, the fundamental hypothesis states *that the comprehensiveness of controlling, its dynamics, the way in which it operates, the degree of technical equipment and knowledge are a basic requirement for the successful management of a marina.* Moreover, another hypothesis related to planning states that planning, that has been set up in controlling way and which operates the marina throughout the year, is an important factor in the successful management of the marina. In order to answer this question, it is necessary to conduct a research in Croatian marinas, for which this study will use one of the very quality marinas in Croatia as case study, because, from the point of assumption and experience, it is believed that that marina has a successful management. However, the success of a marina, measured through financial results, is not a guarantor of successful management process of the marina, which will be explored and analysed through this study.
2. MANAGEMENT AND ITS FUNCTIONS

There are many definitions of management, but firstly it is important to distinguish two basic concepts of management - management as a work process, and management as a governing entity or a management team. According to Weihrich and Koontz, "management is a process of designing and maintaining an environment in which individuals, working together in groups, efficiently achieve the chosen goals". There are several more management definitions. For example, according to Peter, Hess and Julie Siciliano, "Management is a process of coordinating the human, technical and financial resources needed to achieve organizational goals."

On the other hand, Mary Parker Follett, one of the early theoreticians of management, has given a very broad and relatively unscientific definition of management: "Art of doing business - with, by, or through - other people."

Not dependent of other’s opinion, this definition is unconscious, realistic and derives from practice. Therefore, perhaps the most appropriate definition is Roberto Kreitner’s definition, which says that management is the process of working with others and through others to achieve organizational goals in a changing environment, with the effective and efficient use of limited resources.

This definition is also supported by Peter Drucker, who defines management as a continuous and systematic process of directing individuals, groups, businesses, operations or the entire organization towards achieving the defined organizational goals with the resources available to the organization in an effective and efficient manner.

In the early stages of management study in Croatia, management was defined through management functions and it was said: “During this process, managers perform specific functions, such as planning, organizing, managing and motivating, controlling and managing human resources.” The first problems of confusion and misinterpretation of management came from the previous definition. Controlling is translated as “checking” and staffing, which was discarded in the 90s, has remained in Croatian theory as “human resource management”, which means management has become a leading, what is wrong. During the 90s, American theorists have solved the problem of introducing human resources as a function, which was not logical, but it has become kind of a norm. Their position was that resources cannot become management functions, but need to develop management of each resource, such as financial management, human resource management, sustainable development management, etc. Encyclopedia of Management has confirmed that “The functions of management uniquely describe managers’ jobs, which means that the previous statement is correct. The most commonly cited functions of management are planning, organizing, leading and controlling, although some identify additional functions”.

Therefore, this encyclopedia has solved, at least among American circles of management theory, the problem of management function and staffing, as well as other resources that were about to become management functions. Respectively, Rick Griffin explained the POLC-framework with an adequate chart, which made the problem of managerial functions solved, within the circle of developed economics and management theory.
Management and its functions, set up in this way, have a system based on a two-way relationship, acting in the microeconomic system, as top-down and bottom-up, whose function organized by market-oriented management. In order for this bi-directional connection to function, it is necessary to set up the system so that all the subjects involved in it personally participate closely. Thus, the planning and decision-making function in correspondence with the goal, and controlling, are set as the two main, leading functions of that system.

Controlling and planning support each other by guiding the entire management functioning system of an enterprise.
3. CONTROLLING THE PLANNING

At this point we are left with the question of what is controlling and what is planning. There are many definitions of controlling functions, but all fall into the co-operation of managers and controllers, so it is possible to say that the controlling concept of leadership is focused on bottleneck, goal, benefit and future of the company. 

In this system, the manager makes decisions and the controller is responsible follower risk of decision making and a more successful choice of possible solutions. It is believed that the manager is a pilot, and the controller is a co-pilot in the company. Therefore, the planning function is closely related to controlling, and the controller takes responsibility that the goal remains intact; it should be known whether the goal was realised for each person and at any time. Such co-operation and operational co-operation of planning and controlling is called controlled planning. It is firstly necessary to define the planning function. Planning can be defined in a variety of ways, such as “Planning is a management function which involves setting goals and determining the course of action to achieve these goals.” So planning is associated with setting goals, or symbiotic goals and a plan. Since planning is linked to the goal, the manager is a key subject of planning, where confidence among the working process participants is crucial. Trust and psychological persuasion are important factors of this model. Realizing this problem, Koontz Harold & O’Donnell Cyril stated: “After two decades of intensive learning, nowadays managers are very sophisticated. They have the impression that the action plan has made the course of action unchangeable. Now they understand that the manager manages the plan, the manager cannot be managed by it”. Thus, there is a variety of planning definitions, but they all based on the future business of the enterprise, determined by the goal. Therefore, the one in charge of making this journey straightforward, while knowing the location of the company in each point, is controlling, or better said, the controller. The remaining question is how it actually works in practice, especially in the practice of Croatian economic entities. For that matter, a marina is a very suitable economic entity, small enough and big enough, complex and market-oriented enough that control-oriented management in Croatia can be observed through it.

4. MARINAS AS ECONOMIC TOURISM ENTITIES

A marina, which is the subject of this research, is one of many nautical tourism subjects. As the result of the developed scientific approach and research of Croatian scientists, the classification of nautical tourism, as we have in Croatia, is internationally recognized.
Graph 1. Classification model of nautical tourism

<table>
<thead>
<tr>
<th>SECONDARY</th>
<th>NAUTICAL TOURIST INDUSTRY</th>
<th>SUPPLEMENTARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Diving</td>
<td>Ports of nautical tourism</td>
<td>- Shipbuilding of mega yachts,</td>
</tr>
<tr>
<td>- Surfing</td>
<td>Charter</td>
<td>- Nautical vessel construction</td>
</tr>
<tr>
<td>- Diving-bells</td>
<td>Cruising</td>
<td>- Manufacture of nautical equipment</td>
</tr>
<tr>
<td>- Rowing</td>
<td></td>
<td>- Skipper service</td>
</tr>
<tr>
<td>- Robinson tourism</td>
<td></td>
<td>- IT availability,</td>
</tr>
<tr>
<td>- Lighthouse tourism</td>
<td></td>
<td>- Sailing schools,</td>
</tr>
<tr>
<td>- Etc.</td>
<td></td>
<td>- Research institutes and education centres</td>
</tr>
</tbody>
</table>

**Ports of nautical tourism**
- Ancorage
- Moorings
- Dry marinas
- Marinas: 1st category
- 2nd category
- 3rd category

**Charter**
- Motor yachts
- Sailing Yachts

**Cruising**
- Cruisers: a. big world cruisers
  - local cruisers (old timers)
  - daily cruises
  - longer cruises
- Ports of call for cruisers:
  a) ports for large cruisers:
    - specialised ports, members of “Cruise Europe”
    - non-specialised ports
  b) ports for local old timers:
    - shore ports in small places
    - island ports

**SUBJECT OF RESEARCH**


According to the definition from the Regulation on classification and categorization of nautical tourism ports (NN 72/2008), Article 10, the marina is defined as: “a part of the water space and coastline specially constructed and arranged for the provision of link services, tourist accommodation in vessels and other services in accordance with this Regulation”. Given the comprehensiveness, especially the addition of “other services in accordance with this Regulation”, this definition of a marina may be accepted in scientifically, up to a certain degree. However, it should be noted that the tourists, from the yachts, do not only stay on the boat. The surveys show that about 10% of them are staying in the apartments in the marina, if apartments are a part of the marina. Since this has been observed by the marinas, there is an increasing number of accommodation facilities, as a part of the marinas. Thus, the most important thing to point out in defining a marina is that the marina is a part of the water space and the coast, specially built and arranged for the provision of boat services, the accommodation of a boat and the tourists from the yachts. Everything else is less important. Of course, it is important to know that marinas provide many other services, ranging from boat and motor services, to catering services, such as car supply and parking, and catering services, to a whole range of other services. All these services are the result of marine equipment, facilities and services, which significantly influence its categorization and image in the market.

Marinas, as ports of nautical tourism are categorized, but categorization is not unified in the European bidding market, but it is left to national legislation, such as in Croatia, or some associations, such as ADAC. However, all categorizations are reduced to two sets of criteria: a) general criteria (1) the level of berth equipment; (2) quality and number of services provided in the marina; B) special criteria, which may be different in respect of the one who determines categorization. For example, ADAC, as the strongest European car club, sets
the criteria for cars and German language in the marina. The idea of the need to unify the criteria for marine categorization is increasing in the scientific and practical circles of Europe, but for the time being it has not yet been resolved.

Marinas can be classified according to several basic aspects:

a) According to the level of equipment
b) According to construction types
c) In regards to the position of aquatoriums
d) Owned by the Navy
e) In relation to the location

a) According to the level of equipment, the marinas can be classified as:
- Standard – a marina that provides basic comfort. They have mooring with the basic connections necessary for a multi-day stay in the marina, and the sailor has basic services in the marina.
- Luxury – marinas with a high level of comfort. The vessel has the possibility of mooring with all the connections needed for a multi-day stay in the marina, as well as vessel service and other services required. They provide numerous high quality services and facilities so that there is no need, for the guests, to leave the marina.
- Recreational - a marina with the possibility of using sports, recreational and entertainment facilities. Within this marina, it is possible to set up further classification in terms of quality, facilities and content of services.

b) According to the construction types, the marinas can be classified as:
- American type of marina construction that is characterized by simple, relatively high quality but inexpensive construction, functional deployment of content, good equipment and efficient organization of business.
- Atlantic type of marina construction, which, like all European marinas, has no unique type of construction in the architectural sense, is less equipped, and on average has a smaller capacity than the American marine type. It is characterized by powerful shields, which protect the marina from strong ocean waves, and the mooring is suitable for high sea changes and tides that can be up to 8 meters. Styles of construction depend on the area, and can be pyramidal, stepped, ambient and high.
- Mediterranean type of marina construction that is mostly sturdily constructed, although construction depends on the underwater, as well as the influence of the sea. They are usually well-equipped, and given the destination, there is a distinction between the marina in the city, outside the city/near the coast and a marina on the island.

c) There are four basic types of marinas in relation to the aquatorium position, compared to the onshore environment:
An open type of the marina is a marina that has three sides exposed to the influence of the sea and the waves where artificial shields have to be built to protect the vessels from the waves.

The semi-marina type is a marina that has one or two sides exposed to the influence of the sea and is naturally well-protected on both sides.

The fully retracted marina is a marina located deep in a natural bay that is in such a form that naturally protects boats from any impact of sea waves. There is a high number of such bays on the Adriatic, which some marinas have taken the advantage of and have established the marina at a low cost.

d) By ownership, marinas may be:

- Private - they are a commercial type marina, whose property refers to the choice of business policy and the management of the marina. Entrepreneurship is at the first place for such marinas.

- Utilities - usually public marinas and are managed by port administrations or by the state through the local community. They are intended mainly for the domicile population which characterises the guests of such marinas.

- Public - owned by the state or local authorities. They are characterized by the way of management and financing. They represent competition for commercial (private) marinas.

e) In relation to the location, the marinas are divided into the ones in the:

- Sea,
- Lake,
- River and
- Canal.

For this last type of classification of the marinas, there is no need for a comment or interpretation. In addition to the above classification, marinas can be classified according to some other scientific criteria, such as:

1. According to the Space – based aspect

2. According to the supply market.

The most important thing to highlight is the profile of the marina and its role in the development of the destination, in which the marina is located. The marina is the most complex and highest quality nautical port, which means that it can provide all types of services and meet the needs of yachtsmen and their vessels. It should be noted that about 80% of the sailors in the marina, in which they hold a vessel on a permanent basis or take a charter boat, comes with a car, which shows the relationship between nautical tourism and personal cars. This also means that, besides vessels, marine services can be tailored to the needs of the vehicles, and the marina must have enough parking spaces as well as other car-oriented services. Dependent on the destination, the impact of the marina is

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very important, although different. The basic formula of that impact: the lower level of development of a destination means the greater influence of the marina on the destination. This means that city marinas do not have a major impact on the development of the city, but marinas in small and underdeveloped coastal areas have an important developmental role. Scientific institutions recognize this phenomenon of the impact, of the marina, on the destination, and it has already become a subject of several PhD dissertations. Also, this phenomenon has been recognized by Europeans and there are on-going EU projects, financed by the EU.

Now, we came to the question of the management of the marina or the success of the management, which requires further researches.

5. MARINE MANAGEMENT AND ITS FUNCTIONING, CASE STUDY

As a case study, marina “X” will be used as an example. The marina belongs to city marinas but it is located near the small towns. An analysis of management of marina “X” has shown a number of issues, which this marina is dealing with. Additionally, it is known from experience that those issues are present in all marinas in Croatia and are, more or less, dependent on the development of the entire management system. To conduct this analysis better, it was necessary to go even deeper into the management system and to extract the basic characteristics which would need to, through good management performance, be positively achieved.

### Table 1

<table>
<thead>
<tr>
<th>Tasks &amp; characteristics</th>
<th>Explanation for marina „X“</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Setting goals – strategic goal</td>
<td>No strategic goals</td>
</tr>
<tr>
<td>2 Planning - strategic</td>
<td>No strategic plans</td>
</tr>
<tr>
<td>3 Setting goals – operational goals</td>
<td>Operational and annual goals are only connected to the berth estimation.</td>
</tr>
<tr>
<td>4 Planning - operational</td>
<td>Operational and annual plans are only connected to the berth estimation.</td>
</tr>
<tr>
<td>5 Task standardisation</td>
<td>Tasks are not standardised. There is “A regulation of marine procedures” which does not get into standardised tasks.</td>
</tr>
<tr>
<td>6 Daily specification of tasks of each worker</td>
<td>Tasks are not planned daily – workers act as needed</td>
</tr>
<tr>
<td>7 General coordination</td>
<td>The captain of the marina coordinates the systems and gives tasks individually – he transfers coordination to lower levels but there is no coordination system, it is all done through “established practice”.</td>
</tr>
<tr>
<td>8 E – connection from reception to every service centre</td>
<td>There is an e-connection system in all profit, service centres. Although, the system is full of issues and is being upgraded. It even happens that a yacht leaves the marina without paying the bill.</td>
</tr>
<tr>
<td>9 Supervision of systems segmented by services.</td>
<td>System supervision is subordinated to personal acts of each individual, and especially managers in relation to lower levels. Reception, as a central unit of the marina, supervises through daily cooperation with the captain of the marina and other managers.</td>
</tr>
</tbody>
</table>

Source: made by authors Lučić, L & Luković, T.
From the review of the analysis conducted, it is clear that despite the fact that the marina “X” is a high-categorized Croatian marina, it has no strategic goals or plans. The quality of the services in the marina is high but its management is not directed to the specific and predictable market gap, or market segment.

The standardization of tasks in the marina does not exist, but everything is done through previous experience and it is almost the same with the coordination of the tasks and work of the employees in the marina. This results in the fact that few sailors leave the marina without paying the bill to the marina. This is supported by the fact that the Maritime Police have no right to stop such a perpetrator and return it to the marina or make a payment. This problem is trying to be being solved or minimized by adding an e-system, in which the reception of the marina plays a major role. The problem of managing human resources is a special problem because the seasonal staffs needs to be fired off season, which the management of the marina tries to solve in various ways. Thus, the management of the marina, observed through its functions, does not meet the planning and controlling area, which means that it is inefficient and incomplete management.

6. CONCLUSION

As a summary of this research, it can be concluded that the management of the marina is incomplete, since its planning and controlling functions are inefficient or insufficiently applied. Accordingly, the field that the research was particularly interested in, shows that controlling certainly contributes to the quality of management, but given its degree of development, the level of its involvement is low. This results in a number of disadvantages, such as coordination and supervision, which are not at a satisfactory level. Furthermore, the theoretical and the practical requirements that management should realize is that every man, every day, knows what he has to do, regardless of the situations and changes, which are logical and common in the marina. This is one of the key requirements, which is realized through developed e-support. In this way, at the end of the working day, all tasks can be seen – the finished and unfinished ones, as well as important and less important ones.

The research fields, which we set out at the beginning of this paper, deals with clarifying differences in form and application of control in relation to the location, such as a marina in the city and outside the city. This research application is only explained but not researched through the example of the comparison of city and offshore marinas. However, it is easy to conclude that services in city marinas are generally focused at berths rather than other possible services, which is the case in marinas outside the city.

In conclusion, the management of the marina needs stronger supervision over controlling, but good financial results of all Croatian marinas make management satisfied with the results. The fact is that the results could be
better and the guests could be more satisfied point at a future development of the marinas, in which controlling will have a greater role, along with planning.

REFERENCES


Abstract

Bosnia and Herzegovina is a country with complex and asymmetrical structure (two entities, District Brčko, and cantons with own government and ministries). The number of ministries in the BiH is enormous. Coordination between so many governments and ministries is demanding while most of the citizens are completely lost in that institutional labyrinth. One of the possible ways how governments and their institutions could help citizens, ensure direct communication with them and improve mutual coordination is more intensive use of social networks (Facebook, Twitter). Social networks have potential to increase visibility and transparency of the work of governments and their institutions. Also, they could make policy processes more inclusive and increase confidence between governments and citizens. The main goal of the paper is to explore presence and activity on social networks in BiH government institutions, to discuss major challenges and to propose potential options for better implementation of social networks in these institutions.

Keywords: Social Network, Government, Web 2.0
1. INTRODUCTION

Web 2.0, more specific, social networking and social media websites represent a significant shift in the everyday use of technology. Passive use (searching, browsing, reading) has been completely replaced by an active interaction of all participants. People are enabled to actively participate in creating and sharing diverse content with different media. The former information monolog “one-to-many” has been replaced by dialogue “many-to-many” (Bojorquez, Shores, 2009). As these authors emphasize, the mentioned technologies have enabled democratization of information, and transformation of people from content readers into content publishers providing rich user experience. The social nature of Web 2.0 technologies helps in building online communities of people who share interests, activities, or both, or people interested in exploring the interests and activities of others (Bojorquez, Shores, 2009).

The mentioned democratization of information, the social nature of Web 2.0 technologies and dialogue, significantly contributes to raising the transparency and openness that many authors have recognized as very suitable “partner” for achieving open government - a concept that says the government should be transparent, collaborative and participatory towards its citizens and encourages governments to provide their data open and make them easily available to the public.

Web 2.0 technologies, more specific social media have become new tools for the public sector to communicate with the public and to realize the idea of an open government that embraces transparency, participation, and collaboration (Gunawong, 2015, Chun et al., 2010). According to Chun et al. (2010) an open government incorporating transparency, participation and collaboration can be realized by adopting Web 2.0 technologies.

According to Klang and Nolin (2011), public agencies started to embrace social media around 2009. Since then, they have attempted to harness social media’s potential for public purposes, while various social media applications are being used as new communication channels between public agencies and the general public (Gunawong, 2015). For example, U.S. states and their governors have adopted and used Facebook, Flickr, Twitter, YouTube, RSS, LinkedIn, Ustream, and Scribd, with Twitter being the most popular application (Joseph, 2012). There are different examples of social media use, especially Facebook, in public sector in the USA. Florida Department of Health leverages Facebook ads for a tobacco-free Florida. Department of Veterans Affairs communicates with their users on Facebook. Henrico County (Virginia) uses Facebook for information distribution during inclement weather. City of Burnsville (Minnnesota) hosts a virtual fire department ‘ride-along’ on Facebook. City of Evanston (Illinois) successfully uses Facebook for Q&A with Mayor. Oakland County (Michigan) Web site contains Web 2.0 components, such as podcasting, RSS feeds, video and blogging (Andrews, 2015; Center for Digital Government and Government Technology, 2008). Recently, social media has also been employed as a tool for city marketing as observed in various Chinese cities such as Hangzhou, Nanjing, and Xi’an (Zhou & Wang, 2014).
Many researchers investigated the government efforts in realizing the benefits of the open data initiatives (AlAnazi & Chatfield, 2012; Janssen et al., 2012; Neuroni et al., 2013; Veljković et al., 2014; Zuiderwijk & Janssen, 2014, de Kool & van Wamelen, 2008, Kavanaugh et al., 2012, Linders, 2012, Sivarajah et al., 2014, Gunawong, 2015). Several studies tried to measure the breadth of usage of social media. However, none of the studies measured the depth, i.e. appropriately directed applicability to the open government imperatives (Srivastava, 2016).

Gunawong (2015) suggested the classification of published content based on the qualitative content analysis. According to him, messages on social media could be grouped into four types: announcement, public agency-related, news update, and social activity update (Gunawong, 2015). According to this author, the announcement is messages with hints or schedules about activities to be held by some government institutions or public agencies. Public agency-related news update is a message with news updates about the government institutions or public agencies as well as updates about official activities performed by the officers concerned (Gunawong, 2015). General news update is a message with general news updates (e.g., current news in the respective provinces or weather forecasts) and updates on nonofficial activities engaged by the officers concerned (Gunawong, 2015). Social activity updates are messages with greetings or congratulations to particular persons/organizations (Gunawong, 2015).

**Open government and social media in BIH**

The process of development and implementation of state ICT strategy in Bosnia and Herzegovina has started in 2002 with the initiative of Council of Ministers of Bosnia and Herzegovina. In 2003 Council of Ministers BiH signed Memorandum of Understanding for the development of ICT in BiH with UNDP (United Nations Developing Program), and as the result ICT Forum was established. ICT forum developed documents Policies, Strategy and Action Plan for the development of information society in BiH for the period 2004-2010. This document was adopted by Council of Ministers in 2004, and it defined general policies, strategic guidelines, and platform for practical implementation of Action Plan. (Council of Ministers of BiH, 2004).

Although BiH adopted relevant strategic documents, the implementation of defined goals has been challenging and slow, and some analysis (ReSPA, 2015; CPU 2015; Mediacentar, 2011) showed that the results were unsatisfactory.

ReSPA (Regional School of Public Administration) together with its E-Government Network members and relevant regional and international experts, conducted two comparative studies. In 2013 the first one was done: “ReSPA Regional Comparative E-Government Study” on a regional level devoted to e-government in the Western Balkan region. In 2015, the second one, follow up study - “Form E- to Open Government” was made. The results of these studies showed that Bosnia and Herzegovina is performing less well than the regional average on both e-government and open government. In BiH a decade has passed since ICT stakeholders got together but today there is no
central governmental body, and instead, several major players are involved in e-government. The country is however presently building a strategy for information society development in line with the Digital Agenda of the Europe 2020 strategy but without any central body responsible for coordination (ReSPA, 2015). Although BiH was formally joined the OPG (Open Government Partnership), the multilateral initiative which encourages governments from around the world to initiate reform in the area of transparency, citizens’ participation in decision-making, the fight against corruption and the use of new technologies, there are no concrete results yet. It could be said that Bosnia and Herzegovina is on the right path, but due to the nature of complex state organization and political arrangements, it is hard to ensure centralized effort, and that is one of the key future challenges.

Very often central government establishes initiatives and promotes good practices, but obstacles are presented when these initiatives need to be propagated to the lower administrative levels. Furthermore, many of these efforts are driven by the international community and the NGO sector. The government should take the initiative and the lead in many of these efforts and adopt new policies and good practices. However, most limitations are related to complex administrative structure, conflict of responsibilities or unclear division of responsibilities between different government levels (state, entities, and cantons). ReSPA analysis related to the use of Web 2.0 and social media showed that there are only some examples of their use in individual BiH Ministries (ReSPA, 2015). Two years later, the authors wanted to check is there any progress in the use social media in governments and governmental institutions in BiH.

Purpose and structure of the paper

This paper presents the empirical research related to the BiH public sector’s social media adoption and use. The main research questions are how social networks were adopted and used by government institutions, and are they active or passive users? Also, the results of research can be used for analyzing BiH related to the context of open government, and for the evaluation of previously taken activities on transparency and collaboration with citizens.

Paper consists of the following sections: introduction, methodology, results and discussion, and finally conclusions and implications for further research.

2. METHODOLOGY

The country Bosnia and Herzegovina (BiH) has asymmetric state structure. It is comprised of the two entities: Federation of Bosnia and Herzegovina (F BiH) and the Republic of Srpska (RS); and of the Brčko District (BD) of Bosnia and Herzegovina as a separate administrative area. The Federation of Bosnia and Herzegovina is the entity made up of ten cantons, and these are: Una-Sana, Posavina, Tuzla, Zenica-Doboj, Bosnia-Podrinje, Central Bosnia, Herzegovina-Neretva, West Herzegovina, Sarajevo and Livno (Canton
10) cantons. Each canton in F BiH has its government and ministries. The entity Republic of Srpska has no cantons, just municipalities. Because of the complex state constitution, BiH has numerous governmental institutions, agencies, offices, centers and similar. Document with a schematic description of governance levels in Bosnia and Herzegovina (available at the official website of Directorate for European Integrations) is used as a base for forming of the research sample. Table 1 shows the number of governmental institutions per different governance levels included in the research sample. The governmental institutions: the Council of Ministers, federal and cantonal governments and ministries, autonomous administrative organizations at state and entity level made the sample.

Table 1

<table>
<thead>
<tr>
<th>The share of governmental institutions in sample by government levels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of government institutions</strong></td>
</tr>
<tr>
<td><strong>Bosnia and Herzegovina (BiH)</strong></td>
</tr>
<tr>
<td>Council of Ministers of BiH</td>
</tr>
<tr>
<td>Ministries</td>
</tr>
<tr>
<td>Autonomous administrative organizations</td>
</tr>
<tr>
<td><strong>Federation of Bosnia and Herzegovina (F BiH)</strong></td>
</tr>
<tr>
<td>Government of F BiH</td>
</tr>
<tr>
<td>Federal ministries</td>
</tr>
<tr>
<td>Autonomous federal administrations</td>
</tr>
<tr>
<td>Autonomous federal administrations’ units</td>
</tr>
<tr>
<td>Cantonal governments</td>
</tr>
<tr>
<td><strong>Republic of Srpska (RS)</strong></td>
</tr>
<tr>
<td>Government of RS</td>
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<tr>
<td>Ministries</td>
</tr>
<tr>
<td>Republic administrations</td>
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<tr>
<td>Republic administrations’ units</td>
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<tr>
<td><strong>Brčko District (BD)</strong></td>
</tr>
<tr>
<td>Government of BD</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Activities of selected state and government institutions on social networks were analyzed through two aspects. It was investigated whether the links to social networks were available on official websites and whether these links were valid and active. If the links were not found on the home page, it was checked whether they were available on the contact page. Availability of social networks was also checked directly by searching on the social networks.

The posted content (30 recent posts) and the frequency of posting were analyzed. The analysis was conducted between 20.4.2017 and 24.4.2017.

Descriptive statistical analysis (frequency and percentage) was performed with regard to the adoption and use of each social media application by the BiH government institutions and public agencies.

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3. RESULTS AND DISCUSSION

The pattern consisted of 125 government institutions in BiH. But analysis showed that only 22, i.e. 17.6%, of them use social networks (Table 2). Concerning the governance levels, the highest share of social networks use is in Federation of BiH, although all shares are relatively small. Namely, a small number of BiH government institution is present on social networks.

The share of BiH government institutions with social networks accounts

<table>
<thead>
<tr>
<th>NoGI</th>
<th>No%GISM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bosnia and Herzegovina (BiH)</td>
<td>37</td>
</tr>
<tr>
<td>Council of Ministers of BiH</td>
<td>1</td>
</tr>
<tr>
<td>Ministries</td>
<td>9</td>
</tr>
<tr>
<td>Competent authorities</td>
<td>27</td>
</tr>
<tr>
<td>Federation of Bosnia and Herzegovina (F BiH)</td>
<td>39</td>
</tr>
<tr>
<td>Government of F BiH</td>
<td>1</td>
</tr>
<tr>
<td>Federal ministries</td>
<td>16</td>
</tr>
<tr>
<td>Competent federal authorities</td>
<td>3</td>
</tr>
<tr>
<td>Competent federal authorities’ units</td>
<td>9</td>
</tr>
<tr>
<td>Cantonal governments</td>
<td>10</td>
</tr>
<tr>
<td>Republic of Srpska (RS)</td>
<td>48</td>
</tr>
<tr>
<td>Government of RS</td>
<td>1</td>
</tr>
<tr>
<td>Ministries</td>
<td>16</td>
</tr>
<tr>
<td>Republic authorities</td>
<td>6</td>
</tr>
<tr>
<td>Republic authorities’ units</td>
<td>25</td>
</tr>
<tr>
<td>Brčko District (BD)</td>
<td>1</td>
</tr>
<tr>
<td>Government of BD</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
</tr>
</tbody>
</table>

NoGI - Number of government institutions; No%GISM - Number (%) of Government Institutions with Social Media

The analysis of the activities on social networks at the level of BiH showed that less than ¼ of institutions included in this research even use social networks, exactly, just 8 of 37 institutions. As Table 2 shows, the Council of Ministers of BiH uses social networks, both YouTube and Twitter. Neither one ministry at the BiH level has a link to official pages on social networks. The browsing of social networks did not confirm the existence of official profiles of ministries on those media. Concerning the competent authorities at the level of BiH, 8 of 27 have profiles on social networks: Agency for Statistics BiH, Civil Service Agency of BiH, Anti-Doping Control Agency of BiH, Public Procurement Agency of BiH, Market Surveillance Agency of BiH, Agency for Preschool, Primary and Secondary Education, Institute for accreditation of BiH, and Institute for Standardization of BiH.

Analysis of government institutions at the level of Federation of BiH showed that only 11 (28.2%) of 39 analyzed institutions use social networks. The Federal government does not have an official page on any social network. Considering federal ministries, just 3 (21.4%) of 16 use social networks (Federal
Ministry of Displaced Persons and Refugees, Federal Ministry of Education and Science, Federal Ministry of Trade). The analysis of cantons showed that 4 (40%) of 10 have links on their web pages to official profiles on social networks (Una-Sana Canton, Posavina Canton, Bosnia-Podrinje Canton, Livno, i.e. Canton 10). Two of three competent federal authorities use social networks (66.7%), as well as 9 competent federal authorities’ units (22.2%).

The situation in RS is similar to those in F BiH – just 4.2% of analyzed institutions from RS use social networks. The Government of RS does not have any official profile on social networks, while 2 of 16 ministries in RS have a profile on social networks (Ministry of the Interior, Ministry of Trade and Tourism). Analysis showed that neither one of six republic authorities, as well as neither one form 25 Republic authorities’ units use social networks (they do not have official profiles on social networks).

The government of Brčko District has an official profile on Facebook.

It is logical that a simply having social media/network accounts/channels cannot be considered a social media adopter. Therefore, Table 3 shows the number of institutions, both at the level of state and entities, which have profiles on social networks, together with a number of institutions which actively use social networks during previous three months. The analysis was made on 3 social networks: Facebook, Twitter, and YouTube.

Table 3
Adoption of Social Network by BiH government institutions

<table>
<thead>
<tr>
<th>N</th>
<th>FB</th>
<th>TW</th>
<th>YT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Created Account (A)</td>
<td>Actively Used (B)</td>
<td>Created Account (A)</td>
</tr>
<tr>
<td>BiH 37</td>
<td>6 (16.2)</td>
<td>6 (100)</td>
<td>6 (16.2)</td>
</tr>
<tr>
<td>F BiH 39</td>
<td>11 (28.2)</td>
<td>11 (100)</td>
<td>4 (10.3)</td>
</tr>
<tr>
<td>RS 48</td>
<td>1 (2.1)</td>
<td>1 (100)</td>
<td>-</td>
</tr>
<tr>
<td>BD 1</td>
<td>1 (100)</td>
<td>1 (100)</td>
<td>-</td>
</tr>
<tr>
<td>Total 125</td>
<td>19 (15.2)</td>
<td>19 (100)</td>
<td>10 (8)</td>
</tr>
</tbody>
</table>

The results presented in Table 3 shows that most of the government institutions with official profiles/pages on social networks really use them. As Table 3 shows, all Facebook pages are actively used, while in the case of Twitter, 90% of profiles are used, and in the case of YouTube 2/3 of channels are used. The greatest number of created, but not used social network official accounts was found on YouTube.

Gunawong (2015) classification, mentioned in the introduction, was used as a base for analysis of published content during previous 3 months. The posts of government institutions in BiH, according to the content (support
to cultural, sport, religious associations, announcements of conferences, projects, information about celebrations, anniversaries, an organization of fairs, participation in fairs and so on) could be grouped similarly. Special cases are reports from the sessions available on the social networks pages of cantons in F BiH. Actually, for some cantons, those reports make most of the published content.

If social media activities of BiH government institutions and their posts are considered in the context of open government, then BiH is quite far from it. It is easy to conclude that governmental institutions in BiH have not recognized social media as a powerful tool for the government to listen to their citizens and for citizens to interact with their local government.

As highlighted in the introduction, the main driver for the use of web 2.0 technologies at all governmental levels should be, both fostering two-way communication between government and citizens, and ensuring transparent information about work of government and its institutions. As the results of research show, in the case of BiH, use of web 2.0 technologies in governments and their institutions is still at the beginning. Although the research showed that some government institutions use social networks, there is no two-way communication. That confirms the relatively small number of friends/followers/subscribers on social networks, relatively low number of comments/shares/likes because government institutions mostly publish information related to promotion of institutions which do not require any active participation of citizens.

If the results of the conducted research are perceived in the context of world trends - high level of information and computer literacy, a high share of highly educated people, business informatization, global digitalization – it can be concluded that BiH is still on the starting position. Leaders of government institutions should work harder to improve the use of information technologies, especially social networks, and to use it as a tool for closing to their citizens, for providing transparent work and better communication and collaborations, both between institutions and with citizens. In the end, the government should be there to its citizens, not for itself.

4. CONCLUSIONS

The presented research explored social media use in the BiH public sector, precisely in a government institution and public agencies. Results of the research show that social media, social networks primarily, have not been widely adopted and used by BiH public sector. There are two main groups of reasons for poor adoption of social media: general reasons applied to most of the public institutions all over the world, and reasons specific to public institutions in BiH. Public institutions all over the world use social media primarily for spreading information, while most of them are still looking for ways how to actively engage users. The reason for this may be lies in the culture characteristic of public administration where civil servants have no practice to
act proactively, nor to engage online with citizens. The another issue is that social media communication is less formal and public administration is not trained how to deal with it. The reasons specific for BiH public institutions are the complex administrative structure of the country, conflict of responsibilities or unclear division of responsibilities between different government levels (state, entities, and cantons), lack of coordination mechanism and challenges in the propagation of strategic goals to the lower administrative levels. Till today, the main initiatives for social media adoption in public sector have been driven by the international community, NGO sector, and industry in BiH. But the results will not be satisfactory until governments at all levels understand that open dialog, collaboration and citizens’ participation in decision-making are crucial for establishing a democratic society and the important request in the process of European integration. The presented research showed that the use of web 2.0 technologies in governmental institutions in BiH is still at the beginning. Therefore, it is a lot of space for further improvement, but this and similar research can contribute to raising the awareness of the advantages of social networks in fostering two-way communication between government and citizens.

REFERENCES


THE LEVEL OF CORPORATE GOVERNANCE IN BOSNIA AND HERZEGOVINA

Original scientific paper
UDK: 65.012.4(497.6)
JEL classification: G28, G34, K20

Abstract

A developed system of corporate governance is a fundamental prerequisite for sustainable economic growth, increase in economic system efficiency and a guarantee for easier access to the foreign sources of capital. The specificity of Bosnia and Herzegovina is two separate legal corporate governance systems, which is a consequence of the entity-based structure of the state. Corporate governance quality level is defined as the degree of compliance with set corporate governance standards defined at the international and national institutional levels. Guided by previous theoretical and empirical findings, Bosnia and Herzegovina has characteristics of a closed corporate governance system in both entities. Corporate governance in Bosnia and Herzegovina is measured by the level of the corporate governance (abbreviated LCG) index, which is created from six categories containing 46 criteria by which corporate governance is analyzed and assessed. Its value can range from 0 to 100%. The measurement of corporate governance provides a clear picture of strengths and weaknesses of the corporate governance system in corporations in Bosnia and Herzegovina. Also it is the
foundation of long-term sustainable and socially responsible growth and development of the entire economic system in Bosnia and Herzegovina.

Keywords: corporate governance, corporate governance system in entities of Bosnia and Herzegovina, quality of corporate governance in Bosnia and Herzegovina

1. INTRODUCTION

Corporate governance is defined as a set of processes and procedures for management and control of corporations. Corporate governance shows how rights and responsibilities are distributed among different stakeholders in corporations. Corporate governance provides the answer to the question who controls corporation and how (Monks & Minow, 2003., p. 2.).

The first step in this study was to determine the characteristics of the corporate governance system in Bosnia and Herzegovina, and subsequently to define the criteria and to measure the quality of corporate governance in B&H.

Corporate governance in Bosnia and Herzegovina will be measured by the Level of Corporate Governance (abbreviated LCG) index, which is created from six categories containing 46 criteria. Its value can range from 0 to 100%, or, the higher the quality of corporate governance a particular corporation has, the closer to 100% the rating is, and vice versa.

The subject of the study is to present possible models for measuring the quality of corporate governance in B&H, as well as to select one that is most appropriate for B&H system properties and to measure the level of quality according to the selected model.

The objective of the paper is to analyze the possibilities of measuring the level of corporate governance and to present and explain the level of corporate governance in corporations in Bosnia and Herzegovina.

2. CORPORATE GOVERNANCE IN BOSNIA AND HERZEGOVINA

In the sum of definitions of corporate governance, we will single out the definition of the OECD (Organization for Economic Cooperation and Development) which says that “corporate governance involves ... a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined. Good corporate governance should provide proper incentives for the board and management to pursue objectives that are in the interests of the company and its shareholders...”
(OECD Principles of Corporate Governance, 2004, p. 12) Through its acts, and particularly through the document Principles of Corporate Governance, the OECD organization has greatly contributed to the development and standardization of corporate governance concepts and standards at the global level.

In order to determine the characteristics of the corporate governance system in Bosnia and Herzegovina, data on ownership concentration for non-financial corporations, banks and insurance companies (Table 1) and data on relationships of these corporations with stakeholders (Tables 2 and 3) will be integrated and compared. Eighty-seven non-financial corporations, 28 banks and 23 insurance companies were analyzed, where their ownership concentration, business transparency and relationship with key stakeholders were analyzed. Based on that, characteristics of corporate governance systems in corporations in B&H were defined.

Table 1
Ownership concentration in Bosnia and Herzegovina as of 31 December 2016

<table>
<thead>
<tr>
<th>Owner</th>
<th>Non-financial corporations (n=87)</th>
<th>Banks (n=28)</th>
<th>Insurances (n=23)</th>
<th>Total BiH (n=128)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner 1</td>
<td>51.47</td>
<td>66.69</td>
<td>74.03</td>
<td>58.44</td>
</tr>
<tr>
<td>Owner 2</td>
<td>13.24</td>
<td>9.76</td>
<td>10.39</td>
<td>12.03</td>
</tr>
<tr>
<td>Owner 3</td>
<td>7.27</td>
<td>4.72</td>
<td>5.27</td>
<td>6.40</td>
</tr>
<tr>
<td>Owner 4</td>
<td>4.63</td>
<td>2.48</td>
<td>1.82</td>
<td>3.71</td>
</tr>
<tr>
<td>Owner 5</td>
<td>3.27</td>
<td>1.80</td>
<td>1.00</td>
<td>2.58</td>
</tr>
<tr>
<td>Owner 6</td>
<td>2.29</td>
<td>1.56</td>
<td>0.87</td>
<td>1.90</td>
</tr>
<tr>
<td>Owner 7</td>
<td>1.77</td>
<td>1.37</td>
<td>0.74</td>
<td>1.52</td>
</tr>
<tr>
<td>Owner 8</td>
<td>1.36</td>
<td>1.17</td>
<td>0.58</td>
<td>1.19</td>
</tr>
<tr>
<td>Owner 9</td>
<td>0.97</td>
<td>0.97</td>
<td>0.52</td>
<td>0.90</td>
</tr>
<tr>
<td>Owner 10</td>
<td>0.72</td>
<td>0.67</td>
<td>0.49</td>
<td>0.67</td>
</tr>
<tr>
<td><strong>Total concentration of 10 largest owners</strong></td>
<td><strong>86.99</strong></td>
<td><strong>91.19</strong></td>
<td><strong>95.71</strong></td>
<td><strong>89.34</strong></td>
</tr>
</tbody>
</table>

Source: Analysis of authors according to the data from securities registries of FB&H and RS.

In each of the three observed corporation groups, the first and largest owner has a share greater than 50% on average, and also there are significantly more corporations where the first and largest owner has a controlling block of shares. The highest ownership concentration is in insurance companies, where the largest owner on average holds almost 3/4 of the total capital, while in banks s/he holds 2/3 of the capital.

In the analysis of relations with stakeholders in Bosnia and Herzegovina, the policy of management’s relations with all stakeholders was observed in terms of transparency of business operations (Table 2) and only non-financial corporations were analyzed.
Table 2

The policy of relations with stakeholders in non-financial corporations in B&H

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Federation of B&amp;H (n=49)</th>
<th>Republic of Srpska (n=38)</th>
<th>Bosnia and Herzegovina (n=87)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website</td>
<td>80.61%</td>
<td>94.74%</td>
<td>86.78%</td>
</tr>
<tr>
<td>Company’s general acts</td>
<td>22.45%</td>
<td>68.42%</td>
<td>42.53%</td>
</tr>
<tr>
<td>Report on overall business operations for the previous year</td>
<td>61.22%</td>
<td>80.26%</td>
<td>69.54%</td>
</tr>
<tr>
<td>Reports in foreign languages</td>
<td>20.41%</td>
<td>10.53%</td>
<td>16.09%</td>
</tr>
<tr>
<td>Sending reports to the entity stock exchange</td>
<td>94.90%</td>
<td>98.68%</td>
<td>96.55%</td>
</tr>
</tbody>
</table>

Source: authors

The analysis shows that most corporations have websites (80.61% in FB&H and 94.74% in RS), but regarding publishing of general acts, corporations in RS are considerably more active and responsible (22.45% in FB&H and 68.42% in RS), while the availability of reports in foreign languages is at a very low level in both entities. With respect to submission of reports to entity stock exchanges, this is where corporations are very responsible and almost all submit some reports to the entity stock exchange. When analyzing the transparency of business operations of the observed corporations in Bosnia and Herzegovina (Table 3), key business transparency standards, which are defined by the EU transparency directive, were observed, and these are:\(^1\)

a) uniform publication deadlines - four months after the end of the reporting period for annual financial reports and two months for interim financial reports;

b) annual reports should include audited financial statements and management report;

c) publications must be publicly available for at least five years, and semi-annual financial statements in accordance with IAS 34\(^2\) must include an additional management report;

d) publication of interim management reports for issuers of shares in the first and third quarter;

e) Mandatory publication on the Internet.

Compliance with transparency standards for the observed corporations is shown in Table 3.

---


\(^2\) IAS 34 Interim Financial Reporting. IAS 34 was issued in June 1998 and is operative for periods beginning on or after 1 January 1999.
Table 3

Transparency of business operations of non-financial corporations in Bosnia and Herzegovina

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Federation of B&amp;H (n=49)</th>
<th>Republic of Srpska (n=38)</th>
<th>Bosnia and Herzegovina (n=87)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business objectives</td>
<td>62.24%</td>
<td>68.42%</td>
<td>64.94%</td>
</tr>
<tr>
<td>Reports from shareholders’ meetings</td>
<td>50.00%</td>
<td>78.95%</td>
<td>62.64%</td>
</tr>
<tr>
<td>Reports on events of particular influence on financial operations</td>
<td>40.82%</td>
<td>47.37%</td>
<td>43.68%</td>
</tr>
<tr>
<td>Information on potential business risks</td>
<td>30.61%</td>
<td>36.84%</td>
<td>33.33%</td>
</tr>
<tr>
<td>Auditor’s report and opinion</td>
<td>38.78%</td>
<td>60.53%</td>
<td>48.28%</td>
</tr>
<tr>
<td>Publishing of semi-annual or quarterly reports</td>
<td>56.12%</td>
<td>68.42%</td>
<td>61.49%</td>
</tr>
<tr>
<td>Number of years for which reports are published</td>
<td>4.00</td>
<td>5.66</td>
<td>4.72</td>
</tr>
<tr>
<td>Published reports for five or more years</td>
<td>79.59%</td>
<td>92.11%</td>
<td>85.06%</td>
</tr>
<tr>
<td>Not having any published annual reports</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Source: authors

From all the observations, it can be concluded that the level of transparency of business operations in corporations in the Republic of Srpska is higher than in the Federation of Bosnia and Herzegovina; this especially applies to the period for which the reports are published, as well as the number of corporations that have published reports for 5 years or more. With regard to transparency of business operations, the Republic of Srpska currently has a significant advantage over the Federation of B&H, and it can be assumed that the main reason is the earlier adoption and continued development of the institutional framework for corporate governance.

3. MEASURING THE LEVELS OF CORPORATE GOVERNANCE IN THE WORLD

The biggest challenge, but also one of the main objectives of this study is to develop an adequate model (or index) for measuring corporate governance that should reflect the quality of corporate governance practices at the level of corporations in Bosnia and Herzegovina.

The selected and observed indexes based on which the index for this study is created have set scopes of application, and measure the level of corporate governance by the degree of fulfillment of the set criteria distributed into particular categories (Table 4).
Table 4

The structure of corporate governance measurement indexes

<table>
<thead>
<tr>
<th>Index name</th>
<th>Scope of application</th>
<th>Number of criteria</th>
<th>Number of categories</th>
<th>Rating scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Governance Quotient (CGQ)</td>
<td>S&amp;P 500, S&amp;P 400, S&amp;P 600, Russell 3000</td>
<td>63 criteria</td>
<td>4 categories</td>
<td>from 1 to 100%</td>
</tr>
<tr>
<td>S&amp;P Corporate governance score ili GAMMA score</td>
<td>USA and UK (only at the invitation of the corporation)</td>
<td>80 to 100</td>
<td>4 categories</td>
<td>from 1 to 100% (from 1 to 10)</td>
</tr>
<tr>
<td>GMI rating</td>
<td>Russell 1000, S&amp;P 500, S&amp;P 400, TSX 60, Nikkei</td>
<td>450 criteria</td>
<td>14 categories</td>
<td>from 1 to 100% (from 1 to 10)</td>
</tr>
<tr>
<td>DR rating – Deminor Rating</td>
<td>USA and UK</td>
<td>20 complex criteria</td>
<td>4 categories</td>
<td>from DR-1 (lowest) to DR-10 (highest) =&gt; scale values in 1/2 increments</td>
</tr>
<tr>
<td>Indeks DVFA – Scorecard for German Corporate Governance</td>
<td>German and other countries of continental Europe</td>
<td>47 criteria</td>
<td>7 categories</td>
<td>from 1 to 100% (from 1 to 8)</td>
</tr>
<tr>
<td>Indeks PFCG – Polish Forum for Corporate Governance</td>
<td>Poland - the highest OECD ratings for the development of corporate governance</td>
<td>60 criteria</td>
<td>9 categories</td>
<td>from 1 to 100% (from A to E - e.g. A, A-, B+, B, B-,...)</td>
</tr>
<tr>
<td>TRIS rating</td>
<td>East Asian stock markets</td>
<td>45 criteria</td>
<td>4 categories</td>
<td>from 1 to 100% (from 1 to 10)</td>
</tr>
<tr>
<td>Brunswick UBS Warbuk</td>
<td>Moscow stock market</td>
<td>20 subcategories (complex criteria)</td>
<td>8 main categories</td>
<td>from 1 for the best rated companies to 72 for the poorest</td>
</tr>
<tr>
<td>SEECGAN index</td>
<td>Corporate governance in Croatia</td>
<td>98 subcategories - questions</td>
<td>7 main categories</td>
<td>from 1 to 10 (ratings A, B, C, D)</td>
</tr>
</tbody>
</table>

Source: authors

Each of the observed indices measures corporate governance by analyzing the criteria fulfillment rate. Criteria are divided into specific groups or categories and each of the given categories has a different statistical significance (weight) in the overall rating. Based on these experiences, a framework for the development of a B&H corporate governance quality measurement index was defined.

The basis for formation of the index for measuring the level of corporate governance quality in Bosnia and Herzegovina is the index for measuring the level of corporate governance quality in Germany called DVFA (Scorecard for
German Corporate Governance\(^3\). The specificity of this index is that it can basically be adapted to B&H because of the similarities in characteristics of the corporate governance systems, but its full implementation requires adjustment of the criteria to entities’ corporate governance laws and codes.

5. MEASURING THE QUALITY OF CORPORATE GOVERNANCE IN BOSNIA AND HERZEGOVINA

The quality of corporate governance will be evaluated with six categories of set criteria. The corporate governance quality evaluation categories are:\(^4\)

I. Commitment to the principles of corporate governance and social responsibility,

II. Shareholders’ meeting,

III. Supervisory board/non-executive directors,

IV. Board of Directors – Management,

V. Audit and internal control mechanisms,

VI. Transparency of business operations.

The index developed for the analysis of corporate governance in Bosnia and Herzegovina is called LCG (abbrev. Level of Corporate Governance).\(^5\) It is

\(^3\) DVFA (2000.), SCORECARD FOR GERMAN CORPORATE GOVERNANCE - Standard DVFA Evaluation Method for CG, Deutsche Vereinigung für Finanzanalyse und Asset Management, Dreieich, more details on (http://www.dvfa.de/)

\(^4\) The number and types of categories and their weights in the overall assessment are adjusted to the 2004 OECD Principles of Corporate Governance, then the Corporate Governance Standards of RS from 2011 and the Corporate Governance Code for companies listed on the market of the Sarajevo Stock Exchange 2009. The measurement model and analysis of the obtained results were formed on the model of the Scorecard for German Corporate Governance and experiences related to indexes created on the basis of the Sarbanes - Oxley Act in the United States, Combined Code in Great Britain, as well as other attempts to measure the quality of corporate governance. The weight value was defined based on the existing experiences and results of studies of the importance of individual evaluation components for socio-interest groups and of their influence on the overall corporate governance quality.

\(^5\) The LCG index (the first version was called BHC\(\text{CoG}\)) was developed and tested as part of the author’s research for the purposes of scientific master’s thesis of the author Nikola Papac on banks in BiH, and was subsequently revised and adapted to changes in the institutional framework (the second version of the index was named the LCG Index). The LCG index was developed on the model of the BHC\(\text{CoG}\) index developed by the author for the purposes of analyzing the quality of corporate governance in banks in BiH in 2009, and for the purposes of the scientific master’s thesis defense. The BHC\(\text{CoG}\) index, as well as the LCG index, was developed on the model of the DVFA Index - Scorecard for German Corporate Governance, which was created for the needs of corporate governance analysis on German capital markets. The BHC\(\text{CoG}\) index was created entirely on the model of the DVFA index, while the LCG index took into account the policies and rules of the DVFA and BHC\(\text{CoG}\) indices, but for creating the criteria, the corporate governance codes of the Sarajevo and Banja Luka stock exchanges were precisely taken into account.

developed and tested on the model of the index Scorecard for German Corporate Governance, intended for German corporations whose shares are traded on the German capital market. For the purposes of this study, the first version of the index is completely changed and adjusted to the criteria set out in the 2004 OECD Principles of Corporate Governance, then the Corporate Governance Standards of RS from 2011 and the Corporate Governance Code for companies listed on the market of the Sarajevo Stock Exchange from 2009. The final form of the index structure is given in Table 5.

Table 5

<table>
<thead>
<tr>
<th>Ser. No.</th>
<th>Description and method of criterion evaluation</th>
<th>Number of criteria in category</th>
<th>Share/weight in overall assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Commitment to the principles of corporate governance and social responsibility</td>
<td>7 criteria</td>
<td>15%</td>
</tr>
<tr>
<td>II.</td>
<td>Shareholders’ meeting</td>
<td>9 criteria</td>
<td>15%</td>
</tr>
<tr>
<td>III.</td>
<td>Supervisory board/non-executive directors</td>
<td>7 criteria</td>
<td>10%</td>
</tr>
<tr>
<td>IV.</td>
<td>Board of Directors – Management</td>
<td>9 criteria</td>
<td>20%</td>
</tr>
<tr>
<td>V.</td>
<td>Audit and internal control mechanisms</td>
<td>5 criteria</td>
<td>10%</td>
</tr>
<tr>
<td>VI</td>
<td>Transparency of business operations</td>
<td>9 criteria</td>
<td>30%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>46 criteria</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: authors

The total and final assessment can be expressed in a number of ways, the first certainly being in the original form and values achieved by the analysis, and the other possibility is through a set of classes of the achieved values (three, five, seven or ten). The achieved ratings will be accompanied by the associated comments on the meanings of ratings, as well as identification of the factors that may affect the evaluation.

The final rating is established by summing the values achieved by each particular category in the overall rating, which could be presented in the form:

\[ \sum_{n=1}^{\text{category}} \text{assessment of corporate governance equality of the company according to the LCG index} \]

Evaluation is conducted once a year and is valid for a period of one business year (12 months), or for a period between two shareholders’ meetings. Ratings can be categorized in a number of ways; in most cases they are ten-level or five-level ratings, but they can also be descriptive assessments of the achieved corporate governance level. The structure of rating levels and description are shown in Table 6.
As shown in Table 6, the level of corporate governance is presented by the rate of fulfillment of the set criteria, which can be categorized in this case in five or ten levels.

The rating of corporate governance, as an important non-financial indicator of business operations, in any case is not a replacement for financial business indicators, nor will it ever be; it is primarily its supplement aimed at creating and increasing confidence in the observed corporation.

### 6. LEVEL OF CORPORATE GOVERNANCE MEASURED BY THE “LCG INDEX” IN CORPORATIONS IN BOSNIA AND HERZEGOVINA

The level of corporate governance quality was measured by the LCG index for 87 corporations in B&H, of which 49 from the Federation of B&H and 38 from the Republic of Srpska. For each corporation, measurement was conducted in three time periods, so it can be said that there were a total of 261 measurements or observations. Data for evaluation of corporate governance quality in corporations in BiH were obtained from corporate governance reports that were adjusted to corporate governance regulations and codes at entity levels.\(^6\)

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\(^6\)In the Federation of Bosnia and Herzegovina it is the Corporate Governance Code of the Sarajevo Stock Exchange, which was adopted by the Supervisory Board of the Stock Exchange at the 80th session held on 23 March 2009, after which they have been in use, while corporate governance reports are made in a document called Corporate Governance Questionnaire. In the Republic of
The level of corporate governance quality in B&H was analyzed in 87 corporations, of which 49 from the Federation of BiH and 38 from the Republic of Srpska. For each corporation, measurement was conducted in three time periods, so it can be said that there were a total of 261 measurements or observations.

Table 7
Level of corporate governance quality measured by the LCG index in Bosnia and Herzegovina

<table>
<thead>
<tr>
<th>Ser. No.</th>
<th>Index category</th>
<th>Weight value</th>
<th>FB&amp;H (49)</th>
<th>RS (38)</th>
<th>B&amp;H (87)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Commitment to the principles of corporate governance and social responsibility (7 criteria)</td>
<td>15%</td>
<td>5.49%</td>
<td>6.63%</td>
<td>5.99%</td>
</tr>
<tr>
<td>II.</td>
<td>Shareholders’ meeting (9 criteria)</td>
<td>15%</td>
<td>8.60%</td>
<td>8.26%</td>
<td>8.45%</td>
</tr>
<tr>
<td>III.</td>
<td>Supervisory board (8 criteria)</td>
<td>10%</td>
<td>4.35%</td>
<td>3.72%</td>
<td>4.07%</td>
</tr>
<tr>
<td>IV.</td>
<td>Board of Directors - Management (9 criteria)</td>
<td>20%</td>
<td>10.62%</td>
<td>10.95%</td>
<td>10.76%</td>
</tr>
<tr>
<td>V.</td>
<td>Audit and internal control mechanisms (5 criteria)</td>
<td>10%</td>
<td>5.41%</td>
<td>5.23%</td>
<td>5.33%</td>
</tr>
<tr>
<td>VI</td>
<td>Transparency of business operations (9 criteria)</td>
<td>30%</td>
<td>17.18%</td>
<td>18.55%</td>
<td>17.78%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>51.66%</td>
<td>53.33%</td>
<td>52.39%</td>
</tr>
</tbody>
</table>

Source: authors

The overall rating of corporate governance quality in B&H according to the LCG index is a 52.39% fulfillment of the prescribed criteria, so we can say that the overall rating for Bosnia and Herzegovina is weak to medium (C). This shows that only half of the total prescribed criteria are met. The first and third category are significantly below, at almost one third of the set standards for this category, while in all other categories, half of the total prescribed criteria are met.

With regard to comparison of entities, it can be clearly seen in Figure 1 that the level of corporate governance in both entities is almost the same.

Srpska, on 29 December 2005, the Securities Commission of the Republic of Srpska adopted a document titled Joint Stock Company Management Standards and they are nothing else but a version of the Corporate Governance Code for RS. Application of this document started on 1 January 2006. This document was changed in 2011, when the Securities Commission together with the Banja Luka Stock Exchange issued and published new Corporate Governance Standards (Official Gazette of the Republic of Srpska 117/11).
When analyzing Figure 1 in more detail, it can be concluded that the level of corporate governance quality by individual categories is very similar in both entities, and the existing differences for individual categories are less than 10%. The only significant difference is related to the first category “Commitment to the principles of corporate governance and social responsibility”, and the authors believe that the main reason of this difference (the value is greater in RS) is the fact that the Republic of Srpska earlier joined the process of developing an institutional framework for corporate governance (the first index in RS was adopted in 2006, and in FBiH in 2009).

If we observe only the descriptive statistics, we can see that values of the level of corporate governance range from 0 to 100%, and the study was conducted on 87 corporations (49 in FB&H and 38 in RS) in three time periods, so that we can say that 261 project observations were examined. Table 9 shows the descriptive statistics for the LCG variable.

<table>
<thead>
<tr>
<th>LCG</th>
<th>Valid</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>261</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>52.3898</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>53.7500</td>
<td></td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>13.26799</td>
<td></td>
</tr>
<tr>
<td>Skewness</td>
<td>.027</td>
<td></td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-7.32</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>25.60</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>86.20</td>
<td></td>
</tr>
</tbody>
</table>

Source: authors
The LCG indicators range from 25.60 to 86.20 with arithmetic mean of 52.39. The skewness and kurtosis indices indicate that the distribution of the LCG variable frequencies has an approximately normal pattern, which can be seen on the histogram (Figure 2).

![Histogram of LCG index results in Bosnia and Herzegovina](source: authors)

By checking the boxplot graphics, not a single outlier (extreme value) was observed for this variable, which could be assumed based on the presented form of frequency histogram (Figure 2), so it can be concluded that the distribution of frequencies of the LCG index values for both entities in Bosnia and Herzegovina has a normal form.

If we consider all the above, we can outline several recommendations related to the application of the LCG index and the improvement of corporate governance in Bosnia and Herzegovina:

a. the index may be applied to corporations whose shares are listed on the capital market (stock exchanges in Sarajevo and Banja Luka);

b. the basis for applying the index is the adoption of the entity and the development of its own corporate governance code by each corporation;

c. it is necessary to harmonize the regulatory frameworks for corporate governance, between entities and inside entities, with codes of corporate governance;

d. conduct constant market education on the importance of corporate governance.
All of this shows us that the issues related to corporate governance are very similar in all countries in the region and point us to similar activities which are needed to develop corporate governance. (see: Baldaccino, P.J., Baldaccino, J., Bezzina, F. i Tipurić, D. (2015)).

7. CONCLUDING CONSIDERATIONS

Corporate governance involves establishing a coordination mechanism between different stakeholders in a way that will satisfy the needs of each of the stakeholders, while ensuring the survival of the corporation. Measuring the quality of corporate governance means to define the criteria on which the relationship between key stakeholders in the corporation is based and assessing the degree of fulfillment of these criteria. The criteria are defined by supranational recommendations (primarily by OECD principles) and national legislative and non-legislative acts (national corporate governance codes). Whatever the value of the final grade is higher (closer to 100%), the level of fulfillment of the prescribed criteria is higher, so the quality of corporate governance is higher and vice versa.

The study sample consists of 87 corporations from the entire territory of B&H whose shares were traded on capital markets during the study period. In FB&H sample consists 49 corporations and 38 are in RS. The time scope of the study or the period for which the study was conducted is 2011, 2012 and 2013. Considering that the data on corporate governance and financial performance were measured and collected for three time periods (2011, 2012 and 2013), that resulted in a panel data set of 261 observations (87 corporations x 3 years of observations of developments).

The overall rating of corporate governance quality in B&H according to the LCG index is a 52.39% fulfillment of the prescribed criteria, so we can say that the overall rating for Bosnia and Herzegovina is weak to medium (C). This shows that only half of the total prescribed criteria are met.

Regarding the comparisons of the entity, it can be clearly seen that the level of corporate governance in both entities is almost the same.

All this shows that corporate governance as a theoretical concept and phenomenon is still at the development stage: the institutional framework in both entities is not yet fully adapted to scientifically proven and confirmed standards of good practice or international regulations, while practice still does not fully understand the purpose of this concept and still refuses to adjust to new standards and practices.

Key recommendations for corporate governance development and enhancement are that corporations in both entities need to adopt their own corporate governance codes and align them with entity codes. Also the entities have an obligation to align the regulatory framework between themselves and need to implement ongoing education and awareness about the importance of corporate governance.
Benefits of using the LCG index are the ability to clear inefficient and more efficient corporate governance segments and the ability to actively influence the improvement of individual segments. Such an index application will contribute to raising awareness of corporate governance on the one hand but will contribute to the development of corporate governance significance on the other.

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Journal paper


Other publication

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was adopted by the Supervisory Board of the Stock Exchange at the 80th session held on 23 March 2009

Corporate Governance Standards (Official Gazette of the Republic of Srpska 117/11)


Legal framework related to legal position of companies in Bosnia and Herzegovina.


Internet resource

CONTEXT-APPROPRIATE IMPLEMENTATION OF BLENDED LEARNING IN HIGHER EDUCATION IN WESTERN BALKANS

Preliminary communication
UDK: 37.018.4:004:378
JEL classification: A22, D83, I23

Abstract
This paper discusses the challenges of context-appropriate implementation of blended learning in contemporary higher education. The faculty analyzed is of economics and management. Having in consideration that the 21st century professors are facing a continuous challenge to co-create a learner-friendly class environment, and maximize the educational outcomes, special attention has been paid to the blend composed for contemporary teaching, learning and communication; accompanied by existing ICT disruptive technologies and E-learning platforms, combined with the traditional educational processes and vehicles. Crucial challenge in this context is designing the optimal mix of applicable disruptive technologies, having in mind constricted funding, high competitiveness in the higher education, specific student profile etc. The blended learning ‘mashup’ investigated from theoretical and practical point of view has been sustainably implemented in a Western Balkan’s higher education institution for several academic years. Some key findings and lessons learned in this context are presented further in the paper.

Keywords: blended learning, instructional technologies, educational management
1. INTRODUCTION

The immense ICT progress leads to inevitable changes in the socio-cultural and socio-technical environment, causing tectonic movements in the communication and collaboration tools and human behavioural patterns. It is of crucial importance to understand that these changes affect people’s everyday behaviour, and their behaviour in working and learning environments. In information-rich, creative world with shifting mindsets, “we are active agents in value co-creating service systems” (Vargo, Maglio, & Akaka, 2008), being able to grow together, with appropriate socio-technical setup.

Higher Educational Institutions (HEIs) are perfect places where the last chance to equip young adults with what is needed in terms of knowledge, skills and competences for the real world, and it is at teachers’ discretion. (European Commission, 2005) (European Commission, 2008) (European Commission, 2015a).

The objective of contemporary higher educational instructor, that is the focus of this research, is to provide up-to-date, modern, free of charge and accessible channels of instruction, communication and collaboration with the students. That inevitably leads to effective learning outcomes as well as improved cognitive skills, generic competences, personal capabilities, technical abilities, awareness, ICT and language skills, digital literacy, and in general, communication and transferable skills (European Commission, 2015a) (Rees, Forbes, & Kubler, 2006).

Contemporary mobile students enjoy the benefits of globalization and are completely capable to compare the instructional methodology applied in universities worldwide – to demand something similar from their home universities. Students nowadays have increased expectations regarding the instructional methodology used in the educational processes, since they extensively apply it in everyday lives, completely aware that it is not too difficult for the instructors to adopt it and apply it in the instructional processes. According to the motivational theory of expectancy (Vroom, 1964), student’s learning motivation could be significantly decreased if professors and instructors keep to the traditional ‘ex-cathedra’ teaching only, and practice mainly conventional methods and forms of communication, teaching and assessment. Practice offers extremely positive effects when the instructors are flexible enough to understand the needs of the contemporary student and make efforts in terms of providing the student-friendly environment, though utilisation of E-platforms for communication/collaboration, and blend it with the instructional methods that are traditionally used in higher education.

In designing the research approach, the generic student profile has been defined, and major highlights in this context are the following: typical student of XXI century is a representative of Net-generation. The traits of the Y-generation are somewhat different than their teachers’. Their calling is to work collaboratively, creatively, innovatively, constantly challenging pedagogy, teacher-centred approach towards learner-centred one, their global touch
introduces norms as freedom of thought, movement, speech, action; they tend to customize, personalize, mix, integrate entertainment, play and work. Along with their predecessors (who continue lifelong learning practices) the X- and Y-generation are considered as a value co-creators. (Hobart, 2014)(Seppanen & Gualtieri, 2012)(Rendell, Michael, 2011)(Next, 2010) (Login et al., n.d.).

We are investigating a HEI in Western Balkans, in the field of economics and management. The instructional design in the country of interest adheres to ECTS principles and national regulations (European Commission, 2015b), attempting to incorporate lectures, examinations, projects, collaborative work, class participation, presentations, group and team work, as well as the appropriate personalized grading according to diverse groups ranging from 5 to 200 students.

The methodology applied in this context, that enables continuous adaptation to changing environment while facilitating open socio-technical system towards goals, is Petrevska Nechkoska’s Tactical Management Information Systems and Adaptability method (Petrevska Nechkoska, Poels, & Manceski, 2016) based on Haeckel’s Sense-and-Respond framework (Haeckel, 1999) accompanied with Mojsovska Salamovska’s work on performance measurement in non-business organisations (Mojsovska Salamovska, 2015), based on Balanced Scorecard Model (Kaplan, 2010).

When observing the performance measurement in context of higher education of economics and management, the Balanced Score Card perspectives has been taken in consideration (Kaplan, 2010), as a contemporary model that takes in consideration four major perspectives in integrative manner, in order to achieve maximum organisational performance. The student perspective is observed as a customer perspective, and in the context of student-centred learning, this is a major perspective that needs to be seriously taken in consideration. Next, the processes perspective has been integrated with the financial (fiduciary) perspective, in terms of identifying effective and feasible solutions at minimum or no costs, due to financial limitations caused by fiduciary nature of state education; and last but not least, learning-and-growth perspective has benefited since the main objective of the project has been to address the learning and growth of all stakeholders, with primary focus on the students.

The main purpose of system design (red arrow in Fig.1) is to communicate/collaborate effectively according to student’s profile and expectations. The adaptability engine of the Sense-Interpret-Decide-Act Loop has been providing continuous sensing on the successfullness of the project, allowing proper facilitator action.
2. **THE MASHUP OF E-PLATFORMS - A MODEL OF BLENDED LEARNING INFRASTRUCTURE**

In the theory and practice, the terms *blended learning* and *hybrid learning* are often used interchangeably, and sometimes no clear distinction could be made between them. According to Bonk and Graham, the blended learning system is a combination of face-to-face instruction and computer-mediated instruction. The Sloan Survey of Online Learning defines the blended learning as a “course that is a blend of the online and face-to-face course.” (Means, B, Toyama, Y, Murphy R, Baki M, 2013, p. 5).

In the context of this research, one of the most acceptable definitions that reflects the research approach and the content is the following - blended learning is a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technology enhanced active learning possibilities of the online environment. It is a concept that fundamentally redesigns the traditional instructional models, and following key characteristics are emphasized: (Dziuban, C, Hartman J, Moskal P, 2004, page 3)

- a shift from lecture to student-centered-instruction, in which students become active and interactive learners;
- increasing the interaction between student-instructor, student-student, student-content and student-outside resources, and
integrating the formative and summative assessment mechanisms for student and instructor.

The term ‘mashup’ in this context’ describes the approach that combines and integrates diverse digital and traditional communication/collaboration channels, platforms and tools to serve a single purpose – effective communication/collaboration with the user, that further maximizes the learning performance. This term has been derived from web-development terminology, and denotes “something created by combining elements from two or more sources as a web-service or application that integrates data and functionalities from various online sources” (Merriam-Webster, 2016). In this case, the relevant environment is the Higher Educational Institution, the Teacher is a provider (facilitator), and THE Student is a collaborator (customer).

Figure 2 Mashup of E-platforms and traditional channels used in the project per each class/purpose

Source: Authors’ research

The actual Mashup (Fig.2) consists of E-platforms and traditional channels: (1) Moodle as an E-learning platform, has been set up as a part of a master thesis project (Petrevska Nechkoska, 2012), mainly used for placement of materials and asynchronous, usually one directional teacher-students communication; as well as bi-directionally through student assignments, forums and other activities. The need for fast, immediate communication where confirmative response was expected (2) has been addressed by creating closed Facebook groups per course. The necessity for (3) storage space, (4) polls, collaborative writing and asynchronous remote project work has been satisfied by using the Google Drive, Sheets, Forms, Docs, and similar tools. Skype (5) served as a synchronous remote team communication and (6) free mobile apps for instant messaging have been used for urgent matters. All of these complemented the already used channels of E-mail correspondence (7) via
official/unofficial E-mail addresses and (8) teaching and contact hours, as well as the consultations person-to-person on-campus. Fig. 2 illustrates the model of participation and communication/collaboration per channel according to the teachers who deployed this approach (time spent for each course, on the specific communication/collaboration channel). The timeline for the introduction of the mashup is described in Fig. 3.

**Figure 3 Timeline for mashup introduction**

Source: Authors’ research

The actual implementation of E-platforms has a significant impact on improving the academic and administrative processes at universities. It reduces the activities related to typing, printing, publishing of materials; keeping course archives etc. It minimizes the use of paper and/or saving space for keeping the records and assignments. From managerial point of view, it has a positive impact on rationalization of number of working hours and/or employees (such as junior teaching assistants, administrative staff etc) and overall organisational performance of educational institutions.
2. KEY BENEFITS AND CHALLENGES FOR STAKEHOLDERS OF APPLYING THE ELECTRONIC/TRADITIONAL MASHUP

The specific approach described in this project, has been deployed by professors/lecturers at the Faculty of Economics in Prilep, at University of “St. Kliment Ohridski”, Bitola.

Introduction of E-platforms, individually, or as a blend/mashup, brings benefits and challenges for the students, and the instructors. The starting point in designing the optimal mix/blend of E-platforms and traditional channels aimed for students is their availability, and the frequency of usage by the students and teachers (instructors).

Why emphasizing the “optimal mix/blend”? Insisting on use of single platform, such as Moodle (Benta, Bologna, & Dzitac, 2014) (Kwok, 2014)(Beatty & Ulasewicz, 2005) (Wang, Li, & Gu, 2004), is more convenient for the instructors – it requires managing a single site. But, having in consideration that it is linked with accounts creation, registration of users and other technical activities, it steel requires a lot of coordination until all the students in the groups(200+) get their Moodle user-accounts and a necessary training on how to use this platform.

However, the educational and communication effectiveness is being significantly increased if this platform is accompanied by another one, ex. Google Docs, Google Classroom, or a combination of several platforms. This is extremely useful in terms of working on group assignments, enables creation of documents and forms for research support, and it is a perfect tool for data gathering and analysis, which saves the students from a lot of workload, enabling to pay greater attention to the analysis and interpretation of information, stimulating creative and critical thinking, instead of performing time-consuming routines related to the research processes.

The combination of Moodle and Facebook, for instance, rapidly increases the effectiveness of communication (Reuben, 2008), because vast majority of students have Facebook profiles, which enables to create closed groups for the courses, even without getting connected via this network privately, in order to protect students’ and instructors’ privacy. So, Facebook has been successful for sharing links and useful and short information. But for further communication, uploading the attachments, keeping the course archives, Moodle would be an extremely good solution.

One of the greatest benefits from the mashup of platforms is that it enables achieving the educational objectives by emphasizing the creative stages of the research, and also, incorporating the research projects in the student’s assessment. Students are capable to complete quality research projects and present their results in their examinations, something that could not be achieved in a traditional classroom in a single semester.

The main benefits of utilization of electronic/traditional Mashup in context of blended learning are the following:
− Easy access at no costs via various vehicles, even smart phones
− Course privacy can be significantly increased, by adjusting privacy settings of the group. Various content could be shared/exchanged, aimed for the specific course or a group of students, which leads to higher quality communication between the instructor and the group
− Increased effectiveness of team work in a virtual environment
− Maximizing student’s engagement, participation and interaction (generating virtual discussions, pools)
− Enabling remote students (learners) to actively participate in the educational processes, being virtually included, even assessed and graded
− Instant communication and getting feedback, real-time student<>instructor communication, effective and easy delivery of information and additional course content;
− Opportunities for students to actively participate in adjustment/customization of the course with suggestions, content,…
− Valorisation of extracurricular activities of students and additional workload
− Easy course evaluation, getting valuable feedback for next course instances
− Increased overall student satisfaction

The main challenges in mashup application in educational practice in the context of this research project are categorized as (1) technological/organizational and (2) mindset shift.

One of the issues for getting the functional e-learning platform was migrating from in-house Moodle maintenance towards hosting. The conflicts among the various free, licensed, open-source applications throughout the first year of implementation have generated significant downtime of the application server that needed to be frequently restarted. User access attempts resulted with frequent ‘404 error’ which proved problematic for future growth and reference of the e-learning platform. The hosted option accomplished ‘set-and-forget’ because the engagement in technical troubleshooting has reduced to 5%.

Another important challenge when administering platforms for 250+ new users per academic year in different courses is how to acquire, generate and communicate user-accounts and manage access privileges. Initially, it started with automatic generation of user accounts for all newly enrolled students receiving official faculty e-mail address; and individual enrolment according subject lists. This proved inefficient, because the students didn’t quite use the faculty e-mails and had hard time adjusting so, even though professors urged them. This activity resulted with many Moodle dormant accounts that have been duplicated with private emails afterwards. Following years the process was more needs-based and the user-accounts were generated with any active E-mail account (Fig.4).
The hardest obstacle to cross appeared to be the mindset shift, and to motivate and convince the professorial staff to utilize the potential of the electronic platforms. At the time the pilot project was implemented, at the first cycle of studies (undergraduate), 6 out of 80 courses officially utilized some of electronic platforms mentioned. Second cycle recorded no use of single platforms and/or mashup, and the third cycle studies (PhD) had 4 subjects using e-platforms (out of 7 possible). For a comparison, the international PhD studies at third cycle recorded 9 out of 12 possible subjects (i.e. their respective lecturers) using the electronic platforms. The increase of use was recorded mainly at the 3rd cycle of university studies (57%), especially the international double-degree doctoral program, with international lecturers employed (75%), being already familiar with the integrative usage of remote communication and collaboration platforms. Students, as representatives of the Net-generation, had very swift-shift towards use of e-platforms. Communication via Facebook, on the other hand, was a significant challenge, both for students and teachers, due to the difficulties in private/professional networking.

As a formal indicator for the perceived quality of teaching and course organization, that could be linked with blended learning implementation, it should be emphasized that the professors that implemented not only a single E-platform, but the integrated Mashup at their courses (2 out of 3 lecturers, with total of 5 out of 6 undergraduate classes using e-platforms in integrative manner), received significantly higher evaluation scores from the students, compared to the institutional average at a Faculty level, in the official University student assessment (targeted at professors, academic programs, quality of teaching and learning, etc) (Faculty of Economics Prilep Macedonia, 2015). (150-200). Also, these teachers had highest number of students on their elective courses (Fig.5).
The feedback gathered from the students through course self-evaluation conducted as a course follow-up by professors, using a method of anonymous online survey, has been remarkable. “Reachable, accessible, purposeful, fruitful, up-to-date, motivational, ‘cool’, collaborative, supportive, open, funny…” – were only several of the attributes expressed by the students. This was a kind of verification, but also a future communication line that students maintained; motivational gatherings or just keeping in touch with lecturers who made the effort to talk and walk in their shoes.

The future brings challenges for sustaining and multiplying the use of these ideas in various other contexts. The principles of this electronic/traditional Mashup can be further expanded for use in other spheres, such as lifelong learning systems, primary and secondary education, adult learning etc.

3. CONCLUSIONS

The benefits of blended learning implementation in higher education of economics and management exceed the obstacles and/or impediments for implementation. In this project, special attention has been paid to the usage of E-platforms that are offered free of charge, in order to emphasise that the financial limitations, often overestimated by managerial structures as major obstacles in terms of feasibility of certain projects, are not necessarily the main obstacle for implementation. In this case, the mashup of electronic platforms could be easily applied at no cost, and maximum effectiveness and satisfaction could be achieved for all participants. It is the human factor that is crucial in this context, and the standpoint in measuring performance in education. We are continuing the research in the next academic years, promoting the mashup for further uptake, especially from the side of the lecturers. The students have
almost no problems with the mashup configuration because it provides them 24/7 access to information, bi-directional communication channels along with the traditional means. Future research would be challenged with the reasons for lack of proactivity on the lecturer’s side to combine ICT technologies with traditional approaches both in the instructional design and in the communication channels, in Western Balkans context. Another issue of great interest is the comparison of the developed/developing countries systems that cultivate a culture of progress in socio-technical terms, and determining which parts of the system design of roles-and-accountabilities for electronic/traditional mashup in higher education need to be improved, in order to ensure that the systems would accomplish their purpose.

The performance of contemporary education must be assessed by implementation of comprehensive methods and models that incorporate all relevant perspectives, and emphasizes the student’s perspective above all. Blended learning is an excellent concept that enables to achieve maximum effectiveness at minimum costs, which is a classical generic definition of performance. This problematic should be incorporated in upper-level strategic documents in higher education, and it should capture the attention of upper university managerial levels. Successful uptake of blended learning model on organizational level requires significant organizational commitment, top-down initiative, decision and management. Otherwise, it would remain a matter of intrinsic motivation of academic staff.

REFERENCES


MANAGERIAL STRESS – EFFECTS AND CONSEQUENCES

Review
UDK: 159.944.4:005
JEL classification: I12, M12, M54

Abstract
Modern managers operate in terms of globalization which presents them with larger and more difficult challenges that sometimes are not in accordance with capabilities of an individual, causing stress. Some amounts of stress can be effective in the work performance of an individual, but problem arises when the amount of stress exceeds a certain critical point and leads to the burnout syndrome, whose victims are mostly managers. The roles of managers, their skills, functions and modern management trends are determinants of every manager’s job from which various stressors arises, i.e. sources of stress at work. Depending on their intensity and frequency, in rare cases stressors motivate the manager, while in most cases, they result in managerial stress. The biggest consequence of continuous exposure to this type of stress is popularly called the burnout syndrome.

Keywords: managerial stress – effects and consequences, burnout syndrome, stress management

1. INTRODUCTION

With faster and greater development of society, modern technology and changes in the sphere of economic, social, cultural and communicational life, work becomes much simpler and faster. However, there is one component that does not circumvent any business– stress. Unlike our ancestors, the stress
of the 21st century is mostly mental and emotional. Ten years ago, World Health Organization (WHO) declared stress in the workplace worldwide epidemic. Since then workplace stress has increased even further due to deeper global crisis and unemployment. Managerial work, regardless of the hierarchical level, can be observed as a link between changes in the internal and external environment, and managers as the heart of the whole organization. In order for an organization to become competitive and successful in the market, the manager must know how to successfully balance the changes, which often leads to stress. For a good reason, management is considered to be one of the most stressful jobs where doses of stress that job causes are popularity called “managerial disease”. Accordingly, the biggest consequence of excessive stress exposure is the burnout syndrome.

2. MANAGERIAL STRESS

Stress is an adaptive response mediated by individual differences and / or psychological processes, which is result of an action from an environment, situation, or event that poses excessive and unusual psychological and / or physical demands on a person (Bahtijarević Šiber, 1999).

From this definition, the following determinants of stress can be drawn: stressors - objective circumstances or conditions that sets specific requirements and causes stress; the individual and personal characteristics that condition different perceptions and experiences; adaptive response - reaction to the challenge from the environment i.e. stressor.

It is generally known that the stress can have a negative impact on an individual’s mental and physical health. The most important sources of stress are: intrinsic to the job including factors such as poor physical working conditions, work overload or time pressures; role in the organisation including role ambiguity and role conflict; career development including lack of job security and under/over promotion; relationships at work including poor relationships with supervisors or colleagues, an extreme component of which is bullying in the workplace; organisational structure and climate including less involvement in decision-making and office politics (Cirjaliu, B., Draghici, A., Jitarel, A., 2016).
Figure 1 Job demands and control, by country


This figure shows that workers in Turkey, Slovenia, Cyprus, the Czech Republic, Germany and Greece are in the quadrant of “job strain” – they have high levels of job demands and low levels of job control. British workers are in the “passive work” quadrant, with relatively lower job demands and lower job control compared to the EU average. However, it is also clear from the figure that British workers are close to the average levels of job demands and job control in the EU-27 countries. These results suggest that while Britain is not among the countries with the highest levels of work stressors, it is also not the country with lowest levels of work stressors. (Chandola, T. Et al, 2010)

In June 2008, the American Psychological Association commissioned its annual nationwide survey to examine the state of stress across the country and understand its impact. In addition, two omnibus surveys, one in April and one in September 2008, were conducted to get a point-in-time measure about sources of stress nationwide. (https://www.apa.org/news/press/releases/2008/10/stress-in-america.pdf)

Figure 2 Sources of stress in USA, 2008

Money and the economy are top the list as sources of stress for eight out of 10 Americans (81 and 80 percent respectively). Other stressors affected by the declining economy are considered significant sources of stress for two-thirds of Americans, including work (67 percent), health problems affecting the family (67 percent) and housing costs (62 percent). Job stability in particular is a significant source of stress for more than half of people (56 percent). (https://www.apa.org/news/press/releases/2008/10/stress-in-america.pdf)

In October 2006, Center For Creative Leadership conducted a research “The Stress of Leadership”. They received more than 160 responses to the in-class survey and 70 responses to the Internet survey. The typical respondent was a male between the ages of 41 and 50 representing upper-middle management or the executive level. (http://www.ccl.org/wp-content/uploads/2015/04/StressofLeadership.pdf)

<table>
<thead>
<tr>
<th>SOURCE OF STRESS</th>
<th>PERCENTAGE</th>
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<tbody>
<tr>
<td>Resources/Time</td>
<td>28%</td>
</tr>
<tr>
<td>Developing Others</td>
<td>15%</td>
</tr>
<tr>
<td>Establishing and Maintaining Relationships</td>
<td>11%</td>
</tr>
<tr>
<td>High Expectations</td>
<td>10%</td>
</tr>
<tr>
<td>Personal Insecurity</td>
<td>10%</td>
</tr>
<tr>
<td>Team/Collaboration</td>
<td>8%</td>
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<tr>
<td>Change Management</td>
<td>6%</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>6%</td>
</tr>
<tr>
<td>Lack of Clarity from Above</td>
<td>3%</td>
</tr>
</tbody>
</table>

Figure 3 Leadership demands that cause stress


This figure shows that the resources/time and developing others are major sources of leadership stress. 28 percent of responses described having a lack of resources and time. Stress is caused by trying to do more with less, and to do it faster. Workloads, budget cuts and travel are demands that create stress. Developing others (15 percent) is another leadership demand causing stress. Motivating employees, resolving conflicts and providing feedback were examples of stressful leadership demands. (http://www.ccl.org/wp-content/uploads/2015/04/StressofLeadership.pdf)

Personality is an important moderator in experiencing and responding to stress, so we can distinguish two different personality types, Type A and Type B. Personality types A are individuals who tend to be very competitive and self-critical. They seek to achieve goals without feeling joy in their efforts or accomplishments and often feel the presence of life imbalance. That is why they are highly engaged in work. Type A people are sensitive and tend to exaggerate; they have a constant sense of urgency; they are in constant struggle against time.
and become impatient for delays and unproductive times; they are trying to do more things at once and often see the worst in others, showing anger, envy, and lack of compassion (https://www.simplypsychology.org/personality-a.html). While on the other hand, type B personality is one that is less prone to stress, easy going, work steadily, enjoy achievement, modest ambition, and live in the moment. They are social, creative, thoughtful, procrastinating. Individuals who possess Type B personality are associated with the following behavioural traits: they are not concerned about time; they compete for fun, not to win, never in a hurry and have no pressing deadlines, does not brag, focus on quality rather than quantity, laid back and live stress-less life (http://keydifferences.com/difference-between-type-a-and-type-b-personality.html).

In the late 1970s of the 20th century, a stress research was conducted. Aim of the research was to define managers’ observation what is most stressful for them at work and find out their methods of struggling with stress. The study offered the following results, viewed from the manager’s point of importance: excessive workload and accompanying time loads and unrealistic implementation deadlines, the disparity between what to do and what the manager can do with the general organizational climate and lack of support during job execution (Rosić, R., 2007).

Stress is not the problem but is a modern management syndrome that arises when job demands are greater than individual job opportunities. Every manager has to know himself and achieve an appropriate level of stress through self-management activities. Managing yourself implies reaching a healthy level of stress as the manager accepts responsibilities himself. Often happens that manager is relieved of a significant amount of stress just by careful prioritization.

The stress of modern manager is not an illusion but it is real and inevitable for everyone involved in modern management. This stress is not only characteristic for the managers but also for their superiors who are exposed to stress. Due to numerous goals achieved while they have to direct their work on subordinates who are focused on their personal needs and desire for their own progress.

Women managers may be particularly stressed out because, in addition to being responsible for raising children and doing housework, they also strive for men-dominated organizations. Others can negatively look at professional and capable women managers while organizational policies sometimes leave women managers with fewer promotion opportunities. As a result, women may be faced with frequent job challenges and less social support. Also, women managers earn less than their male counterparts. This imbalance in rewarding effort can lead to tense reactions (Rosić, R., 2007).

European Agency for Safety and Health at Work has conducted extensive research whose aim was to define how European workplaces manage safety and health risks in practice. The ESENER research included 31 European countries, including all 27 members, the UK, Turkey, Norway and Switzerland. More than 36,000 conversations were made with managers and health and safety
representatives in companies which have ten or more employees, in private and public organizations, in all sectors (except agriculture, forestry and fishing). The research collected the views of managers and employees across Europe and provided key information how European companies currently manage health and safety issue with a special focus on relatively new psychosocial risks such as workplace stress, violence and abuse. The ESENER study has shown that job creation workplaces are more likely to successfully implement health and safety measures. This is especially case with smaller jobs positions where employee participation is important for successful management of psychosocial risks.

Measures to resolve psychosocial risks such as violence, stress and abuse are applied more often in companies that consult with their employees. The aim of the research was to help companies to deal with stress more effectively and safely and the research results were (Baraba, G. 2011):

- 79% of managers in Europe are worried about workplace stress and less than a third of companies have stress management procedures
- Growing concern in European businesses is related to psychosocial risks such as stress, violence and abuse, Croatia is in the European average
- 42% presidents of board believe that resolving psychosocial risks is far more difficult than other issues of security and health
- The main obstacles to in resolving security and health issues are lack of resources (36%) such as time, staff or money and insufficient awareness.

In February 2017 Talentor Croatia conducted a research „Stress in management positions“. The aim of the study was to examine the most frequent stressors in managerial positions and examine the tendency to professional burnout syndrome. The survey was completed by 384 executives (34% directors and management, 46% middle management, 16% lower management and about 2% of unemployed managers) (http://www.posao.hr/clanci/vijesti/trziste-rada/rezultati-istrazivanja-stres-na-rukovodecim-pozicijama-talentor-hrvatska/9106/). The research has shown that the biggest stressor for executives in Croatia is dismissing workers. This information is not surprising since in the last five years Croatia has had a big wave of dismissing employees. Permanent breaks and interruptions in work and undefined goals by the owner or management are defined as major stressors. Research also showed some gender differences. These three basic stressors, according to self-assessment, are more pronounced at female managers than at male managers. Overtime work and salary also represent greater stresses for women, which is also easily interpreted through the still traditional division of jobs and care of the household that exists in these areas. The female executives are still less paid than the male executives. As a result of work-related stress, there is a professional burnout syndrome manifested through emotional exhaustion, depersonalization and a sense of reduced personal achievement. The conducted research has not shown that executives feel burnout syndrome. Further on, the research showed that executives in Croatia are Type A personality, which means that
they are constantly struggling to achieve more and more in less time, as they are competitive and ambitious but more exposed to the risk of heart attacks (http://www.posao.hr/clanci/vijesti/trziste-rada/rezultati-istrazivanja-stres-narukovodecim-pozićijama-talentor-hrvatska/9106/).

According to Center for Creative Leadership, the major findings of research “The Stress of Leadership” included: (http://www.ccl.org/wp-content/uploads/2015/04/StressofLeadership.pdf)

- 88% of leaders report that work is a primary source of stress in their lives and that having a leadership role increases the level of stress
- More than 60% of surveyed leaders cite their organizations as failing to provide them with the tools they need to manage stress.
- More than two-thirds of surveyed leaders believe their stress level is higher today than it was five years ago
- Nearly 80% of surveyed leaders state they would benefit from a coach to help them manage stress
- A lack of resources and time are the most stressful leadership demands experienced by leaders. Stress is caused by trying to do more with less, and to do it faster
- Leaders experience stress equally between their bosses, peers, direct reports and customers, but the reasons for the stress are different depending on the source
- Physical exercise is the most commonly cited method leaders use to manage stress, yet only 10 percent of responses from surveyed leaders indicate their organizations provide access to gyms or workout facilities
- More than 90 percent of leaders cite they manage stress by temporarily removing themselves, either physically or mentally, from the source of their stress
- Most leaders use a variety of sensory pursuits, or physical stimuli, to manage stress regardless of the source.

The strategies and methods of reducing stress and its consequences can ultimately be divided into two groups (Bahtijarević – Šiber F., 1999):

- Individual - focused on individual problems, helping individuals to easily overcome stress. There are two reasons why organizations are involved in stress management programs of their employees. Firstly, every organization is largely responsible for creating stress and as such should help resolve it. Secondly, employees who experience less stress and manage it easier are generally more successful.
- Organizational - they are directed to the organization and change the environment that creates stress, reducing stress conditions and eliminating work and organizational internal and external stressors. An important feature is that they are focused on the organization as a whole i.e. on all employees.
Some of the individual stress management strategies advise that employees should make a daily list and plan actions in accordance with it, make regular breaks during the job to relax. With quality time management, employees can achieve their goals timely and perform job tasks avoiding stress. Employees should also have an optimistic approach to work by strengthening self-awareness, self-confidence and self-control in the workplace and avoiding contact with negative employees. Employee counselling is a very good strategy for overcoming employee stress. Through counselling, employees can become aware of their strengths and how to develop those strengths; their weaknesses and how to eliminate them, and can develop strategies for behavioural change. On the other hand, organizational stress management strategies require fostering organizational communication with employees because effective communication can change employee views. They also stimulate employee participation in decision making and are enabling employee’s greater independence, meaningful and timely feedback and greater responsibility. Organizational goals should be realistic, stimulating and special, and employees should be informed about whether they meet those goals. In accordance all this, it is necessary to create a fair and safe working environment (http://www.managementstudyguide.com/employee-stress.html).

3. THE BURNOUT SYNDROME

The burnout syndrome is in general sense of exhaustion that can develop when a person experiences too much pressure and too little source of pleasure at the same time. This is increasingly present, potential danger associated with a large number of jobs in modern companies and is considered to be the ultimate consequence of stress. It is a combination of the accumulated physical, mental and environmental pressure of individuals who are no longer able to respond to the requirements of their field of activity. Ultimately, we can talk about three symptoms of combustion: emotional exhaustion, depersonalization and reduced efficiency - combustion at work is manifested by decreasing efficiency and success (Cuculić, A. 2006).

Typical victims of the burnout syndrome have been occupied far beyond the average in their workplace for years; they were constantly burdened with obligations and in constant race with time but had everything under control. Those persons have always relied only on their own strengths and wanted to accomplish perfectly and all requirements perfectly. Typical candidates for the burnout victims can be divided into three categories (Bahtijarević – Šiber, F., 1999):

− The first category - people and idealists of extreme motivation. There are also managers with the “I must succeed” attitude that often suffer from that effect
− the second category are managers whose goal is to win and who never see the final result and are often dissatisfied with achieving new targets
Third category - those who set aims that are too high for them.

Among the burnout syndrome victims the most numerous are middle and high position managers, directors, doctors and other employees in social and healthcare institutions, and it can be concluded that the victims are mainly men between the ages of 35 and 50.

However, lately the burnout syndrome includes more women and younger people, but also the increasing number of those who have been spared until recently, like “ordinary” employees in offices, especially banks and insurance companies.

In fact, according to research by consulting firm McKinsey & co., 53% of intern jobs in corporations are held by women, but this percentage decreases by climbing on the job scale of greater rank and responsibility. Women in middle management hold 37% of positions, while only 26% of them are reaching towards higher management. Media company Captivate Network has presented the research according to which men care more for their health and well-being at work, and therefore less “burn”. Their tactic is relaxing and taking more rest and breaks and time for him, so that they are able to balance the stress experienced in working conditions. 25% more men than women take breaks during the day for private activities, 7% more take for walking breaks, 5% more take breaks for lunch, and even 35% more men take breaks just to rest. (http://www.womeninadria.com/burnout-sindrom/).

The members of the “Generations Y” (born between 1980 and 2000), have more difficulties to succeed in the corporate world than, for example, their mothers had. Sudden development of technology and new occupations combined with complex that men have easier and better to access in reaching desired position have led to constant forcing of women toward greater success and more intense work. All of the above is causing expressed stress at women if they do not keep up with new knowledge and skills. Therefore, it could be concluded that women simply experience “burn-out” sooner and therefore cannot prosper in the same measure as men (http://www.womeninadria.com/burnout-sindrom/).

Studies conducted among the new members of the European Union have shown that 90% of respondents believe that stress is one of the major causes of illness in their countries, which is together with burnout and disturbance attributed to a poor organization of work. For example, in the UK, two-thirds of employed people, in some period of their life complained of stress and their symptoms range from headaches to heart attacks. In addition, the United Kingdom has the highest working hours in Europe. In Austria, 1.5 million employees are suffering from „burns” and one million workers believe they will suffer from the burnout syndrome. According to the Social Insurance Agency’s statistics, stress-induced illnesses have risen by about 60% over the previous years (http://www.burnoutintervention.eu/fileadmin/user_upload/BOIT_theoretical_abstract_2705.pdf).
State of „burnout” does not come overnight. It is a cumulative process. First, there are little warning signs that if are not taken seriously and if certain measures are not taken, self-protection can develop into chronic exhaustion and dissatisfaction (Cuculic A., 2006).

Therefore, the burnout syndrome can be divided into the following phases (Cuculic A., 2006):

− Phase of honeymoon - includes fulfilment, satisfaction, and enthusiasm related to the job, no task is difficult. At this stage, the employee needs nothing but work, and all the sources of satisfaction and dissatisfaction are at work, which represents the whole world, and that world seems to be great. This stage is characterized by unrealistic expectation of rapid achievement and over-investment in the job, constant commitment to work, making the employee a serious candidate for a burn-out victim.

− Reality - over time, the employee realizes that the amount of professional effort invested in the gap between desired and achieved results. There is the appearance of personal disappointment and the first sign of helplessness. As the workload increases, there is a realization that nothing is perfect, investing more effort and energy, leads to frustration and disappointment that become daily, overtime hours are not paid, and the job is brought home

− Phase of disappointment - is manifested in getting away from work and isolating from colleagues, which further contributes to experiencing work as meaningless and worthless. The burnout process further accelerates the physical anxieties occurring at this stage such as: headache, chronic tiredness, anxiety, depression and nervousness, sleep problems, sudden weight loss or weight gain, and interpersonal relationships are additionally boiling

− Alarm phase - is marked by withdrawal and avoiding as a defence mechanism against frustration. A person permanently exposed to frustration be-
comes completely uninterested in work and continues to work for survival. It invests minimum time and energy, avoids all challenges and keeps itself away from anything that affects its position. Symptoms of this phase are: loss of self-confidence, cynicism, serious emotional difficulties, inability to communicate with colleagues, and generally disrupted interpersonal relationships.

Burnout is becoming a world epidemic that has great consequences on a person, its environment, organization, as well as the economy in general. There is almost no country in the world that has not felt the consequences of burnout, to a greater or lesser extent - from suicide to sick leave or even early retirement. It is logical to conclude that combustion at work causes large expenses for the economy of an individual country and have been actively involved in the fight against the burnout syndrome for the last couple of years.

For example, in Germany, in 2010 was reported that one in ten days of sick leave is associated with excessive exposure to stress, and in 2012 it was estimated that worker stress costs German businesses 8 to 10 billion euros a year. Accordingly, the German Ministry of Labour has started a campaign to raise awareness of the burnout syndrome focused on small and medium-sized businesses (http://www.huffingtonpost.com/2013/07/30/worker-burnout-worldwidegovernments_n_3678460.html).

In research conducted in Great Britain, where human resource managers participated, more than 80% of them expressed concerns about losing top employees due to burnout syndrome. The UK Health and Safety Executive (HSE) have set standards for training employers on stress management at the workplace. Companies who do not meet these standards would be punished and employees can file a lawsuit against them. Beginning in 2001, HSE has implemented a 10-year plan called “Revitalizing Health and Safety Strategy”, whose goals included reducing stress on employees. In the report on the progress of this initiative in 2009, HSE stated that there were no visible changes as employees pointed out that their job was extremely stressful (http://www.huffingtonpost.com/2013/07/30/worker-burnout-worldwide-governments_n_3678460.html).

The Japanese are so familiar with the consequences of combustion at work that they have incorporated it into the vocabulary. They have the word for the burning that leads to the death “karoshi” and the word for suicide associated with overtime work “karojisatsu“. Due to the karoshi and karojisatsu cases, the Japanese government pays $ 20,000 to families of victims, and employers up to $ 1 million in damages. According to the International Labour Organization’s report, between 1997 and 2011, the number of karoshi cases increased from 47 to 121, and the number of reimbursed karojisatsu cases increased from 2 to 66. In China, there is no law protecting workers from overtime work. Also Chinese are using the word suicide “guolaosi“ for suicide associated with excessive work. In 2010, fourteen factory workers committed suicide in protest against low salary and overtime work. The overtime work epidemic in China become evident in 2013 when a 24-year-old office worker died of a heart attack after working until 11 p.m every night. The most effective step the government could
take against „guolaosi“ is to allow workers to form a union that will negotiate a more humane work schedule (http://www.huffingtonpost.com/2013/07/30/worker-burnout-worldwide-governments_n_3678460.html).

Managing modern management disorders is the foundation for organizational success and includes actions that bring managers back to productive goals. As a result, stress is reduced, not only for the managers as individuals, but for the entire organization as well. The main sources of stress for managers are their individual attitude and approach and stress will be eliminated only if they are modified. The solution is based on the fact that managers manage themselves more efficiently indicating that they also need professional support.

Figure 5 Managing stress in USA, 2008


According to American Psychological Association (2008), Americans rely on a variety of stress management techniques, and not all of them are particularly healthy. While stress has an impact on how much Americans eat, smoke and drink, individuals are also engaging in some healthy behaviors to manage their stress, although less than in 2007. Less than half say they exercise or walk to manage stress, yet sedentary activities — such as listening to music (52 percent) and reading (44 percent) — top the list of activities that people engage in to manage their stress in healthy ways. This indicates that while individuals consider themselves to be managing their stress well. (https://www.apa.org/news/press/releases/2008/10/stress-in-america.pdf)

The first step to managing stress is reducing personal stress. Stress cannot be removed one immediate action; it can certainly be reduced through good management practice. Efficient self-control is an action that should be taken first. Good management practice says that manager is human resource, worth same as any
other employee and accordingly managers should treat themselves as well as they treat subordinates. Delegation is the activity of transferring jobs to other persons with defined powers required for a job to be performed.

Delegation releases more time for more important business activities or for personal time and other employees can do it better and faster since delegated employees do not have working hours (Rosić, R. 2007).

Workload becomes an important feature of a modern manager’s job and the solution to that problem goes in two directions: removing requests received from others and removing the requirements that the manager has set for himself. Actions to achieve this solution are: functional trust (giving the responsibility to the subordinates so that they can handle the challenges) and task assignments (achieving something over the effort of the subordinates because subordinates are of a great help to the managers in achieving goals and that is productive result). Therefore, it is necessary to make the difference between two actions mentioned above because assignment of the result-managed while the delegacy is controlled by the exception.

CONCLUSION

Turbulence of modern life and its characteristics created the emergence of stress. The most stressful jobs in the world are managerial job. Therefore stress is referred as a management disorder. It is easy to notice that with the rise in the hierarchy and with a higher financial compensation, the manager is getting more responsibility which brings more stress. A common case in practice is that managers become workaholic because they equate their values, identity and self-respect with work. However, it is important to emphasize that to a certain point stress is positive because it causes internal motivation and strength. Any amount of stress above that point will cause great mental and physical problems of employees and lead toward the burnout syndrome.

The consequences of the 21st century stress are much greater and stronger than those of the last century because of the changes that have occurred in the sphere of economic, social, cultural and communication life. The burnout syndrome is a syndrome caused by over-engagement, investment and effort with low work performance and a low level of self-respect and constant exposure to internal and external stressors. The syndrome affects more individuals who want to achieve more than their maximum while they are under constant pressure from the organization in the terms of time and deadlines. After certain amount of time in work under these conditions they become victims of burnout and creating problems for themselves well as for their family, organization and society as a whole.

Stress management should become one of the business philosophies of every business. Stress produces not only losses for the individual and his family but also for the organization itself because it causes great financial losses. Consequently, it is essential for each organization to discover, develop and preserve unique programs, strategies and stress management methods by applying them to all employees.
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KNOWLEDGE AS A SOURCE OF COMPETITIVE ADVANTAGE IN KNOWLEDGE BASED COMPANIES

Review
UDK: 005.941
JEL classification: D83, L25, O31, M14

Abstract
Modern company in today’s economy is no longer solely dependent on its tangible assets such as real estate, factories or facilities. Doing business in today’s global economy creates new types of companies which are becoming increasingly dependent on their intangible assets such as information and knowledge. Today’s new economy has become global and information driven, and the first time in the history of the organization theory knowledge becomes companies the most valuable resource. Knowledge affects the creation of new value in the company, but it also affects on the creation of new knowledge. The use of the Internet enables its distribution in the global context. Knowledge can not be fully diminished. On the contrary, the more being used, it increases, expands and deepens. Therefore modern knowledge based companies need to continually work on their knowledge-based strategy as a source of the competitive advantage. This paper discusses the impact of organizational culture on creation of such companies.

Keywords: knowledge, organizational learning, knowledge based company, competitive advantages
1. INTRODUCTION

The globalization process affected many companies to realize the only way to remain competitive is to use the knowledge as a productive factor in some new ways. Contemporary companies are changing from work-intensive to knowledge-based companies (Alvesson, 2004). In the past two decades there has been a rapid rise in the use of knowledge as a production factor. Newer knowledge management theories point to the fact that modern companies are increasingly selling knowledge or incorporate it in their intelligent products. Rapidly changing market and fast changes result in increased speed of new innovations, lower product and services prices and shorter product life cycles. These facts require the company to continuously adapt to changing market conditions in order to make their business more efficient. To accomplish this goal it is necessary to mobilize all company’s knowledge resources. Accessibility and availability of the capital is no longer a primary concern of supreme management, yet it becomes available and accessible information. Creating a new value is achieved by creating new knowledge and its exploitation. Intellectual property becomes the company’s most valuable asset. Permanent competitive advantage is achieved through knowledge alone. This is particularly true, as Denison (1990) and Barney (1986) state, in cases where the company’s knowledge is difficult or hard to be copied at all. Know-how, patents, personal and organizational networks, and specific organizational culture that fosters cooperation and knowledge sharing are such examples. Hertog and Huizenga (2000) argue that the company’s ability to learn and its ability to use relevant knowledge in everyday business, and not to forget what is learned, is the greatest competitive characteristic of Knowledge-Based Company. The term Knowledge Based Company was first introduced by Jemielniak and Kociatkiewicz (2009), distinguishing these companies from work intensive companies. These companies are also called the Learning Organizations.

2. THE ROLE OF KNOWLEDGE IN THE COMPANY AND CREATION OF ORGANIZATIONAL KNOWLEDGE

As Nonaka (2007) noticed in his work The knowledge-creating company in today’s economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge. But the question is what truly represents the company’s knowledge. Among other things it includes patents, processes, technologies, capabilities, employee’s skills and experience, information about customers, markets and suppliers. Knowledge has the ability to emerge in a concrete context and can not be viewed as isolated factor because it is related to individuals and often occurs on an unconscious basis (Alpeza, 2010). Although it exists in individual’s minds, it also exists in the company because it is woven into the organizational culture. Knowledge is company’s crucial resource when it comes to its environment adaptation and it’s ability to create innovation. According to the Resource
Based Theory (Gant, 1991) strategic resources are crucial for the company’s ability to maintain competitive advantage. Its specificity and complexity results in the fact that knowledge can never be completely stored and separated from the individuals who actually own it. This problem occurs when trying to measure the amount of knowledge in a company. The experience teaches us; something that can not be quantitatively expressed, has little or no importance at all in the business world. Some companies call their knowledge intellectual capital or knowledge capital and develop new ways to quantitatively express indicators related to customers, associates, processes, innovations, and financial capital. The so-called Balanced Scorecard designed by Kaplan and Norton (2001) for the purpose of managing the company’s value for money is one of the solution for this problem. Knowledge management thus has the goal to optimize the use of existing knowledge, develop and implement new products, business processes and business markets. If we draw parallel and compare knowledge with financial capital, we can freely say that by increasing the capital of knowledge, we constantly increase the company’s value. The knowledge capital is not just within the boundaries of the company, but it “goes further” and passes on to customers, suppliers, partners and other stakeholders. Knowledge management therefore simultaneously encompasses the company’s „outside“ and „inside“ opening so-called “entropy of the enterprise.” Knowledge creation is not the objective by itself but it serves to meet company’s goals, or better to say to produce “knowledge-driven companies.”

The company’s adaptation to its business environment is considered to be the one of the key drivers of strategic management success (Buble, 2005; Hung, Yang, Lien, McLean, Kuo, 2010; Chakravarthy, 1982; Brandon, 2014) and organizational learning considers to be the fundamental way to implement its practice (Oppermann and Rasher, 1997; Frandsen, 2012). Learning is often associated with different aspects of advancement, in comprehended or cognitive changes (the mental process of interpreting feelings from the environment) and behaviors – both; present and future (Tsang, 1997; Huber, 1991). Therefore, it is commonly assumed that the organizational learning will improve the business (and others) results (Greve, 2003; Kim, 2003; Jiménez-Jiménez and Sanz-Valle, 2011). This implicitly implies that acquired knowledge is relevant to business operations. Edmonds and Moingeon (1999) describe two basic learning forms that can improve the business and work results; individual learning which is related to the development, change and/or adaptation of individual insights and their consequences (which primarily refers to the individual’s behavior in the company) and organizational learning which is related to the entire company, viewed as a complete learning system, attributable to (individual) learning of it’s members, but also to adjusting the organizational structure, plans and other company’s organizational features. Learning results in creating new plans and influence on the new business features construction. Learning leads to new insights and a wider “repertoire” of available behavioral forms in the company. Therefore, the changes taking place in the company and it’s adaptation to the environment are just repercussions of an effective learning. Better to say, without achieving “tangible” outcomes, no one could say learning is a function

1The Greek expression Έντροπη means “craftsmanship”
of improved work and operating company’s results yet is the objective by itself and only individual’s benefit of it. It is clear that, in successful companies, the intensity and complexity of organizational learning should be guided by the company’s better performance nor by individuals prospers. Matić (2009) came to the same conclusion in his work “The Impact of Organizational Learning on Organizational Performance” when he tried to search the impact of learning culture in Croatian companies on their business success. García-Morales, Jiménez-Barrionuevo and Gutiérrez-Gutiérrez (2012) and Freeman, Eddy, McDonough, Smith, Okoroafor, Jordt and Wenderoth (2014) also came to the same conclusion. Obviously, learning is necessary because of the rapid changes in the environment, which the company has to adapt, and which implies the need for faster and more efficient development of new products and services. However, the very notion of learning can encompass various initiatives and forms of change and company’s improvement, which is why learning from the early 1990s has become an interesting and frequently used concept of modern management (Dodgson, 1993). Some authors consider this concept so important and believe, without learning, it wouldn’t be possible to make any changes in the company or improve its business. This particularly applies on the process of learning company’s creation. This new concept was first introduced by Peter Senge (1997) in his book „The Fifth Discipline”. This kind of company is built up by using the set of principles that should be followed. All of them have the aim to encourage and stimulate the change in order to improve company’s business. Thereby, a systematic approach is accepted, which implies the existence of certain company’s legalities and internal polices and it’s interaction with an environment. Although these changes could be difficult to adopt, they are not impossible. The companies need to develop new ways of thinking. It assumes new relationships within the system and change in “mental models.” However, such a company can not be realized unless the greatest possible attention is paid to the promotion of individual learning and the development of human resources in order to create a culture where learning and change are commonly and widely accepted (Pedler, Boydell and Burgoyne, 1989). Theoretical guidelines differ when it comes to recommendations how to set up such a company. Some authors emphasize the importance of learning company’s characteristics adoption, while others emphasize the importance of personal development in the company. The authors Marsick and Watkins (1999) in their scientific research tried to come up with a unique way to establish these two dimensions of the knowledge based company. They emphasize the learning dimension (continuous learning, dialogue, team learning, and organizational learning) and associate this dimension with structural changes followed by empowerment and effective leadership. These authors associate learning at the individual, team and organizational level in order to determine how effectively company learns to increase the amount of useful knowledge, resulting in increases in it’s impacts or performance. They assumed that different management activities, especially those related to human resources management may have different impacts on learning and other forms of knowledge creation. However, the very unique characteristics of an employee, or a company as a whole, developed over a longer period of time, can affect on the effectiveness of learning, which is why the entire relationship between
individuals and the company as a unique system, can be “read” from it’s culture (Alfirević, Talaja and Pranićević, 2014). Therefore, the internal organizational culture plays a key role in creating a knowledge based company.

3. THE ORGANIZATIONAL CULTURE AND KNOWLEDGE CREATION

The concept of the learning culture can be described (very generally!) as a set of values and forms of behavior that facilitate the learning mechanisms application (Popper and Lipshitz, 1998). The learning culture is a set of values, processes and practices that have a strong influence on self-sustainable and continuous learning in the company. One of the most important indicators of the strong learning culture development is the simple and easy information sharing among individuals within the company. From the company’s aspect, the concept of knowledge sharing represents a “fluid mix of framed experiences, values, contextual information and professional insights that make the framework for the assessment and incorporation of new experiences and information” (Đula, 2010) because it offers tremendous opportunities which supreme managers should not predict if they want to contribute to company’s competitive advantage. Knowledge thus becomes an initiator for transforming intellectual capital into business value. In attempt to achieve this goal, it is necessary to follow the basic steps in creating a knowledge based company; building a foundation (awareness, environment, leadership, empowerment, and learning), determining the implementation strategy (possible ways to develop a learning company: random access, subversive or stated strategy), behavioral changes (five core disciplines of the learning company: team learning, personal mastery, mental models, shared vision and system thinking). The learning organizational culture can not be created overnight. It is created in several phases begining with foundation building, continued by defining the implementation strategy and ending with behavioral changes. The best example of this process is attitudes and values, business processes, and obligations that are built in company over a long period of time, slowly but steadily. However, some changes could be made immediately. If some company wants to become the learning company, it should follow these two steps;

The first step is to create such an organizational culture that will stimulate and encourage learning climate. Employees should have enough time for reflection and analysis, strategic plans reviewing, customer needs reviewing, current tasks evaluation, and new products design. It is difficult for them to learn if they are criticized and discouraged. Rushing and criticizing cause discomfort and frustration. If supreme managers provide employees with the time designated for learning and training, they will use their skills and learning abilities to be more productive.

The second step on the road towards building a learning company is the borders dilapidation and ideas exchange stimulation. The boundaries prevent the information flow; they keep individuals and teams isolated and intensify
prejudice. By borders opening, conferences holding and meetings, team’s project forming that connect different hierarchical levels in the company or even different companies, conditions for creating a new climate are established. Business success depends on the viability and efficiency of the communication channels within the company as well as among other companies on the market. It is dependent on the company’s internal culture and its structure, the employees work engagement motivation and their familiarity with the strategy and company’s vision. Particularly the information technology development offers great opportunities for increasing the employees’ capacity in processing and information sharing. Still, capacity utilization is largely dependent on employees’ mental models and their view of the importance of collecting and sharing information. Creating organizational culture of freely sharing information and knowledge is one of the biggest management challenges today. Once when managers set up motivating and stimulating learning climate, so-called „learning forums“ could be formed. Such forums have aim to help employees learn about specific goals. Each of these activities requires employees to acquire new knowledge and apply them in the practice.

4. THE LEARNING COMPANY AND ITS BENEFITS TO THE ORGANIZATION

Although there are different approaches to define learning company, some common features could be identified. First, all approaches assume that a company is an organic entity and thus has the ability to learn and adapt. Second, a learning company is considered to be the company’s response to an unpredictable and dynamic environment. Below is an overview of the most relevant learning company’s definitions in the literature:

„A learning company is one that continuously manages its learning process through an inquiry driven orientation among all its members.“ (Kim, 1999).

“A learning company is a company where organizational learning is the intentional use of learning processes at the individual, team and organizational level to continuously transform the organization in the direction that is increasingly satisfying to its.” (Dixon, 1994).

“A learning company is an organization that facilitates the learning of all its members and continuously transform itself.” (Pedler, Burgoyne and Boydell, 1991).

“A learning company is a company where people are constantly expanding their capacity to produce the results they really want, where new and expansive thinking patterns are nurtured, where collective aspiration is set free and where people are continually learning how to learn together.” (Senge, 1990).

“A learning company is the one that has established systems, mechanisms and processes that are used to continuously improve their own abilities, as well as the abilities of those who work in it or for it and to achieve sustainable goals - for the community and the community in which it is participating.” (Ichijo and Nonaka, 2006).
Huber (1991) states some important facts derived from the definitions above. He indicates that the learning company is; adaptable to its environment, continuously improves its ability to change/adapt, develops collectively, as well as individually and use learning outcomes to achieve better business results. The same author describes the four essential features or characteristics that each company needs to develop if it wants to achieve smooth and successful adaptation to a changing environment. These characteristics are as follows; the ability to perceive change and action as a sign of change, ability to manage complex and interconnected systems from multiple stakeholders, the ability to experiment - not only with products and services, but with business models, processes and strategies as well and the ability to motivate employees. The basic justification for creating such a company lies in the assumption that in time of rapid changes in the external environment only flexible, adaptive and productive company will survive.

A learning company is not the ultimate goal yet it is more philosophy or attitude about what the company is and what is the role of its employees. Following this philosophy, individuals in the company are involved in identifying and solving problems, company allows experimentation that leads to the business improvement through the individual’s personal abilities growth and development. In such company the focus is on overall quality, customer satisfaction and performance. Job and any other performance is achieved through teamwork and commonality. Learning company is characterized (Senge, 2014) by; strong leadership, horizontal organizational structure, empowerment, communication and information sharing, emerging strategy and strong organizational culture. Leadership, or supreme management, plays the most important role in building such a culture towards learning company. Leaders in the company should be, among other things, teachers, coaches and visionaries, and their role is a triple. They are involved in creating a common vision, designing the organizational structure and empowering and motivating employees. Horizontal structure implies the existence of teams, project tasks and network organizations. The team is given the highest responsibility. Empowerment implies more freedom for employees in using their knowledge and skills in, not only decisions making, but in general work too. Communication is open and information sharing is facilitated. The learning company strategy is, as already emphasized, the emerging strategy as it derives from the dialogue between employees, the exchange of views and ideas of achieving company’s goals. As Dujanić (2007) emphasize, the strong organizational culture is the basis for adopting the learning company concept. This is fundamentally changed by the role of a manager whose career development in the company takes place horizontally rather than vertically, which means that managers are expected to initiate changes in their career rather than passively waiting for the safety of advancement and climbing hierarchical ladders. In order to transform a modern company into a learning company, supreme management need to implement the empowerment process, at all hierarchical levels. Through the process of empowerment, employees receive freedom in decision-making, gain more responsibility, an their work becomes more effective. They are responsible for taken actions based on their personal knowledge and skills. While traditional management is based on the hierarchy, power, and
control system, the employees empowering delegate’s tasks, power, and assume responsibility for decision making and taken actions. According to Ellis-Stoll and Popkess-Vawter (1998), who have been studying employees empowerment, the process of self-empowerment begins by encouraging decentralization in decision-making. Employees in learning company are considered as a potential source of competitive advantage. Hence, supreme management wants to retain above average individuals in the company using various kind of benefits such as: job security and stimulative pay, profit sharing, ownership share and/or the ability to improve and acquire new skills. Increased emphasis is on the individual learning in promoting company’s flexibility and willingness to respond on environmental changes. The learning company also places emphasis on communication, especially on information sharing. Employees, not just supreme managers, have valuable information, as it was not the case in traditional companies. According to Maurer (2001), the transformation into the learning company is possible through the so-called „open-book management“, which is a method that starts from the assumption people are doing their best when they have all information they need. In the learning company the accent is on the individual’s participation in all business processes thus creating an atmosphere where employees are informed about all supreme manager’s actions and decisions. Decisions making has been moved to lower levels. In those companies employees are not just workers. They are rather called associates and the differences between the managers and the employees role are less noticeable. There are numerous researches during the 1980’s (Driscoll, 1978; Miller, Monge, 1986; Hrebiniak, 1974) which point to the link between employee involvement in decision-making process and workplace satisfaction. This resulted in fact managers were encouraged to involve employees in decisions making process. It led, that in today’s modern business, as Argyris (2001) noted, it is not unusual practice that managers completely allow employees making decisions for the job they are responsible for. There are more and more companies where self-management teams are formed. In those teams employees, partly or even completely, work without interference of their superiors. Such empowerment through power delegating helps managers learn how to give up of their usual control while employees learn how to take responsibility for their job and taken actions. They all contribute in the development of businesses concept characterized by unique business processes and organizational culture which foster continuous learning (at all levels) creating, what is known in the literature as a learning company.

In modern business economy, it becomes increasingly apparent that knowledge becomes one of the most important competitive advantages. Possessing the necessary knowledge enables companies to respond faster and easier to environment changes as well as to successfully link their resources with their clients and customers needs. Numerous authors tried to link the implementation of the learning concept in the company with the company’s business success. For instance, Vargas-Hernandez and Noruzi (2010) identified the existence of a positive relationship between intellectual capital and the concept of a learning company with the company’s performance. The authors find out, among other things, that a company which applies this concept responds faster to environmental changes.
challenges, and uses knowledge more effectively. This company links resources to customer needs, improves output quality at all organizational levels, accelerates the pace of change within a company, has a better corporate reputation and is more focused on people than on processes. If we try to consolidate the different opinions of different authors on the effects of introducing the concept of a learning company we come to the conclusion that the advantages of this concept are multiple. The advantages are; more successful adaptation to changes in the environment and an increase in innovation related to work processes, products and technology (Watkins and Marsick, 1993), encouraging leadership at all levels; positive leadership forms in managerial positions (Watkins and Marsick, 1996), ability to manage ever greater amounts of knowledge in the enterprise as well as open access to knowledge bases by employees (Garvin, 1993; Marquardt, 2002), satisfying the needs of existing customers, facilitating access and conquering new markets and increasing new customers (Slater and Narver, 1995; DiBella and Nevis, 1998), greater opportunities for personal and employees’s professional development and encouraging use of novel knowledge and skills in innovative ways (Senge, 1990) and ability to improve company’s performance (Ellinger, Ellinger, Yang and Howton, 2002). There are numerous examples, as Marquardt and Reynolds (1994) state in their book The Global Learning Organization, a large - scale companies in the world that started to adopt this learning company concept accomplish to achieve quality in sustainable organizational change using learning capacity for continuous growth and development.

5. CONCLUSION

Over the past three decades, there have been significant changes in the way companies operate. The business world is changing rapidly and the environment is no more predictive and stable as it uses to be. Modern companies face pressure to increase their performance and learning inside organizations and organizational culture plays a crucial role in that process. The task of these new companies is to constantly seek for new ways of improving learning processes and creating such internal climate that promotes employees to learn and develop their full personal potential. This requires the flexible, learning and adaptable culture. Companies that succeed to develop this type of culture would be able to faster and easier adapt to changes in their environment. Creation of such a culture requires the supreme management engagement and unique leadership styles as well as the specific skills (Vrdoljak Raguž, Borovac Zekan, 2016). In order to remain competitive, companies should be familiar with the benefits of implementing learning company concept and the way to introduce it in their everyday practice.

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PERSONAL DYNAMIC CAPABILITIES IN THE CONTEXT OF A CORPORATE SUCCESS

Abstract

The aim of the paper is to assess if/how the concept of dynamic capabilities (DC) can be applied to personal level, specifically to people oriented at dynamic career in corporations in Europe. The paper is conceptual in nature, and it is based on, on the one hand, a literature review in relation to dynamic capabilities, and, on the other, results of unstructured interviews conducted with young people enrolled in postgraduate studies in the area of Business English. Our study suggests that personal dynamic capabilities are very important for career in nowadays corporations and they are based on such people attributes as: ability to work hard and learn, strong intrinsic motivation, good knowledge of English, ability to work in teams, flexibility, change and ambiguity tolerance.

Keywords: dynamic capabilities, personal, career

1. INTRODUCTION

The concept of dynamic capabilities (DC) has recently been one of the most important theories in the field of management studies. The popularity and importance of this concept has been visible in a number of publications around the world, inspired by dynamic capabilities theory. Among the publications there are ones in very prestigious, top-tier journals in the field of management. The concept appears to be so popular due to its good fit in the contemporary environmental conditions and its universal character, hence this very concept has been an inspiration for authors of papers in very diversified business areas,
like, for instance, marketing, HR, supply chain management, production, or strategic management (Mitrega, In Press). Furthermore, dynamic capabilities are analyzed at different levels in a corporate structure – as an attribute of the whole organization, or qualities and skills of given people, members of an organization, or as a feature of a relationships between market entities (Ayvvari and Möller 2008). Taking all these above into consideration, the paper aims at identifying the so-called personal dynamic capabilities, understood as a group of behavioral traits, typical for given employees working, or wanting to work, for a multinational company. The personal dynamic capabilities of people working in such corporations are taken into consideration for the reason that nowadays, in the labor market in Poland and other European countries, the emphasis is on boosting competitive advantage of employees, their flexibility, linguistic competence and resilience. The paper is mainly conceptual in nature, it is based on the literature review on the subject and the results of unstructured interviews carried out in the last 5 years among post graduate students working in corporations in various industries in Poland. In the first section of the paper the concept of dynamic capabilities will be discussed, whereas in the next section, personal dynamic capabilities of corporate workers will be defined in relation to the changing job market and current political situation in Europe. In the last section, main conclusions will be provided.

1.1. Basic assumptions of DC as an inspiration to be implemented it in various contexts

Although the theoretical framework of dynamic capabilities of an organization is up to a point controversial (Di Stefano, Peteraf et al., 2014), we can assume that the very concept of dynamic capabilities was introduced in the field of management studies by two key complementary publications, namely Teece, et al. (1997) and Eisenhardt and Martin (2000). DC concept was based on resource-based view of the strategy (Barney, 1991), but it contains some other, new elements. It assumes that organizations should build their competitive advantage around rare and hard to imitate resources, which should be systematically redefined in accordance with changes occurring within and around the organization. In this context, the main strategic effort of an organization is not only connected with gaining resources, such as building an extraordinary brand awareness, or having a unique position is a supply chain, but with a systematic drive to revise the already existing resources, to build effective resource configurations comprised of some new and old resources. According to the DC concept, an organization must always be ready to change in a way so as to adjust its resources to dynamic tendencies of the environment (e.g. new technologies, consumer mega trends, or innovative strategies of companies operating in the same industry). Although readiness to change may be treated as a feature of a given organizational culture and this way be connected mainly to the cognitive sphere (i.e. managers’ knowledge and believes), in the DC concept, behavioral sphere is a key factor and it can be understood as routines of a given organization. The routines are learnt and reinforced patterns of human behavior. Thanks to its routines and rules, an organization is able to spot changes
in the environment and even anticipate them in a way so as to try and minimize
the outcomes of threats and maximize the benefits of opportunities.

It has been observed within the last decade that, due to some practices
used by companies, DC is a good illustration to corporate changes. DC can also
be perceived as a good signpost for strategic management. A good illustration of
it is company Inglot that produces cosmetics. The company has Polish roots and
it was at first operating only in national market. Later on its owners decided to
expand internationally and enter, among others, eastern markets. The managers
anticipated that their products may not become popular due to their features –
they were designed and composed for Polish women who have fair complexion,
delicate skin and fair hair. Eastern women (e.g. women in Asia) have darker and
thicker skins and they need different consistency of foundations and different
colors of eyeshadows, lipsticks, blushers, etc. The company designed such
cosmetics especially for eastern consumers. It was based on thorough research
on the needs of eastern prospects, their expectations and the specificity of the
market. It should be also emphasized that Inglot applies its dynamic capabilities
systematically, because Asian markets are not all the same. For example,
in United Arab Emirates Inglot has introduced special nail varnish, which is
removable by water cleaning, without using chemical removers. This product
become very successful, because many women in UAE are culturally restricted
to use only temporal nail varnish. Of course, Inglot is just one example, there
are many other companies that can illustrate how the concept of DC is applied
in business practice. Especially organizations operating in the hi-tech market,
but also small and medium enterprises illustrate it well if they flexibly modify
their strategies and build new positions in local and international market supply
chains, or to gain totally new resources. Quite frequently DC takes a form of
rebranding competence, which is visible even in FMCG industry, e.g. in case
of retail chains.

2. PERSONAL DYNAMIC CAPABILITIES AS AN
ADVANTAGE IN CORPORATE CAREER

Although dynamic capabilities concept was designed mainly in
relation to behavioral routines understood as features of organization as a
whole (especially in case of medium and big enterprises), the literature review
suggests that there is no one dynamic capability, but there are rather a variety
of dynamic capabilities/skills that are more or less detailed within the structure
According to this assumption, dynamic capabilities can also be understood as
traits of a given group of people. Here, such personal dynamic capabilities may
make it possible for their „owner” to function in the highly unstable job market.
Like in case of capabilities of an organization, personal dynamic capabilities
refer to some behavioral features, which are learnt and systematically utilized
routines of behavior, which set a given person apart from other people. To
illustrate personal dynamic capabilities and make the concept more detailed,
we will use a job market as an example. We will also concentrate on employment in corporations (e.g. medium and big companies, frequently multi-nationals) as this phenomenon is quite similar in Europe sector since it is a big part of the whole job market, it is similar in Europe and it is very popular among young people starting their career. This sector is often subject to changes due to changing global trends. In this sector, usually young and highly educated people are looked for. To simplify the process, we will mainly look at young employees, who succeed at getting a job, or young employees who have dynamic careers. Since we had access to data gathered during unstructured interviews carried out among Polish young employees hired at a corporate sector, we will focus on them, although many research conclusions may be treated as universal for the situation in Europe.

2.1. Informants’ characteristics

The data was gathered for 5 years, in the course of teaching post-graduate students at Business English post-graduate studies. This post-graduate programme aims mainly at delivering competences to graduates of various studies – fairly educated young people working in corporations and oriented at dynamic career. Each year a group of more, less 25 people is recruited and among these few students were selected each year and unstructured interviews were carried out with them. The students already working for multinational corporations (e.g. Pricewater House Coopers, Cap Gemini, etc.) were selected, or those, who wanted to apply for such kind of a job. The students were asked about the reason to start Business English post-graduate studies, about their current professional situation, their routines at professional life. They were also asked about their career plans. Then the interviewer together with each interviewee analyzed their career path. As a result of these unstructured interviews, some characteristics of a “good corporate worker” emerged. These characteristics will be discussed further in the next section, and then, in conclusions, their relation to personal dynamic capabilities will be described.

2.2. A good corporate worker characteristics

All the interviewed people unanimously stated that they started Business English post-graduate studies in order to better their professional situation. Some of them admitted that they did it in order to get promoted and they needed a certificate, while others indicated that they wanted to polish their English, especially Business English, and this way be able to communicate with customers/contractors more effectively and more freely. Those who were not hired in the corporate sector hoped for getting a job thanks to the certificate and skills gained after the studies. All of the interviewed people were of the opinion that their English language skills needed improvement. Many informants admitted to be stressed while speaking English because they did not have enough speaking practice. They were all of the opinion that good command of English and low inhibitions is a characteristic of a good corporate worker. The most successful subjects (by most successful ones, we understand those informants, who had highest positions when compared to the rest of the group or most dynamic promotion), had best command of English and were eager to speak at all classes which were carried out in English. They stated that they use English
at work every day and that they are not embarrassed if they make mistakes. It was proved by prior research, that stress hinders good production of a foreign language and it causes speaker’s inhibitions (Kyriacou 2001; Wieczorek and Mitrega, 2017), which, in turn, discourage a speaker to try to communicate in a foreign language. Those corporate workers, who do not want to speak in English, can only work at a lower-level position or cannot get promoted easily. This way a good knowledge of English can be treated as a crucial capability of a corporate worker. We believe that we may treat is as a part of dynamic personal capabilities, because good command of English demands constant improvement, acquiring some new words and accents and utilizing it in changing contexts.

The successful corporate informants, when asked why, in their opinion, they succeeded in achieving their current position, mainly stated that it was due to such skills and qualities as ability to work hard, high level of motivation, good knowledge of English and willingness to communicate, team-work abilities and willingness, flexibility, tolerance of ambiguity, willingness to learn and readiness to change their job/position, relocate, etc. As far as the ability to work hard is concerned, the informants were of the opinion that one needs to work really hard in order to keep a job at a multinational company. This hard work entails not only working efficiently for 8 hours a day, 5 days per week, but also taking work home, working some weekends and constant improving one’s skills (like, e.g. language skills, accounting skills, working on team-work skills, etc.). High level of motivation appears here to be strongly connected with the previous issue of hard work since one needs to be highly motivated to work hard and devote weekends and evenings to work, additionally, one needs motivation in order to improve their skills and gain new ones.

One of the informants was a recruitment officer at a big multinational company and she stated that many young people nowadays cannot work hard and are not fairly motivated at all, they expect to get a job at a prestigious company without any experience than other, more motivated and hardworking people, gain during internships, unpaid practice, scholarships, etc. She is of the opinion that without such experience it is very difficult to get a job in a corporate sector. Being a graduate, even one with a diploma with a very good mark, is not enough, one needs something more to accelerate their career and therefore the ability to work hard and high level of motivation (usually intrinsic), can be treated as dynamic capabilities in this context.

Team work abilities/skills were reported to be a very important component of a corporate success. The subjects were of the opinion that the willingness and ability to work with other people, the ability to network efficiently with foreigners and tolerance, are a key success factor in the professional life of a corporate worker. People working at multinational companies, need to work in teams while working on big projects, interacting with foreign teams, being a part of a bigger structure. All the informants were of the opinion that one should all the time try to improve their team-work skills and adjust to the will of the team, be flexible, e.g. ready to change their opinion if necessary. It is perceived as a dynamic capability since it entails observing and anticipating changing courses of action and adjusting one’s behavior.
and communicative strategies to it. This way tea-work abilities, networking skills and flexibility may be treated as personal dynamic capabilities of a corporate worker. Working with other people, often foreigners, means ambiguity. One cannot foresee how a foreigner will react in a given context, due to cultural differences, so they need to be able and willing to tolerate ambiguity. If one learns to accept and do it, they automatically become more open towards others and their communicative competence goes up. Ambiguity tolerance is closely connected with teamwork, and it also can be treated as a dynamic capability for the reason that it depends on a given situation and one can master the skill. The willingness to learn and open mind are connected with high level of motivation. A motivated person is ready to learn new skills and is able to spot the necessity to learn a new skill if a professional situation entails it and therefore, it is a personal dynamic capability.

Many of the issues discussed above are connected with the last issue, which is connected with the personal willingness to change. It is a dynamic capability since it means observation and adjustment to a given situation/environmental trend/company policy, etc. Change is said to be a very powerful stressor in professional life (Kyriacou, 2001) because it is connected it “the unknown”. People tend to fear changes because they may influence their self-esteem, well-being and force them to leave their comfort zone. According to the informants, willingness to change and the ability to spot that it is a time to change is a key issue in corporate career. Only those people, who were able to change their patterns of behaviour, ineffective routines, etc, were able to succeed in the corporate reality. On the personal level changes may entail relocation when better opportunities emerge abroad, or in a different cities, so people oriented at dynamic career must be ready to accept such challenges.

All of these issues discussed above were treated as most important building blocks of dynamic career in corporations, so we treat them as foundations of DC on personal level. This set of personal attributes must be obviously treated as only tentative, because some further studies may identify some other detailed features or features specific to the very context of a given industry or a given company. There are many specific kinds of dynamic capabilities developed as the business functions (Barrales-Molina et al. 2014; Karimi and Walter 2015), so one should rather expect even more kinds of such capabilities to be potentially beneficial while developed at personal level in organizations.

3. CONCLUSIONS

Nowadays many young Europeans who are about to start their career, decide to work for a corporation, often a multinational one. The question asked by the authors of the paper was, why some are successful and can maintain dynamic career path, whereas others fail to do it. As a result of research, a number of characteristics of a dynamic corporate worker emerged. These are: ability to work hard and learn, high level of intrinsic motivation, a good knowledge of English, ability to work in teams, flexibility, change and ambiguity tolerance. All of the successful corporate workers that were interviewed, were people, who were highly motivated, who understood that they had to constantly learn new things, and who wanted to improve
all the time. They were aware that the job market is constantly changing and one must keep up with it if he/she wants to boost their career. We believe that all above characteristics of a good corporate worker can be considered dynamic personal capabilities because they demand systematic improvement on personal level and they may be applied systematically in various stages of corporate career and in various concrete companies. At any time in the course of their professional life, people can decide to use these dynamic capabilities to accelerate their career course. Since these capabilities refer to personal routines and behaviours and to individual workers, they were called personal dynamic capabilities. If people manifest these capabilities, they can easily communicate with workmates and they are easier to get on with, this way they contribute to corporate governance, which is, according to Tomsic (2013), very much about relations between people working at a given company.

REFERENCES


MARKETING
THE EFFECTS OF FOOD AESTHETICS ON CONSUMERS.
VISUAL STIMULI AND FOOD MARKETING

Abstract

In this study we analyze how the visual impact influences consumers, in particular considering the way a food is presented, exploring in this way how food marketing is also a question of food appearance. Do we eat firstly with our eyes? And if yes, which are the consequences of this process on food marketing strategies? Literature highlights that the way food is presented produces effects from a cerebral and a physiological point of view, but also how it affects taste. In the first part of this research literature has been explored, paying attention in particular on hunger as a process which begins from eyes and, secondly, on how neatness makes food more desiderable. The second part of the study shows our experiment on consumers. Specifically 71 subjects were involved, divided into four groups, that had to observe and evaluate some plates of fruit and bresaola, once arranged neatly, once disorderly. Data have been gathered and analyzed, in particular highlighting consumers’ expectation about the tastiness of the food and how much they would have spent to eat that food. Finally we discuss about the findings, in
particular underlining how neatness counts in the presentation. From the point of view of managerial implications, these findings may be useful to understand the role of appearance to implement a winning food marketing strategy.

Keywords: Food Marketing, Cross-modality, Visual hunger, Food aesthetics, Neatness

1. INTRODUCTION

This study is essentially focused on how the sense of sight influences the perception of food, in particular if a particular disposition can have repercussions on appetibility. Specifically a well neat position in a dish could be perceived differently compared to a messy arrangement, with consequences on customers’ perceptions and, in particular, on his/her positive or negative opinion on a particular food. The concept on which this research is based is fundamentally that taste is not only a question of flavour but, more complexly, it depends on the interaction of the five senses (cross-modality). In this research paper the focus is on the interaction between taste and sight: as affirmed by van der Lann et al. (2011) food selection is firstly guided by the visual system. This is particularly evident also analyzing a cognitive neuroscience review by Spence et al. (2016) which highlights the deep effects on neural activity due to the view of food images (both on a physiological and psychological perspective).

From this point of view it is clear that food aesthetics is not a secondary element to think about but, on the contrary, represents something which could influence the consumers’ choices about food. Zellner, Strickhouser and Tornow (2004) highlight, from this perspective, that liking for a food can be reduced if a particular visual cue inspires a particular taste but it is different from expectations. For this reason this study is aimed at exploring how food disposition affects consumers’ taste, specifically analyzing how neatness is important in their evaluations. To this end the experimental structure of the paper is inspired by Zellner et al. (2011): our study has the goal to verify if neatness influences consumers and if the conclusions of these scholars are confirmed.

2. LITERATURE REVIEW

2.1 The influence of appearance: colour and shape

Consumption is not only a question of taste but it implies the interaction among the senses (Stillman, 2002). In particular the sense of sight and its impact on gustatory expectactions (Spence et al., 2010, Passamonti et al., 2009) are particulary connected, as also shown by LaBar et al. (2001), who studied how food visual stimuli cause a particularly evident reaction in the brain, in particular in the amygdala and associated inferotemporal regions. Hurling and Shepherd (2003) analyzed the effect of appearance on liking, finding that the
expectations for cooked food depends essentially on the expectations of the raw product, highlighting how appearance plays an important role; Wooley and Wooley (1973) showed how salivation increases even just observing (or thinking) a palatable food, in particular when associated with the expectation to eat that food.

Food appearance has also consequences on taste expectations. One of the most attractive element is definitely colour (Spence, 2015): its impact could be so high, for example, to replace sugar in sweetness perception (Clydesdale, 1993). Wei et al. (2012), moreover, found how colour affects consumers. Their study was focused on an orange juice in particular, to better comprehend how colour influences expected and perceived sensory characteristics. These scholars found that colour affects deeply consumers’ expectations, as a matter of fact:

- a greenish juice is expected to be sourer than a reddish one (similarly Fernandez-Vazquez et al., 2014, studied the effects of colours on liking of an orange juice, underlining how a greenish tone increases the perception of sourness);
- a yellowish green juice is expected to be bitterer compared to other colours;
- highly saturated yellow makes consumers expect a fresh juice.

Similarly Pangborn (1960) showed how a green pear nectar is perceived less sweet than a colorless one; also Zampini et al. (2007), through two experiments, verified the link between colour and taste expectations: in the following table their findings are summarized.

<table>
<thead>
<tr>
<th>Colours</th>
<th>Expected flavour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>Lime</td>
</tr>
<tr>
<td>Orange</td>
<td>Orange</td>
</tr>
<tr>
<td>Blue</td>
<td>Spearmint</td>
</tr>
<tr>
<td>Yellow</td>
<td>Lemon</td>
</tr>
<tr>
<td>Red</td>
<td>No particular association</td>
</tr>
<tr>
<td>Grey</td>
<td>No particular association</td>
</tr>
</tbody>
</table>

Source: Zampini et al. (2007)

Another element which can affect eaters is shape. As a matter of fact, as shown by Gal, Wheeler and Shiv (2007) shape, as well as light, influence gustatory judgements. Piqueras-Fiszman et al. (2012) analyzed the influence of colour (black and white) and shape of the plate on flavour (specifically of a strawberry mousse). In particular they found that the colour of the plate affected the participants’ perception of flavour intensity (the mousse served on the white plate was perceived to be more intense in flavour intensity); on the contrary shape did not appear to represent a discriminant factor in perceiving a more intense taste. By contrast Ngo, Misra and Spence (2011) showed how a
particular shape is matched with different kind of chocolate, specifically milk chocolate (characterized by a low cocoa content) are associated with round shapes, while high cocoa content chocolate with angular ones. Similarly, another interesting study on shape and taste is that of Velasco et al. (2015). Through four experiments they demonstrated that sweetness is matched with roundness while bitterness, saltiness and sourness are associated with angular shapes. Another variable which can alter the perception of a particular gustatory sensation is the physical state, as highlighted by Alley and Alley (1998). A sample of fifty high school students were given an aqueous sucrose solution both in a liquid and in a solid form: the results showed how sweetness was perceived as higher in the case of the liquid solution. Similarly the same conclusions were found by Moskowitz et al. (1974), as a matter of fact a vanilla pudding and a yellow cake (solid food) was perceived to be less sweet than a liquid containing the same sucrose concentrations.

2.2 Balance of food on a plate

As showed previously, particular visual characteristics of food can play an important role in the perception of taste. The presentation of a dish is not a secondary factor, even the orientation of a plate for example can affect customers’ liking and willingness to pay (Michel et al., 2015); furthermore a balanced presentation is preferred according to Velasco et al. (2016), confirming how food aesthetics plays a decisive role for eaters.

An interesting study is that of Michel et al. (2014) who studied the impact of an artistic presentation. To this end sixty participants were recruited: they were served the same ingredients presented in three different versions: the first one was inspired by the “Painting number 201” by Wassily Kandinsky, the second one was a regular presentation, the last one a neat version, in which every ingredient were arranged side by side.

![Picture 1 Presentations in Michel et al.(2014) experiments](source: Michel et al. (2014)).

Fundamentally the art-inspired presentation was well-accepted by the subjects. As a matter of fact, before consuming it, they expressed their will to pay
a higher price for it, considered more artistic and complex than the other version. Not only: after the phase of consumption it has been evaluated as the tastiest, showing how a particular arrangement of food could be influential. Particularly significant is the study carried out by Zellner et al. (2011), which inspired also our experimental design. These scholars, through three experiments, showed that:

− there were no significant difference in attractiveness between the balanced and unbalanced presentation of a hummus according to participants, however the first one was considered tastier, concluding that balance has an effect on liking in the case of a complex food and not in a simpler one;

− there were no significant difference in attractiveness between the neat and messy presentation according to participants, however the neat version was considered tastier, concluding that neatness is the real factor which influence liking of a plate, and not balance (because also the balanced messy version was evaluated less tasty);

− a neat presentation is expected to be tastier than the messy one, and participants would pay more for it; moreover they thought it came from a high quality restaurant and more care has been given for its preparation.

In another study Zellner et al. (2014) compared two different plates, both judged neat in the presentation but different in attractiveness: the more attractive version was deemed to be tastier (this was true for all the plates except for string beans).

3. EXPERIMENTAL DESIGN

This study aims to analyze what people perceive and expect when watching a plate of food, rather two: one totally plant-based and the other with some animal origin elements. Each plate is presented in two versions: in the first one there is an ordered and nice disposition of the elements while in the second one the same elements are disposed messily.

There have been 71 participants. Unlike the previous experiment organized by Zellner et al. (2011):

− real plates – specifically prepared for the analysis – have been placed in front of the participants. In the previous experiment, the participants thought that they would have liked the food of the ordered plate more than the messy one. However this was in contradiction with the effective evaluations of the first two phases of the experiment, when the participants tasted the food and judged it consequently: first of all because expectations are often different from the reality; secondly – the participants judged according to the pictures they saw rather than to the real food, which might have influenced their evaluations;

− each participant examined a single plate and not all the 4 proposals; this is because if one observes and judges an object and then he/she must
judge another one with the same elements but in different disposition, he/she inevitably will judge considering the previous evaluations. This behavior is typical of human beings trying to be coherent with what made previously. In this study we have chosen to eliminate this variable in order to achieve an authentic objectivity in evaluation.

Considering these conditions, we wanted to analyze the different judges of the participants based on the different perceived degrees of contamination and attention - that according to them were involved in the preparation of the food - and on the taste prediction.

3.1. Methodology

Materials

We have prepared two dishes:

1. a plate with a slice of pineapple, a half kiwi, a slice of melon and one strawberry, decorated with a leaf of the pineapple lock and with a line of cacao to maintain the equilibrium;

2. a plate with four slices of Bresaola, a diced-cut tomato, a slice of fresh tomato, a slice of mozzarella and some basil.

These elements were served into ceramic plane plates of 26 cm diameter; the different presentations are the following ones:

![Picture 2 The plates](Source: Photos by authors)

It is important to underline the fact that the experiment has been made gradually: participants of the first cluster have judged at first the neat fruit plate,
then we messed the same elements in the same plate and so other participants (grouped together in the 2nd cluster) have judged the messy plate until the fixed quorum has been reached. The same modus operandi has been used for the Bresaola plate. In this way variables like “difference in elements cut”, “difference in the amount of elements in the two presentations”, “difference in colour or in the shape of the elements of the plate” have been totally eliminated.

Participants

There have been 71 “citizens of the world” involved in the analysis. We have chosen a public location, where there are even many tourists – involved in the analysis too. These participants have contributed to the experiment in turn. Once the quorum for each presentation – of almost 15 evaluations - has been reached, the compiled forms have given rise to a definite cluster. Naturally at the end of the experiment we got four groups of evaluations:

1. The group of those who observed and judged the ordered fruit plate: “FruOrd”;
2. The group of those who observed and judged the messed fruit plate: “FruDis”;
3. The group of those who observed and judged the ordered Bresaola plate: “BreOrd”
4. The group of those who observed and judged the messy Bresaola plate: “BreDis”.

Place

The whole analysis took place in a 9 sm. place, which is situated next to the cathedral of Altamura (Apulia, Italy) and consequently to its relative public square. The part of the experiment, which involved the public took place in 20/21 of April 2016, days immediately preceding the event “Federicus” - a medieval party which has an international echo and attracts many tourists.

![Picture 3 The place](Source: Photos by authors)
Procedures

We have personally chosen the passer-by, one by one. Once the attention was captured, we asked to the selected person if he/she had 30 seconds to dedicate to us in order to participate to a research experiment, which consisted in watching a plate of food and, according to the individual perceptions, assigning 5 scores as an answer to simple questions. If the person accepted, the last filter-question was: “do you suffer from any kind of allergy?”. None of the participant involved suffered from any kind of allergy.

Each participant entered this room in which there were:
- A table with a light beige tablecloth (neutral background)
- Plate of food well enlightened by a L.E.D desk lamp
- A pen and a paper with questions to assign
- A sealed cardboard box
- A pack of Lindt chocolates.

![Picture 4 How participants could evaluate the plates](source: Photos by authors)

The participants were asked to answer sincerely, since the questionnaire was anonymous and the figures would have been treated on an aggregated basis. In particular they were asked to give a specific value to five questions, which were:

1) How much do you think you would like the food on this plate? Give a value from -100 (dislike extremely) to +100 (like extremely);
2) “How much money would you be willing to pay for this plate of food?” Give a value in euros;
3) How much care do you think the preparer took with the plate of food? Give a value from 0 (no care) to +10 (a lot of care);
4) What do you think is the quality of the restaurant in which the food was prepared? Give a value from 0 (very low) to +10 (very high);
5) From 0% to 100%, what is the percent chance that this plate of food has been contaminated?
After having expressed their own opinion, each participant has mailed the paper in the box and has been invited to take a Lindt chocolate as token of thanks. The results for the four groups, FruOrd, FruDis, BreOrd, BreDis are illustrated in the following schedules. In the top line there is the number of participants for every group, in the first column the reference to the five questions, indicated above.

Table 2
FruOrd cluster, 17 participants (9 m, 8 f) from 17 to 63 years old

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Questions</th>
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<td>50</td>
<td>1</td>
<td>5</td>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>

Source: Elaboration by authors

Table 3
FruDis cluster, 17 participants (8 m, 9 f) from 20 to 65 years old

| Subjects | Questions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|----------|-----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|
| 1        | 50        | / 5 | 90 | 10 | 100 | 62 | 6 | 50 | 50 | 80 | 60 | -30 | 50 | 20 | 30 | 30 | 30 | 30 |
| 2        | 6         | 6 | 4 | 4 | 0,50 | 3 | 2 | 5 | 5 | 2,50 | 3 | 2 | 3 | 0,5 | 3 | 2,50 | 3 | 2,50 |
| 3        | 5         | 3 | 1 | 6 | 1 | 5 | 6 | 7 | 6 | 7 | 3 | 4 | 7 | 1,5 | 3 | 3 | 3 | 3 |
| 4        | 8         | 5 | 2 | 7 | 4 | 8 | 8 | 3 | 6 | 5 | 10 | 5 | 6 | 5 | 4 | 6 | 4 | 6 |
| 5        | 100       | 50 | 90 | 70 | 50 | 100 | 90 | 70 | 80 | 80 | 100 | 50 | 100 | 70 | 90 | 90 | 90 | 90 |

Source: Elaboration by authors

Table 4
BreOrd cluster, 19 participants (10 m, 9 f) from 20 to 65 years old

| Subjects | Questions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|----------|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| 1        | 90        | 70 | 30 | 90 | 100 | 60 | 50 | 30 | 50 | 40 | 30 | 100 | 50 | 100 | 50 | 50 | 50 | 50 | 50 | 50 |
| 2        | 9         | 7 | 3 | 4 | 8 | 10 | 8 | 10 | 9 | 10 | 9 | 10 | 9 | 10 | 9 | 10 | 9 | 10 | 9 | 10 |
| 3        | 10        | 8 | 6 | 8 | 10 | 10 | 10 | 10 | 7 | 9 | 10 | 9 | 10 | 9 | 10 | 9 | 10 | 9 | 10 |
| 4        | 5         | 8 | 6 | 7 | 6 | 10 | 9 | 10 | 8 | 8 | 1 | 5 | 7 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 5        | 70        | 50 | 1 | 100 | 40 | 2 | 1 | 40 | 3 | 0 | 40 | 50 | 0 | 80 | 80 | 100 | 80 | 90 | 50 | 50 | 80 |

Source: Elaboration by authors

Table 5
BreDis cluster, 18 participants (10 m, 8 f) from 21 to 58 years old

| Subjects | Questions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|----------|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| 1        | 80        | 0 | 100 | 50 | 60 | 50 | -80 | -50 | 40 | 80 | 10 | 50 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 2        | 10        | 3 | 15 | 3 | 2 | 7 | 10 | 5 | 6 | 5 | 8 | 8 | 1 | 5 | 7 | 5 | 5 | 5 | 5 | 5 |
| 3        | 8         | 5 | 7 | 5 | 3 | 2 | 7 | 4 | 5 | 6 | 8 | 5 | 2 | 0 | 3 | 6 | 8 | 1 | 1 | 1 | 1 |
| 4        | 8         | 5 | 6 | 6 | 7 | 6 | 5 | 6 | 5 | 9 | 9 | 5 | 2 | 2 | 3 | 5 | 7 | 1 | 1 | 1 | 1 |
| 5        | 0         | 3 | 50 | 20 | 70 | 5 | 60 | 50 | 60 | 90 | 40 | 90 | 100 | 80 | 90 | 50 | 50 | 80 | 80 | 80 | 80 |

Source: Elaboration by authors
4. DISCUSSION

Comparing the schedules 1 and 2, there is no doubt that the neat fruit plate has made sure that the expectation of pleasure was in general higher for the group FruOrd than the group FruDis.

The same thing happened making reference to the price they would be willing to pay: it is easy to mark that the price the participants of the group FruOrd were willing to pay was higher than that of the group FruDis. Even with the arithmetic average, in the first case we obtain a value of 5.14 €, while in the second one we arrive at 3.94 €.

Data concerning the third question make realize that if there is care, it is perceived – we need only look at the scores – and probably, as stated in the previous studies, it has a positive effect on the other factors which have been analysed until now.

Moreover, even the quality of the place in which the food is eaten becomes suddenly higher in the case of a neat plate rather than a messy one; we can state this making reference to the answers of the participants to the question 4. The scores, apart from some unusual value, are generally higher for the group FruOrd.

Only the results concerning the probability of contamination are generally higher for the group FruDis, in witness to the fact that a messy plate creates pejorative information about the general evaluation of whom observes it.

Going on, from the comparison of the schedules 3 and 4 we can observe that the trends are the same: a higher perceived taste, a higher price that one is willing to pay, higher perceived care and higher perceived quality of the place where the plate has been prepared, for the group BreOrd; on the contrary, the perception of contamination has resulted higher for the group BreDis.

As regards the differences between the two plates (the fruit and the Bresaola ones), we cannot have reliable results, considering the small number of people that formed the groups. Even if the percentage of the perception of contamination of the messy versions is double – for both plates – we have not marked in this case a higher perception of contamination for the messy Bresaola plate compared to the messy fruit plate, unlike it happened in the previous experiment. According to us, this might be due to the same factor that we preferred to eliminate in our experiment, that is the fact that each participant should have observed and evaluated all the proposals. The lack of a strong baseline (in the case of the previous experiment, due to the same evaluation on the other versions) made sure that there was no point of departure to express personal opinion on the complex theme of contamination.

5. CONCLUSIONS

At this point, it is simple to draw our conclusions: it is true that “we eat with our eyes”. “Neatness is relevant”, even this is true. The participants did not know each other, they did not talk with each other about the experiment, they did not observe the other version of the plate; they had in common only the same
measure or the same range of values for their evaluations. Considering now ordinary life, all this can help both consumers – too often our judgment of taste is influenced by external elements – and marketing specialists. In this perspective, we can state that the marketing actions of food could use pictures as a powerful leverage to attract consumers, on one hand (as they actually do), and care about the product so that the consumer is satisfied even after the consumption, on the other hand. If we achieved only the first effect without caring about the second one, our strategy would be ineffective (typical of flimflam man), whereas a good strategy plan should accompany the experience of pleasure of the product in question from the birth of the need until its complete satisfaction. If, on the contrary, we care about only the final product without considering the building of a corporate identity and the charm of a product which is able to attract consumers at a simple glance and to make them appreciate the values and the vision of the company, our marketing action would lack of this fundamental element through which the consumers – or better the persons – can identify themselves as the best addressees of the proposed product and consequently start the process of purchasing.

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MECHANISMS STIMULATING ACTIONS
CUSTOMER - DECISION MAKER ON THE
MARKET: MARKETING MIX INSTRUMENTS

Review
UDK: 339.138
JEL classification: M31

Abstract

One of the marketing aspects are its instruments, which are used in
the process of making strategic decisions both from the perspective
of customers and decision makers. Indeed, this issue is considered in
the literature, but usually separately for each market exchange entity.
The consequences of such an approach to the analysis provide a gap
research. Accordingly, the author has attempted to identify marketing
mix instruments dedicated to customers and decision-makers on the
market. This article is the first in a series of publications in the specified
scope. The purpose of this particular article is to identify a background
research for the identified scientific problem concerning the analysis
of the symbiotic relations between the customer and decision maker
in terms of mechanisms stimulating their decisions and behavior on
the market. In the article, the author presented selected compositions
engaging mechanisms to stimulate market behavior of customers
and decision makers. Among the recognized concepts, the simple
construction marketing mix is distinguished, which, depending on the
adopted perspective of the analysis differ from each other. The study
has attempted to identify and compare these mechanisms, which is the
author’s original contribution.

Keywords: marketing mix, perspective of customers and decision
makers, mechanisms to stimulate market behavior
1. **INTRODUCTION**

The market in the economic terms is a specific mechanism for coordination plans and actions (Balcerowicz, 1995: 186). Wherein both the intentions and actions are implemented by all market participants at the same time, although with varying intensity (Hys, 2014). Meanwhile, the discussion in the literature on identifying the problems in this area is usually conducted separately in relation to various market entities.

The parties are, in this article, the customer and decision maker. Using simplified models of economic reality on the one hand, scientists have the opportunity to conduct in-depth research, on the other hand, there is a risk of eliminating from the analysis key issues, which disappear while treating these issues separately. This situation affects the formation of a gap in the research included in the existence of a limited analytical perspective for relations between entities of exchange market.

Therefore, the article discusses the identification of mechanisms that stimulate the process of undertaking purchase-sale activities. The relevant research problem is positioned in the field of economic sciences in the discipline of management science in the scope of marketing mix strategy. In the literature, one can distinguish various simple compositions that synthetically capture mechanisms to stimulate market behavior of listed entities. The study has attempted to identify and compare these mechanisms.

2. **THEORETICAL FRAMEWORK**

The need to comprehend consumer-buying behavior was distinguished in the marketing literature almost seventy years ago (Clover, 1950). It is crucial to identify the stimuli and understand decision-making process of both customers and entrepreneurs. Undertaking market activity (purchase or sale) by both of these groups generally have exactly the same aim - to maximize resources and results (Bickhoff et al., 2014: 3-15).

However, the key role is played here by adopted perspective of analysis and priorities that set the direction of activity, its intensity and potential. The structure of marketing mix for the adopted problem can be implemented in numerous ways. Depending on the adopted perspective, i.e. customer and decision maker, even though they have a convergent goal - implementation of actions in practice is different. Attempts to quantify the behavior of customers led to propose a number of valuable concepts in the literature. The first attempts date back to the thirties of the twentieth century. Although the original marketing mix concept based on the idea of action parameters was presented in the 1930s by Stackelberg (1939), Culliton is considered as a precursor of the concept of the so-called marketing mix (1948). After then, Rasmussen formulated the parameter theory. He stated that four determining factors of sales and competition are following - quality, advertising, price and service (Rasmussen, 1955). Frey proposed that the marketing mix factors have
to be divided in two categories. These categories are complementary. Frey distinguished following categories - offering (i.e. brand, product, service, price and packaging) and the tools (i.e. (publicity, advertising, distribution channels, sales promotion and personal selling). By means of these elements, the company communicates with customers in the market (Frey, 1961). Lazer and Kelly proposed general formula in which mentions three components i.e. services and goods mix, communication mix and distribution mix (Lazer & Kelly, 1962). In the early 1960s, McCarthy blended marketing mix with four variables known as the 4P classification that included: product, price, distribution (place) and promotion (McCarthy, 1964). He proposed a set of basic instruments regulating relations between the entrepreneur and the customer as a system of interrelated elements. 4Ps delimits four distinct, well-defined and independent management processes. McCarthy pointed out that this composition can be carried out selectively and complementarily through the selection and adaptation of appropriate instruments of influence on the exchange processes in a given time. It concerns the interaction of actors of exchange on the market, depending on the economic situation. The introductory marketing mix texts suggest that all parts of the marketing mix (4Ps) are equally important, since a deficiency in any one can mean failure (Kellerman, Gordon and Hekmat, 1995). Bennet stated that marketing mix known as 4P’s, moves marketing mix plans into practice (Bennett, 1997). However, this composition, despite the utilitarian value is treated as a conceptual agenda and is not the scientific theory (Palmer, 2004; Popovic, 2006; Goi, 2009). Borden suggested extended composition of marketing mix factors. His original theory of marketing mix was composed of a set of 12 elements namely: product planning; pricing; branding; channels of distribution; personal selling; advertising; promotions; packaging; display; servicing; physical handling; and fact finding and analysis (Borden, 1965).

Works on the universal concept of marketing mix continued for the next few years. Especially from 1980s onward, a number of researchers proposed new ‘P’ into the marketing mix. For example, Judd proposes a fifth P: people (Judd, 1987). Booms and Bitner add 3 Ps i.e. participants, physical evidence and process (Booms & Bitner, 1980). Kotler adds: political power and public opinion formation (Kotler, 1986). MaGrath suggested the addition of 3 Ps i.e. personnel, physical facilities and process management (MaGrath, 1986). Baumgartner suggested the concept of 15 Ps, i.e. product/service, price, promotion, place, people, politics, public relations, probe, partition, prioritize, position, profit, plan, performance, positive implementations (Baumgartner, 1991). Rozenberg and Czepiel suggested that maintaining existing customers is as important as acquiring new ones. The approach towards existing customers has to be active, based on a separate marketing mix for customer retention: product extras, reinforcing promotions, sales-force connections, specialised distribution, post-purchase communication (Rozenberg & Czepiel, 1992). Vignalis and Davis proposed adding S (service) to the marketing mix (Vignalis & Davis, 1994). While the 4Ps dominate the marketing mix management activities, most marketing mix practitioners would add two more elements in this mix in order to position their products and achieve the marketing mix.
objectives. Two more factors must be added to the 4P mix: services and staff (Doyle, 1994). The trend towards personalization has resulted in an increasing contribution of services to the marketing mix of products. Personalization has to become the basis of the marketing mix management trajectory. The personalized marketing mix plan includes 4 more P’s next to the traditional Ps of the marketing mix: personalisation, personnel (participants), physical assets and process (Goldsmith, 1999).

The marketing instruments analyzed from the perspective of the decision maker are widely considered in the literature. However, there are also number of references to the instruments seen from the perspective of the customer. Works on the market orientation focused on this perspective were referred in publications from the 60s of twentieth century. Lauterborn proposed 4C formula, the structure of which consists of the following elements: consumer wants and needs, cost to satisfy, convenience to buy and communication (Lauterborn, 1990). The formula in the following years was redefined and complemented by other concepts. Kotler noticed that external and uncontrollable environmental factors are crucial elements of the marketing strategy programs. Marketing mix should include: customers, environmental variables, competitive variables. Two additional Ps are added to the 4 traditional ones: political power, public opinion formulation (Kotler, 1986). Yet another composition captivating customer perspective was Sheth proposal. He proposed a set of elements that is also based on customer perspective. Marketing mix has moved toward 4A. This structure is created of: affordability, accessibility, awareness and acceptability (Sheth, 1996).

According to Bennet marketing mix is focused on internal variables hence an incomplete basis for marketing mix. Customers are inclined to buy products from the opposite direction to that suggested by the marketing mix. There are five Vs that are the criteria of customer disposition: value, viability, variety, volume, virtue (Bennett, 1997). One of the most important factors to be considered are the customers or the target market and their behavior in order to align with how each aspect of marketing mix is seen by the organizations. Accordingly, they proposed formula of 8O (Czinkota & Ronkainen, 2004). The Eight Os are composed of: occupant, object, occasion, objective, outlet, organization, operations and opposition. While, only the first four of the eight Os will be given emphasis. These include: object, objective, organization and operation. Therefore, it is known and recognized as 4O.

To sum up this topic - the literature has proposed many useful compositions containing groups of factors that influence decision-making processes of entrepreneurs and customers. Described marketing mix formulas contain from three to several elements. Finally, 4P and 4C formulas have been adopted for widespread use. But one should not forget that these records are only systems of variables, which are subject of mainly analyzes of management practitioners, they are useful, but they are not strictly scientific. One of the most important aspect is that the proportions in the marketing mix can be altered and differ from the product to product and from customer to customer (Hodder
The marketing mix management paradigm has dominated marketing mix thought, research and practice (Grönroos, 1994), and “as a creator of differentiation” (Van Waterschoot, 2000). Kent refers to the 4Ps of the marketing mix as “the holy quadruple...of the marketing mix faith...written in tablets of stone” (Kent, 1986). Marketing mix has been particularly influential in notifying of the development of marketing theory and practice (Möller, 2006).

Amongst the marketing mix formulas - the literature presented also these, which represent an attempt to define the issue in a universal way. Ohmae claimed that no strategic elements are to be found in the marketing mix. The marketing mix strategy can be defined by three factors. Three Cs define and create the marketing mix strategy: customers, competitors, corporation (Ohmae, 1982). The 4Ps marketing mix is excessively internally oriented. The four Cs express the external orientation of marketing mix: customers, competitors, capabilities, company (Robins, 1991). Therefore, the traditional marketing mix has a clearly offensive character as the strategies associated to the 4Ps tend to be function-oriented and output oriented. Well-managed organizations have to shift the emphasis in managing valued customer relationships in order to retain and increase their customer base. Four information-intensive strategies create the “new Cs” of marketing mix: communication, customisation, collaboration, clairvoyance (Patterson & Ward, 2000). The weight of marketing management is clearly leaning towards relationship marketing as the prospect marketing paradigm. The relationship marketing addresses the elements of marketing mix management identified by the marketing relationship trilogy: relationships, neo-relationship marketing, networks (Healy et al., 2001). The 21st century marketing mix developments of the last 50 years require a new flexible platform. While the simplicity of the old model might be extended with additional 4 activities such as: product to performance, price to penalty, promotion to perceptions and place to process (Yudelson, 1999). The analysis of existing concepts influencing decisions of entities operating on the market tends to create integrated solutions intended to create symbiotic space. The space, which differences in the mechanisms stimulating activity of customers and decision-makers are being integrated. They form a coherent entirety (Paul, 2013: 12-22).

2. METHODOLOGY

The constantly increasing role of customers in the marketing mix philosophy has signified the need move from producer oriented into consumer oriented marketing mix. Data analysis presented in the article was carried out using secondary research. Preparation and analysis of data as well as conclusions were carried out based on the desk research method. The data was obtained while analyzing source materials such as: thematic publications available in WoS and Scopus and several other databases. Moreover, the data was gathered by means of an analysis of source materials such as, among others: announcements, press releases, reports for industries, publicly available reports of companies and research institutions, information from the Internet. In the next stage, obtained
data were compared and verified in order to finally complete the process of consolidation and inference.

3. RESULTS AND DISCUSSION

Both the customer and the entrepreneur has at its disposal a set of inherent instruments by means of which they interact with each other on the market. Leading in the literature, 4C and 4P formulas are mutually correlated. This should be understood as follows.

Factor consumer wants is correlated with the product. It is up to decision makers to provide a product that meets customer needs and is purchased by the customer. While at the disposal of customers is to select and purchase a specific product out of range of competitive products available on the market. Choosing product satisfying particular need is conditional upon other elements.

One of them is cost. Customer makes a subjective evaluation of satisfaction with the product on the basis of the costs of purchase. The cost of purchase is naturally the price of the product, but also elements such as the cost of obtaining information about a certain product, benchmark with other generic products, time spent on the acquisition of information. From the decision maker perspective, the price of the product is composed of expenditures and estimated profit.

Another factor - convenience to buy can be interpreted as the comfort of purchase, i.e. product availability, potential barriers in the process of purchasing or form of the transaction. From the decision maker perspective it is the level at which logistics processes are implemented, a set of distribution channels or sale outlets are also of key importance.

The last factor, which is the communication means the possibility to obtain feedback, barriers and distortion in this area. This element is the more important, the more possibilities of telecommunications and hybrid shopping models appear. The decision-maker has in this field an arsenal of instruments supporting promotional activities. If the 4C and 4P formula are treated as a base, in a summary statement one can distinguish a complex combination (Figure 1).
Figure 1. Symbiotic relationships in the decision-making processes of the customer and the decision-maker on the market - initial model

*Source: own study*

This chart includes the identified mechanisms to stimulate market action undertaken by various entities of exchange, in particular the customer and decision maker. Depending on the adopted perspective, the analysis of issues in the literature allowed to create an overview of marketing mix mechanisms focused on the customer, including components such as:

- political power, public opinion formulation (Kotler),
- 4A: affordability, accessibility, awareness and acceptability (Sheth),
- customers, competitors, capabilities, company (Robins),
- 5V: value, viability, variety, volume, virtue (Bennett),
- 8O: occupant, object, occasion, objective, outlet, organization, operations and opposition (Czinkota & Ronkainen),
- 4O: object, objective, organization and operation (Czinkota & Ronkainen).

From the decision maker’s perspective following mechanisms can be mentioned:

- quality, advertising, price and service (Rasmussen),
- offering: brand, product, service, price and packaging and the tools, methods: publicity, advertising, distribution channels, sales promotion and personal selling (Frey),
- services and goods mix, communication mix and distribution mix (Lazer & Kelly),
- product, price, distribution (place) and promotion (McCarthy),
- product planning, pricing, branding, channels of distribution, personal selling, advertising, promotions, packaging, display, servicing, physical handling, fact finding and analysis (Borden),
- 4P add people (Judd),
− 4P add 3 Ps i.e. participants, physical evidence and process (Booms & Bitner),
− 4P adds political power and public opinion formation (Kotler),
− 4P add personnel, physical facilities and process management (MaGrath),
− 15 Ps, i.e. product/service, price, promotion, place, people, politics, public relations, probe, partition, prioritize, position, profit, plan, performance, positive implementations (Baumgartner),
− product extras, reinforcing promotions, sales-force connections, specialised distribution, post-purchase communication (Rozenberg & Czepiel),
− 4P add service (Vignalis & Davis),
− 4P add services, staff (Doyle),
− 4P adds personalisation, personnel (participants), physical assets and process (Goldsmith).

In the literature, there are a number of valuable solutions to stimulate the decisions of customer and decision-maker. Prepared summary of these mechanisms demonstrates the concept of fragmentation, duplication of the same idea, different optics of capturing various levels of detail, focusing on a selected market exchange entities or activities. Among the many concepts, there is no common guiding idea. Researchers usually focus on the deepening differences between the world of the customer and decision maker, rather than on the search for common space. All these observations impact on the identification of research gaps in this field. Hence, they set the framework for further research of the author.

The aim of prospect research will be an attempt to integrate these mechanisms, compare and elaborate a model of symbiotic relations. The results will be presented in subsequent articles in this series. Product is stated in the singular but most companies do not sell a product in isolation (Rafiq & Ahmed, 1995). Decision-makers sell product lines, or brands, all interconnected in the mind of the consumer. The does not mention relationship building which has become a major marketing mix focus, or the experiences that consumers buy. The conceptualization of the mix has implied customer and decision-makers are the central element. This is not the case. Marketing mix is meant to be ‘customer-focused management’.

3. CONCLUSIONS

In the 21st century marketing instruments should be transformed, if they are to be effective. Decision-makers have to take into account changes in the structure, customer awareness, customer knowledge and experience. Marketing mix is to create significant added value in the future.

Therefore, instead of management by decision-makers, relationships with customers, through 4ps instruments should be defined anew. In a way to
emphasize the value to the customer on an individual basis. In the economically developed countries, personalized offers are expected, taking into account creation of value for a customer in a unique and individual way. Due to the fact that the customer has almost unlimited access to a wide range of generic products – decision-makers need to make an effort to indicate the superiority of its offer in relation to competing products.

It is expected that the instruments of marketing in 21st century will become not only more sophisticated, but also much more interactive and personalized. This is influenced by the definition of an integrated approach to mechanisms stimulating decision-making process of both customers and decision makers. The findings made in the course of analyzes in the field of marketing mix mechanisms that stimulate decision-making by the above mentioned entities constitutes an introduction for further work and analyzes to be carried out in this area. The article presented selected compositions engaging these mechanisms, in order to outline the research background for further work.

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Abstract

The purpose of this paper is to determine service quality dimensions as predictors of perceived service quality in retail environment. Recent studies emphasised the multidimensional nature of service quality and multidimensional service quality measurement models. Literature reveals that SERVQUAL (Parasuraman et al. 1988) and RSQS (Dabholkar et al. 1996) are the most common instruments used to measure service quality in retail. Considering different market environments neither SERVQUAL nor RSQS should be solely applied to different service environments and in different cultures assuming that customers behave in the same way. Research should focus on discovering service quality dimensions that are adapted to specific environments and to adapt service quality dimensions to different cultures. Therefore, by using exploratory factor analysis service quality dimensions are determined in the Federation of Bosnia and Herzegovina (hypermarket stores’ market). Those are: merchandising, physical environment and interaction with employees. Understanding service quality dimension as predictors of total service quality and their successful management is precondition for successful planning and implementation of service marketing activities in hypermarkets.

Keywords: dimensions of service quality, retail, hypermarkets
1. INTRODUCTION

Companies who differentiate in providing high service quality are those that are acquiring loyal customers. Consequently, there is an increase in expressing interest in service quality research in both academic and business environment. Retail is service activity. Namely, basic economic function of a retailer is to ensure customers with few basic and important services along with products. Those services are: accessibility of location, suitableness of working hours, range of products, information about products, and suitableness of quantities (Newman and Cullen 2002). The above-mentioned services are a part of basic retailer’s functions that act as ties in supply chain between a producer and a customer. Each retailer provides services as a part of the offer, and the customers use them every time while purchasing. Different retailers offer different levels of services. The retailers also enrich their offer with additional services such as advising and aiding in purchase decision, deliveries of products to respond to customers’ requests and competitive pressures. Retail services (or retailers’ services) present a set of services that a retailer offers to the customers in addition to offered products (Newman and Cullen 2002).

Considering the diversity of services provided by the retailers and service quality as a multidimensional construct the purpose of the paper and research is aimed at determining the dimensions of the service quality in the Federation of Bosnia and Herzegovina (hypermarket stores’ market) and their influence on perceived service quality. Also, the analysis of differences in dimensions’ average grades with regards to sociodemographic characteristics of examinees (gender, age, education and income level) will be presented.

2. RETAIL SERVICE QUALITY

Retail services as an offer of combination of tangibility (physical products) and intangibility have similarities, but they also differ from the services in which core intangible offer dominates. Service quality models that are exclusively developed for pure service environment (SERVQUAL and SERVPERF) did not prove as corresponding ones in those industries that are different from pure service environments (Meng et al. 2009). Dabholkar et al. (1996) – combined findings of qualitative researches (phenomenological interviews, in-depth interviews, following behaviour and experiences of customers at selling place), SERVQUAL and findings from existing literature – have developed Retail Service Quality Scale as an instrument to measure service quality in retail. The instrument consists of 28 indicators – 17 overtaken from SERVQUAL, and 11 developed based on qualitative researches and literature review – that measure five dimensions of service quality at a scale of five levels of intensity. Those are as follows: physical environment, reliability, personal interaction, problem solving and policy. The authors emphasise that the customers evaluate certain service quality dimensions, but they also evaluate whole service that can be positioned as a superior factor to the factors that present dimensions, and which incorporates meaning that is common for all dimensions. Insight into literature reveals that SERVQUAL (Parasuraman et al. 1988) and RSQS (Dabholkar et al.) are the most common
used instruments to measure service quality in retail (Guar and Agrawal 2006). The authors give a review of empirical researches in which SERVQUAL was used to measure service quality (Carman 1990; Fin and Lamb 1991; Guiry Hutchinson and Weitz, 1992; Gagiano and Hathcote 1994; Vazquez, Rodriguez and Ruiz 1995) and those in which RSQS was used to measure service quality (Boshoff and Terblanche 1997; Mehta, Lalwani and Han, 2000; Siu and Cheung 2001; Kim and Jin 2002; Siu and Chow 2003; Kaul 2005). While doing so they concluded that neither SERVQUAL nor RSQS present reliable and valid (universally accepted) measure of service quality in retail. Namely, when service quality is researched it is necessary to adjust the application of the afore-mentioned instruments by taking into consideration contextual variations or to develop alternative instruments. Adjustments can relate to type of service activity as well as to specificities of country’s environment in which the research is conducted. Speaking of retail, it would be advisable to adjust instruments taking in consideration the type of a retail shop as well. Namely, different retail formats offer different set of services to their customers. Modified instruments can further be tested in different retail formats using cross-cultural samples. It would be the way towards development of new, more reliable, culturally unlimited, and globally applicable instruments to measure service quality in retail. Qualitative researches and extensive research of literature are a foundation to identify indicators that will be inserted or omitted from both scales. Neither SERVQUAL nor RSQS should be blindly applicable in different service activities and in different cultures under hypothesis that the customers behave similarly. It is necessary to review service quality dimensions in alternative cultural environments (Meng et al. 2009). Past research attempts to standardise service quality dimensions have not yielded fruit. It is necessary to direct researches towards discovering unique dimensions of perceived service quality in different sectors and towards finding regularities between sectors of similar type (Suuroja 2003). Eysteinsson and Bjornsdottir (2012) confirmed in their study the findings of earlier research, that the dimensions of service quality in retail differ according to culture and type of retail.

3. RESEARCH METHODOLOGY

Field research was carried out on the sample of 861 respondents. Applied sample is, according to its characteristics, quota sample with the following control variables: city (Sarajevo, Tuzla, and Mostar), shops (Konzum, Bingo, Mercator, and Interex), gender, and age. Research tool (questionnaire) was developed using relevant scientific literature that was adjusted to chosen research topic. It consists of a set of claims that are related to dimensions of service quality and total service quality with which respondents express intensity of their agreement or disagreement. Likert’s scale of five intensities was used in it. Measurement scale for total service quality used for the research was the one tested by Dabholkar et al. (2000). It was tested using Cronbach alpha coefficient, and obtained results of Cronbach alpha coefficient of 0.864 indicate good measurement scale reliability.
4. RESEARCH RESULTS

Statistical analysis has been conducted in SPSS program for Windows (version 17.0, SPSS Inc. Chicago, Illinois, USA).

The following procedures and tests have been used in analysis: factorial analysis, correlation analysis and variance analysis (One-way ANOVA with post hoc tests). The results have been expressed as mean and standard deviation. The level of importance is p=0.05. P values, which could not be expressed up to three decimal digits are shown as p<0.001.

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicators</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>This store offers wide range of products.</td>
<td>Author’s own indicators</td>
</tr>
<tr>
<td>S2</td>
<td>This store offers products of different quality</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S3</td>
<td>This store offers different brands of products.</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S4</td>
<td>This store always has enough stocks of products I purchase.</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S5</td>
<td>This shop offers products of different price range.</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S6</td>
<td>This store has modern-looking equipment and fixtures.</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S7</td>
<td>This store has clean, attractive, and convenient public areas (restrooms, fitting rooms).</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S8</td>
<td>The store layout at this store makes it easy for customers to find what they need.</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S9</td>
<td>The store layout at this store makes it easy for customers to move around in the store</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S10</td>
<td>Employees in this store are consistently courteous with customers.</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S11</td>
<td>Employees in this store have the knowledge to answer customers’ questions.</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S12</td>
<td>Employees in this store are never too busy to respond to customer’s requests</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S13</td>
<td>The behavior of employees in this store instill confidence in customers.</td>
<td>Dabholkar et al. 1996</td>
</tr>
<tr>
<td>S14</td>
<td>This store provides plenty of convenient parking for customers.</td>
<td>Dabholkar et al. 1996</td>
</tr>
</tbody>
</table>

Factorial analysis has been conducted on 14 indicators (based on the work of Dabholkar et al. 1996 and author’s own indicators) shown in Table 1.

The results of testing sampling adequacy and test of sphericity have shown that the data are suitable to conduct factorial analysis to determine service quality dimensions (Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.938, a Bartlett’s Test of Sphericity is significant p<0.001).

Factorial analysis (Rotation Method: Varimax with Kaiser Normalization) has resulted in three factors which embraced all analysed statements. The first factor has 44.120% of variance, the second 11.324%, and the third 7.318%. Total of 62.762% of variance has been explained, which is
in compliance with recommendations of Hair et al. (2010), who suggest that minimal share for social sciences should be 60%.

Scree plot (factor representation in relation to eigenvalues) has been used as additional criterion. It has shown that a curve aims at levelling after the third factor, which coincides with the above results so the three factors are retained. The solution of factorial analysis is shown in Table 2.

Table 2

<table>
<thead>
<tr>
<th>Rotated Component Matrix*</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>S1</td>
<td></td>
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<tr>
<td>S2</td>
<td></td>
</tr>
<tr>
<td>S3</td>
<td></td>
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<td>S4</td>
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<td>S12</td>
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<tr>
<td>S13</td>
<td></td>
</tr>
<tr>
<td>S14</td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.  
* Rotation converged in 5 iterations.

It is necessary to check internal consistency of the statements’ set, i.e. factors’ reliability so Cronbach’s Alpha coefficient has been determined for every factor to check justification of grouping certain statements into obtained factors. The value of the above-mentioned coefficient is between 0 and 1 where higher value indicates higher reliability of dimension. Table 3 shows the values of the above-mentioned coefficient and factor names.

Table 3

<table>
<thead>
<tr>
<th>Factor</th>
<th>Statements that get into factor</th>
<th>Number of statements</th>
<th>Cronbach’s Alpha</th>
<th>Factor name</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>1,2,3,4,5</td>
<td>5</td>
<td>0.812</td>
<td>merchandising</td>
</tr>
<tr>
<td>F2</td>
<td>6,7,8,9,14</td>
<td>5</td>
<td>0.843</td>
<td>physical environment</td>
</tr>
<tr>
<td>F3</td>
<td>10,11,12,13</td>
<td>4</td>
<td>0.842</td>
<td>interaction with employees</td>
</tr>
</tbody>
</table>

Cronbach’s Alpha coefficient for all identified factors is higher than 0.8, which indicates good internal consistency.
Factor correlation and total service quality is shown in Table 4.

Table 4

<table>
<thead>
<tr>
<th>UKU</th>
<th>Pearson Correlation</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>.535**</td>
<td>.522**</td>
<td>.793**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>861</td>
<td>861</td>
<td>861</td>
<td></td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

All three factors are in significant positive correlation with total service quality. According to value of correlation coefficient it can be concluded that correlation is the strongest between F3 factor (interaction with employees) and total service quality.

The analysis of differences in average grades of factors with regards to sociodemographic characteristics of examinee (gender, age, education, income level) has shown significant difference only with the level of income (the difference has been found for all three factors). Average factor grades according to income groups are shown in Table 5, and the results of variance analysis (ANOVA) in Table 6. The examinees who did not respond to a question about level of income were excluded from this analysis.

Table 5

<table>
<thead>
<tr>
<th>Factor</th>
<th>Income level (BAM)</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>do 700</td>
<td>192</td>
<td>6.174</td>
<td>.680</td>
<td>.049</td>
</tr>
<tr>
<td></td>
<td>701 – 1000</td>
<td>203</td>
<td>6.167</td>
<td>.673</td>
<td>.047</td>
</tr>
<tr>
<td></td>
<td>1001 – 1500</td>
<td>136</td>
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<tr>
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<td>192</td>
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### Table 6

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Additional testing was conducted to determine which income groups of examinees significantly differentiate.

It has been confirmed that in evaluation of F1 factor (merchandising) there is a significant difference between examinees with incomes lower than BAM 100 and examinees with incomes from BAM 1001 to 1500 (p=0.012), and examinees with incomes from BAM 701 to 1000 and examinees with incomes between BAM 1001 to 1500 (p=0.014). In both cases the examinees with higher incomes gave lower grade to merchandising factor.

It has been confirmed that in evaluation of F2 factor (physical environment) there is a significant difference between examinees with incomes from BAM 701 to 1000 and examinees with incomes between BAM 1001 to 1500 (p=0.017). Higher grade for physical environment factor was given by examinees with lower incomes.

It has been confirmed that in evaluation of F3 factor (interaction with employees) there is significant difference between examinees with incomes lower than BAM 100 and examinees with incomes from BAM 1001 to 1500 (p=0.023), and the examinees with incomes between BAM 701 to 1000 and examinees with incomes between BAM 1001 to 1500 (p=0.018). In both cases the examinees with higher incomes gave lower grade to this factor.

5. CONCLUSIONS

The results of conducted research indicate presence of three dimensions of service quality in retail (hypermarkets) in the Federation of Bosnia and Herzegovina. They are merchandising, physical environment, and interaction with employees. It turns out that all three of them positively influence perceived service quality in retail. Regarding this matter interaction with employees has the strongest influence. So, in product-dominant retail environment, which is not purely service one, interaction with employees is more important even than offer, product range of a shop, and physical environment. Therefore, optimal products’ range consistent with customers’ requirements, successful
internal marketing management, and successful management of shop’s physical environment will positively influence customers’ perception on service quality in retail (hypermarkets). Consequently, retailers should focus on:

− ensuring availability of products that are compliant with customers’ requirements
− improving of internal marketing activities ensuring that the right person/employee is on the right place and
− controlling the elements of the physical environment by creating convenient and comfortable place to move and buy.

The analysis of differences in factors’ average grades with regards to sociodemographic characteristics of examinees (gender, age, education and income level) has shown significant difference only with income level (the difference was found for all three factors). The examinees with the highest incomes evaluated all three dimensions of service quality with the lowest grades. Afore-mentioned opens the possibility to observe realisation of marketing aims in retail based on market segmentation, taking into consideration differences in service quality perception that are based on differences in household incomes.

It is necessary to interpret the results of conducted research by taking into consideration limitations of research as well. The selection of indicators for measurement of service quality dimensions chosen for this research can be considered as one of its limitations. They have been selected based on insight in referent and relevant scientific literature of selected area, which evidences reliability of selected measurement instruments, research perspicacity, and one’s own observation of retail market in the Federation of Bosnia and Herzegovina. The selection of some other indicators in future research and selection of other retail formats in sample creation would be a way towards generalisation of obtained research results.

The importance of employees’ role in product-dominant retail environment, which have been confirmed by the research results, raises the question of necessity of proper sales personnel management. Therefore, future research should address both internal marketing and interactive marketing as components of marketing services in the retail environment.

REFERENCES


CHARACTERISTICS OF PERSONAL CONSUMPTION IN BOSNIA AND HERZEGOVINA

Preliminary communication
UDK: 330.567.22(497.6)
JEL classification: E01, E21

Abstract

Personal consumption represents one of the most important components of aggregate demand. Calculations of GDP by expenditure approach includes consumption that makes the biggest GDP component in the most countries. As a part of aggregate demand and GDP consumption has multiplier effects on employment, investments and savings. Financial crisis that hit the world economy in 2007-2008 has caused consumption decrease that had negative, short- or long-term, consequences. For that reason there is consensus about the need of consumption increase and re-growth of world economy. According to IMF and EUROSTAT data Bosnia and Herzegovina is at the bottom of the European countries by consumption and standard of living, components that show slow improvement due to significant income decrease, high unemployment rate and small FDIs. The aim of this work is to show characteristics of personal consumption in Bosnia and Herzegovina regarding changes of personal consumption values and its share in GDP. This paper will give insight into changes of consumption values and its impacts on GDP in the period 2007-2015 with the reference to the countries of region and EU.

Keywords: consumption, GDP, expenditure approach
1. INTRODUCTION

Personal consumption or household final consumption represents one of the most important components of aggregate demand. This consumption also makes the biggest GDP component when calculating GDP by expenditure approach. As a significant part of aggregate demand and GDP household final consumption has multiplier effects on employment, investment and savings. Due to its importance personal consumption is a interesting topic for different researches from various perspectives and for discussing correlations between consumption and other macroeconomic aggregates. The aim of this work is to show characteristics of personal consumption in Bosnia and Herzegovina regarding changes of personal changes of personal consumption values and its share in GDP, size of household final consumption and structure of expenditures in household final consumption. According to IMF and EUROSTAT data Bosnia and Herzegovina is at the bottom of the European countries by consumption and standard of living. These two components show slow improvement in Bosnia and Herzegovina due to significant income decrease, high unemployment rate and small FDIs.

1.1. Literature review

J.M. Keynes gave special theoretical contribution to the development of dynamical and contemporary consumer theory by formulating macroeconomic consumption function. Theoretical basis for studies of consumption can be found in the works of economists of neoclassical economic school who tried to explain consumer behaviour. (Denona Bogović, 2002, p.623) Easily said consumption can be defined as the total value of goods and services purchased by household (Wonnacott, Wonnacott, 1990, p.38) or that is consisted of household expenditures on goods and services (Mankiw, 2016, p.27) The behaviour of aggregate consumption has always been of central importance to macroeconomists and that importance survived in one form or another through the many changes in macroeconomic theory. (Deaton, 1992, p.37) Due to importance of personal consumption and its relation with economic movements many economic studies are focused on characteristics of consumption and its changes and trends. In all economies the expansion of output is the sum of the growth of consumption plus investment plus net exports of goods and services. (Lardy, 2006, p.1) Related to this national Agencies and statistical offices worldwide today collect and process data on households budget and its allocation on certain goods and services during certain period of time. Many studies indicate the correlation between size and structure of personal consumption and achieved level of country’s development. Among other things that is addressed also in the following conclusions of the study Denona Bogović (2002):

1) the biggest relative share of consumption in GDP and low value of GDP per capita indicate lower level of economic development of the country, with dominant primary sector

2) at the high level of economic development share of consumption in GDP is around 60%, while value of consumption per capita rises rapidly. (Denona Bogović, 2002, p.626).
Some studies like Wilson (1991) are discussing whether consumption is cause or consequence of GDP behaviour. However, the conclusion is that larger household wealth is associated with higher personal consumption. (Slacalek, 2009, p.1) In small and undeveloped countries like Bosnia and Herzegovina, income and utility of consumption are very important. The consumer allocates their consumption over time so as to maximize a stable individualistic utility function that provides basis for almost all modern work on the determinants of consumption and saving decision. (Carrol, Summers, 1991, p.305)

1.2. Background of research

Research of consumption characteristics in Bosnia and Herzegovina is made for the period 2007-2015 as well as comparison to similar values of the countries in the region. The aim of this work is to show size and structure of personal consumption as one of the most important element of GDP and macroeconomic indicator. Different changes at markets and financial crisis that hit world and Bosnia and Herzegovina economy have affected personal consumption. This work is to show changes of personal consumption during relevant period and what changes have affected the change of personal consumption mostly. Previous researches are done based on consumer behaviour, their habits and marketing aspects of markets of different products.

1.2.1. Model and Data

The aim of this paperwork is to show characteristics of personal consumption in Bosnia and Herzegovina and its changes during certain period of time. To show the mentioned secondary data from various sources are used, especially data from national agencies for statistics and financial institutions, World Bank and EUROSTAT data. Since we observe household final consumption in Bosnia and Herzegovina the most data we have collected from Agency for Statistics of Bosnia and Herzegovina and Central Bank of Bosnia and Herzegovina Reports. We mostly used data from the Household Budget Survey and Report on Gross Domestic Product by expenditure approach for Bosnia and Herzegovina. The Household Budget Survey is a national household based survey conducted every four years in BiH focusing on final consumption expenditure of household. The collected data are related to household expenditure for food and beverages, housing, furniture, clothing and footwear, health, transportation, communication, recreation and leisure, culture and education as well as household income and investment and social inclusion of household members. Gross Domestic Product by expenditure approach defines as total domestic final consumption corrected by external trade balance with the rest of the world. The main components of GDP by expenditure approach are household final consumption expenditure, final consumption of non-profit institutions serving households, final consumption of general government, gross capital formation, export and import of goods and services. The subject of our interest are data on household final consumption expenditures in the period from 2007 to 2015. Based on single data and facts we get general conclusions using
That's [natural text]
footwear, health, transportation, communication, recreation and leisure, culture and education as well as household income and investment and social inclusion of household members. The purpose of the HBS is to get data on the size and structure of household final consumption, their living conditions, living standard and poverty. In the Table 2 it can be seen data on size of consumption per capita and its share in GDP.

Table 2

<table>
<thead>
<tr>
<th></th>
<th>Consumption per capita ($)</th>
<th>% of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>3,724.21</td>
<td>82.30</td>
</tr>
<tr>
<td>2008</td>
<td>3,931.33</td>
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</tr>
<tr>
<td>2009</td>
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<tr>
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<td>3,759.57</td>
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</tr>
<tr>
<td>2011</td>
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<td>81.40</td>
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<tr>
<td>2012</td>
<td>3,736.28</td>
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</tr>
<tr>
<td>2013</td>
<td>3,740.49</td>
<td>79.71</td>
</tr>
<tr>
<td>2014</td>
<td>3,827.97</td>
<td>80.99</td>
</tr>
<tr>
<td>2015</td>
<td>3,625.89</td>
<td>78.66</td>
</tr>
</tbody>
</table>


Comparing data in this two tables it can be seen that in 2007 and 2008 presented indicators for Bosnia and Herzegovina are not so bad. In 2007 Bosnia and Herzegovina economy continues to grow without worsening macroeconomic indicators. Increase of household final consumption was financed by increase of salaries and supported by employment rate increase. Share of household final consumption in GDP in 2007 was 82.30%. At the begining of 2008 financial crisis that hit the world did not yet show effects in Bosnia and Herzegovina whose domestic economy was still relied on domestic consumption. During 2008 consumption per capita as well as share of consumption in GDP increased, that was stimulated by large increase of salaries (especially in the public sector), large amounts of new loans and received remittances from abroad. At the end of 2008 the banking sector of Bosnia and Herzegovina has suffered a strong impact by spreading the effects of global financial and economic crisis due to withdrawl of deposits and worsened conditions for foreign borrowing. This had effect on decrease of avaliability of loans and decrease of personal consumption. But due to large increase of salaries in public sector at the end of 2008 there was increase of consumption per capita and its share in GDP that was 82.83%. During 2009 indicators in Bosnia and Herzegovina have changed a lot due to recession movements. Affected by decrease of employment and slowdown of economy (decrease of industrial production of -3.3%) and slowdown of salaries increase consumption also decreased what can be seen in the Table 2. In 2009 the prices indicated by CPI index decreased for -0.4 that was the first decerase after few years. The highest fall was in the category of transportation caused by fall of oil prices, food and beverages and education. In 2010 there was a light increase of consumption, consumption per capita and its share in GDP.
Unfortunately, the larger increase was not possible due to decrease of real salaries (of -1,1%) and increase of unemployment (+3,1%) that had affect on decrease of disposable income and purchasing power of population. During 2011 and 2012, after short recovery at the beginning, stagnation and slowdown of economic movements continued. The fall of industrial production and salaries also continued as well as increase of unemployment that had affect on low purchasing power of the population and decrease of household final consumption. While disposable income and purchasing power of the population decreased prices have risen. In 2010, 2011 and 2012 the CPI index has risen for 2,1%, 3,7% and 2,1% respectively. The prices of transportation, food and beverages, alcoholic beverages and tobacco have especially risen. During 2013 and 2014 there was a light recovery of the economy. Consumption and consumption per capita have almost stagnated in 2013, while in 2014 there was certain increase of aforementioned indicators. Other economic indicators also shown stagnation or light recovery. Floods that hit Bosnia and Herzegovina in 2014 had significant impact on household consumption in Bosnia and Herzegovina that in 2014 was, due to mentioned, mostly determined by expenditures for existential needs. In this period prices measured by CPI index started to decrease. Due to slow recovery of the economy and salaries stagnation the household final consumption could not grow significantly and its share in GDP is reduced as it can be seen in Table 2.

Trend of household final consumption expenditures is shown in the Figure 1. It can be seen increase of consumption in 2008 caused by large increase of salaries and decrease of unemployment. In the period from 2009 to 2015 the consumption in general has stagnated or has risen very little. The larger grow was not possible due to bad situation in Bosnia and Herzegovina economy, stagnation of incomes and decrease of employment rate, poor living standard.
and purchasing power. During this period prices have also changed as it can be seen from the CPI index in the Table 1. After few years of constant increase of the prices, for the last four years there was decrease of prices in Bosnia and Herzegovina, that is characterized as deflation movements. As prices changed also expenditures for certain goods changed as well as their share in household final consumption. The mentioned can be seen in the Table 3.

<table>
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<tr>
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<td>7,73</td>
<td>7,88</td>
<td>7,58</td>
<td>7,68</td>
</tr>
</tbody>
</table>

Notes: 01-Food and beverages; 02-Alcoholic beverages, tobacco and narcotics; 03-Clothing and footwear; 04-Housing, water, electricity and other fuels; 05-Furnishings, household equipment and routine household maintenance; 06-Health; 07-Transport; 08-Communication; 09-Recreation and culture; 10-Education; 11-Restaurants and hotels; 12-Miscellaneous goods and services. Source: Agency for Statistics of BiH, Annual Reports of national accounts, GDP by expenditure approach, various editions, made by author

When observing data during this period of time the structure of expenditures has not changed significantly. Expenditures for certain categories have changed as prices of these goods and services changed. It can be seen from the Table 3 that the largest share in household final expenditures are of food and beverages (it is over 30% of expenditures in observed period) and housing, water, electricity and other fuels. According to this and other data from the Table 3 it can be said that the largest share of household final consumption and its expenditures are consumption and expenditure for existing needs. One thing that is even more worrying is that a large amount of consumption is financed by consumer credits and credit card borrowing due to low purchasing power and low living standard. The Table 5 shows bank receivables from household by type of borrowing.
Bank receivables from household by type of borrowing(%)

<table>
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<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Bank loans</strong></td>
<td>81,8</td>
<td>93</td>
<td>91</td>
<td>91</td>
<td>82,3</td>
<td>81,8</td>
<td>82,1</td>
<td>81,1</td>
<td>90,6</td>
</tr>
<tr>
<td><strong>Consumer loans</strong></td>
<td>68,5</td>
<td>68,3</td>
<td>67,3</td>
<td>81,8</td>
<td>78,6</td>
<td>78,5</td>
<td>80</td>
<td>ND*</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Credit cards</strong></td>
<td>7,7</td>
<td>6</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>7,4</td>
<td>7,3</td>
<td>7,9</td>
<td>7,4</td>
</tr>
</tbody>
</table>

Notes: ND-no data available

Source: Central Bank of Bosnia and Herzegovina, Report on financial stability, various editions, made by author

The largest part of receivables is from bank loans and thereafter from loans for general consumption. It can be seen that loans for general consumption make 60 percent of total bank loans to households. Data on loans for general consumption in the period 2014-2015 are not available but it can be addressed that receivables from bank loans are still the highest. Having in mind bad economic situation in the country and poor living standards it can be assumed that consumer loans still make the largest share of total bank loans to households. When taking into account receivables from credit cards, it can be seen that those receivables have also risen. Population of Bosnia and Herzegovina uses aforementioned types of borrowing to finance its expenditures and obligations.

When comparing data for Bosnia and Herzegovina with the data on countries of the region (some of those countries are on the same economic development level as Bosnia and Herzegovina) and EU it is seen that Bosnia and Herzegovina is significantly in unfavorable position regarding consumption and its share in GDP. The following Figure 2 shows consumption movements and its share in the countries of the region and in EU in comparison to Bosnia and Herzegovina.

Source: Agency for Statistics of BiH, World Bank Open Data, EUROSTAT, made by author
It can be seen from the Figure that household final consumption share in GDP in Bosnia and Herzegovina is similar like in other countries that are on the similar economic development level with around or above 80% of consumption in GDP. This is confirmation that high share of household final consumption in GDP is characteristic of countries at low level of economic development with poor living standard and purchasing power, where the most expenditures for consumption are for existing needs. The same can be seen when using data on structure of consumption by purpose in the Table 5.

<table>
<thead>
<tr>
<th></th>
<th>01*</th>
<th>02</th>
<th>03</th>
<th>04</th>
<th>05</th>
<th>06</th>
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<td>1.4</td>
<td>6.9</td>
<td>7.6</td>
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</table>

Notes: Categories of consumption by purpose are explained in the Table 3

It can be seen from the Table 5 that expenditures for recreation and other needs other than existing needs make one significant part of final household consumption in countries of higher economic development level. In countries at low economic development these expenditures are still considered to be expenditures for luxury that are not available to the population with poor purchasing power and low living standard.

3. CONCLUSIONS

According to data of macroeconomic indicators represented in this paperwork it can be seen that Bosnia and Herzegovina is country at low economic development level. The consumption makes more than 70 percent of GDP that also indicate poor economic development. The highest amounts of household final consumption expenditures are for basic existing needs. Low level of salaries and their stagnation for the longer period of time as well as high unemployment rate have affected weakening of purchasing power and poor consumption and in the end low domestic demand. In the time of the highest impact of financial crisis the most countries in the world tried to increase the consumption to recover economies. Hence, the consumption is often characterized as one of driving forces of economy but provided that industrial production, employment...
and salaries are increased and GDP should rise 5 percent per year. In the case of Bosnia and Herzegovina these indicators are way from necessary values. Poor domestic consumption and demand in Bosnia and Herzegovina are still limiting factors of economic activity in Bosnia and Herzegovina and risk of domestic macroeconomic environment. One additional problem is that in the case of Bosnia and Herzegovina, one significant part of domestic consumption and demand is satisfied from the foreign trade deficit (import) that even more jeopardize small open economy like.

REFERENCES

Book with an author


Journal paper


Internet resource


Abstract
Given a volatile business environment, enhancing customer experience has become a key resource that has transformed service innovation for business growth. While recent studies have investigated customer value co-creation, there is less knowledge about potential value co-destruction which is that customers respond to negative service encounters in vindictive and aggressive ways. This study aims to examine key triggers of customer negative emotions and propose human needs threat (HNT) as antecedents. This study has two stages. Firstly, the critical incident technique was used as the preliminary study. Secondly, empirical research involved the survey using online panels. Data from 318 respondents of various service contexts were analyzed through structural equation modeling. Finally, this study finds that HNT is a trigger for customer rage in service recovery failure. The findings highlight the challenges for service organizations in managing standards of customer service and ensuring that their employees, especially frontline employees, can monitor customers’ responses based on HNT. This study focuses on social psychology studies and examines that customer rage arises when individuals feel alienated and excluded in service recovery context as do in groups or in their personal relationships.

Keywords: customer value co-destruction, customer rage, service recovery failure, customer experience innovation, human needs threat (HNT)
1. INTRODUCTION

Grove et al. (2004) argue that people are now living in an age of rage. When customers experience unexpected unsatisfactory situations when consuming services or products, they consequently experience negative emotions (Laros and Steenkamp, 2005; Nyer, 2000; Richins, 1997). However, customers often go beyond simply being upset to quickly feeling extremely negative emotions (Bonifield and Cole, 2007; Kalamos et al., 2008; McColl-Kennedy et al., 2009; Patterson et al., 2009; Surachartkumtonkun et al., 2015). Such cases create economic and psychological losses to customers, employees in charge of the relevant services, and the relevant firms (McColl-Kennedy et al., 2009; Patterson et al., 2009; Surachartkumtonkun et al., 2013). Furthermore, one customer’s negative experience can easily become public through various media channels and his or her social networking service activities (Ward and Ostrom, 2006).

Previous studies have defined customer rage as a strong negative and anti-social emotion and as intense anger manifested in ways such as verbal, physical, and displaced anger (Deffenbacher et al., 2002; McColl-Kennedy et al., 2009). Other researchers have argued that rage is a strong and definite emotion and thus is a different form of anger (Kalamos et al., 2008). We conceive of rage as a form of an affective state more definite and powerful than anger that involves aggressive and hostile behavioral responses to the party believed to be the cause of the problem. Furthermore, customer rage is a strong affective state that generates destructive and aggressive behavioral responses. Customers follow their negative emotions and either vent these emotions or take aggressive and confrontational actions (McColl-Kennedy et al., 2009; Patterson et al., 2009). Because rage exhibits different aspects from low or moderate levels of anger in terms of emotion, expression, and behavior, studies on what causes customer rage are necessary. Patterson et al. (2009) explore how customers reach highly negative emotions qualitatively, finding that customers experience extreme emotion when they have repeatedly asked firms for improvement but have received unsatisfactory results. Customers tend to regard such cases as threats to their basic human needs (e.g., self-esteem and fairness) and consequently experience high levels of negative emotions. Research has linked subsequent needs-based cognitive appraisals to the type of service failure (Surachartkumtonkun et al., 2013). For example, customers reach the level of rage because of threats to their fundamental needs, such as self-esteem, need for control, and justice. Research has also investigated the constructs of self-esteem, sense of control, and justice in repetitive service failures as a loss of personal resources (Surachartkumtonkun et al., 2015). These studies are meaningful because they help shed light on customers’ appraisal processes behind rage episodes by demonstrating the association between the types of service failure and recovery failure and by appraising the threat to fundamental human needs or resources.

However, few investigations have examined the role of human needs threat (HNT) in the relationship between the antecedents and consequences of
customer rage for customers’ psychological processes. More specifically, scant research has compared the relative impact of various HNTs in this process. Therefore, the objectives of this study are to (1) identify the threats to human needs that customers experience during a service recovery failure, (2) verify and propose instruments to measure the threats in service contexts on the basis of an interdisciplinary literature review, and (3) empirically validate the role of HNT under the psychological process.

2. EMOTIONS AND COPING IN SERVICE FAILURE

The mechanisms of stress and coping theory well explain how individuals cope with the stress of negative situations (Lazarus and Folkman, 1984). These mechanisms are referred to as coping (Lazarus and Folkman, 1984), and to cope with the stress of failure, consumers employ diverse coping strategies (Duhachek and Kelting, 2009) largely divided into two types (Folkman and Lazarus, 1980). On the one hand, emotion-focused coping refers to coping that focuses more on the feelings each individual experiences in the relevant situation. On the other hand, problem-focused coping refers to coping that addresses and tries to solve the problem. Duhachek (2005) proposes a consumer-oriented framework comprised of three coping strategies: expressive, active, and avoidance/denial. The expressive strategy refers to consumers’ acts of support-seeking behaviors to overcome negative emotions. The active strategy is similar to problem-focused coping and captures customers’ efforts to solve problems. The denial coping strategy is the most passive of the three and involves avoiding the relevant situations or problems. In stressful situations such as service failures, customers use many strategies simultaneously to achieve the most effective outcome (Duhachek, 2005). In particular, studies have found that during service failures, anger causes high levels of expressive behaviors (Bonifield and Cole, 2007; Kalamas et al., 2008). In addition, customers use both expressive and active coping strategies to solve problems (Herrald and Tomaka, 2002). Thus, in this study, we investigate customer rage and the behaviors following service recovery failures using stress and coping theory (Duhachek, 2005; Lazarus and Folkman, 1984).

3. LITERATURE REVIEW AND HYPOTHESES

Customer rage and aggression

Customer rage is powerful anger accompanied by aggressive behaviors or behavioral intentions (McColl-Kennedy et al., 2009). After experiencing service failure and service recovery failure, customers go beyond the level of simply being upset and reach aggressive affective states and resultant behavioral intentions. Therefore, to understand the triggers for such customer rage and the psychological mechanisms needed to reach coping responses, relevant customer behaviors should be examined in the context of aggression.
Research in social psychology has extensively investigated diverse forms of aggression and related behaviors. In particular, results in recent social exclusion or ostracism studies indicate that humans become frustrated and aggressive when they feel left out in relationships with others or in groups to which they belong (Baumeister and Leary, 1995; Leary et al., 1995; Leary et al., 1998, Williams, 2007, 2009; Zadro et al., 2004). In other words, humans experience extreme negative emotions when they feel rejected, ignored, or excluded and act aggressively as a coping response. Researchers argue that the reason for such responses is that humans feel that their fundamental needs, such as the need to belong (Baumeister and Leary, 1995), self-esteem (Leary et al., 1995; Leary et al., 1998), and sense of control, are being threatened (Williams, 2007, 2009; Zadro et al., 2004).

In particular, in explaining human reactions to ostracism, Williams (2007, 2009) argues that threatened fundamental needs play crucial roles. When customers feel that their fundamental human needs have been threatened, they react with related coping behaviors to protect those needs. Williams (2009) presents a “model of ostracism” to argue that ostracized individuals who immediately experience threats to their basic human needs (i.e., belonging, self-esteem, sense of control, and meaningful existence) are consequently motivated to restore such needs (see Figure 1).

**Figure I Conceptual model**

**Perceived justice and HNT**

Justice theory is the most widely used theory to cognitively assess service recovery (McColl-Kennedy and Sparks, 2003; del Río-Lanza et al., 2009; Tyler, 1994). Justice is a cognitive standard employed when people have received something less than what they believe they should have (Lerner, 2003). This standard is based on an instinctive psychological agreement that everybody should be treated fairly (Seiders and Berry, 1998). In the context
of service failure, to appropriately maintain or increase customers’ sense of justice, firms should provide justice in three dimensions: distributive justice, procedural justice, and interactional justice (Smith et al., 1990; Sparks and McColl-Kennedy, 2001; Tax et al., 1998).

As noted previously with regard to social exclusion and ostracism, when people are ignored or rejected in social exchange situations, such an unpleasant experience will eventually make them dislike those who caused the problem (Craighead et al., 1979; Fenigstein, 1979; Geller et al., 1974; Williams, 2009). Such social exclusion or ostracism may threaten four fundamental human needs: the need to belong, the need to maintain a high level of self-esteem, the need to control one’s social environment, and the need to have one’s existence recognized. These four needs can be divided further into two need clusters: the inclusionary need cluster (belongingness and self-esteem) and the power need cluster (sense of control and meaningful existence) (Williams, 2009).

The inclusionary need cluster refers to an individual’s perception of his or her self-worth. Feeling good about him- or herself potentially improves a person’s mental well-being (Caplan, 1974). The quality of interpersonal interactions provided by service employees involves listening to customers’ opinions, displaying sympathy, apologizing, and being responsive. In particular, displaying respect plays a crucial role in increasing customers’ feelings of self-worth. Furthermore, damaging customers’ self-esteem and their sense of belongingness eventually creates negative emotions or vengeful behaviors (Patterson et al., 2009).

The power need cluster refers to individuals’ beliefs that they can well achieve their goals, solve problems, and control situations (White, 1959). Both the need for control and a meaningful existence are basic human desires (Skinner, 1996). As such, if people believe that they have limited or insufficient control, they will feel helpless and engage in maladaptive behaviors (Bowen and Johnston, 1999). The need to have a certain level of control is a prerequisite for satisfactory relationships in social exchange situations (Hui and Bateson, 1991), and this need influences customer satisfaction and positive emotional reactions (Rodin and Langer, 1976). When customers have experienced an initial failure, they expect to exert a certain level of control to solve the problem. However, when the subsequent service recovery fails—that is, when customers expected that they could control the situation and anticipated a solution but the effort failed—they perceive this failure as a lack of control (Surachartkumtonkun et al., 2013). With regard to the HNT scale, because Williams (2009) already specified that the concepts explained by individual needs can overlap in a relevant cluster, analysis based on these clusters should not be theoretically problematic. Thus, we posit the following:

H1. (a) Perceived procedural justice, (b) perceived interactional justice, and (c) perceived distributive justice are negatively related to the inclusionary need cluster.
H2. (a) Perceived procedural justice, (b) perceived interactional justice, and (c) perceived distributive justice are negatively related to the power need cluster.

HNT and rage

Williams (2009) maintains that humans experience perceived threats to their needs when they feel rejected or excluded from interpersonal relationships and that, in such situations, they seek others’ support or engage in more aggressive behaviors to recover (fortify) the interpersonal relationships. Research has argued that in the process of buying and using a brand or service, customers form interpersonal relationships with the brand or service provider (Johnson et al., 2011). Therefore, customers experience more negative emotions in service failure when their self-relevance is high or they have maintained their relationship for a long time and, as such, their trust is high (Johnson et al., 2011; Thomson, 2006).

Essentially, humans expend effort to satisfy their fundamental needs. Doing so brings about cognitive appraisal processes, and the results affect emotional reactions (Baumeister and Leary, 1995; Twenge et al., 2001; Twenge et al., 2003). When the ability to satisfy such needs is blocked, individuals try to find diverse measures around the blockade because satisfying fundamental needs is an inherent motivation in person–environment behaviors (Markus and Wurf, 1987) and thus has critical effects on humans’ psychological well-being and their perceptions of themselves (Markus and Kitayama, 1991). A mismatch between the situation (e.g., a perceived violation of one’s self-esteem due to poor service) and the internal meaning of self (e.g., the need for self-esteem) can result in considerable distress (Burke, 1991). If needs are continuously damaged, seriously negative reactions will arise (Surachartkumtonkun et al., 2013; Williams, 2007, 2009). Therefore, if customers’ fundamental human needs are damaged in service situations, an extreme and negative emotional response may result. Thus, we posit the following:

H3. The perceived threat to the inclusionary need cluster (belongingness and self-esteem) increases rage.

H4. The perceived threat to the power need cluster (sense of control and meaningful existence) increases rage.

Rage and coping behaviors

Rage fosters confrontative coping behaviors, such as marketplace aggression and vindictive complaining. Confrontative coping involves aggressively attacking another party (Folkman et al., 1986) as a way to vent negative emotions and persuade the party to change its mind (Yi and Baumgartner, 2004). Psychological research has shown that anger induces confrontative coping (Frijda, 1987), and research in the context of service failures often refers to confrontative coping as retaliatory behavior (Grégoire and Fisher, 2008). Angry customers tend to engage in two types of retaliation: marketplace aggression and vindictive complaining (Bonifield and Cole 2007; Bougie et al.,
Market aggression means that customers try to damage a firm’s property without breaking its policies (Grégoire and Fisher, 2008). Vindictive complaining means that customers turn on the company and abuse its employees (Grégoire and Fisher, 2008). A subset of vindictive complaining is vindictive negative word of mouth (N-WOM), which involves communicating with other customers in any unfavorable way to denigrate the company (Richins, 1983) and/or advising others not to use the company’s services (Bougie et al., 2003); therefore, vindictive complaining can be understood as an aggressive type of “private response” in Singh’s (1988) taxonomy of consumer complaint behavior. Thus, we posit the following:

H5. Rage increases the intention to engage in confrontative coping behaviors, such as (a) market aggression, (b) vindictive complaining, and (c) vindictive N-WOM.

Rage also fosters non-confrontative coping behaviors and even social-support-seeking behaviors. Social support theory suggests that when coping with stressful situations, people may rely not only on their own resources but also on the resources from their social environment (Albrecht and Adelman, 1984). This process is called support-seeking coping (Duhachek, 2005). Support-seeking N-WOM means that customers talk to others in their environment about service failures and ask for empathy and understanding (Stephens and Gwinner, 1998; Yi and Baumgartner, 2004). Several studies have shown that negative emotions also induce support-seeking coping (Frijsma et al., 1989; Menon and Dubé, 2007; Yi and Baumgartner, 2004). Thus, we posit the following:

H6. Rage increases the intention to engage in support-seeking coping behaviors, such as support-seeking N-WOM.

4. OVERVIEW OF STUDIES

Considering the research objectives, we conducted this study in two stages. First, we conducted qualitative research using the critical incident technique (CIT) to identify the threats to human needs that customers experienced during a service recovery failure based on the proposed conceptual model. Second, we conducted an empirical survey using an online panel. This empirical study had two objectives: (1) to clarify to measure HNT in service contexts on the basis of an interdisciplinary literature review and (2) to empirically validate the role of HNT under the psychological process through which customers experience rage after service failure.

4.1. Study 1

Method

To explore the proposed research framework qualitatively and substantiate application of Williams’s (2009) framework, we first conducted a qualitative study with customers using the CIT and structured questions. The
CIT is a common method to gather deep insights from respondents’ narratives of their own thoughts and emotions in a service context (Gremler, 2004). We systematically analyzed the data following the procedures of Surachartkumtonkun et al. (2013). One of the authors and one trained graduate research assistant conducted content analyses following appropriate standards (Kassarian, 1977; Weber, 1990). Respondents were customers who had experienced extremely negative emotions following a service recovery failure in the last six months.

**Customer sample and questionnaire**

The data for the customer CIT came from 152 adults. The average age of customers was 36.5 years, and 55 per cent were women. The most common types of industries involved in the customer rage episodes were Internet shopping malls, telecommunications service providers, communications service providers (e.g., telecommunications/Internet), and restaurants.

The open-ended questionnaire asked respondents to recall a situation in which they experienced rage following a service recovery failure in the last six months. Customers answered the questionnaire in terms of the details of the rage incidents, including (1) the service industry context (e.g., type of industry), (2) the explanation of the situation (the situation of the encounter), (3) the customers’ appraisal of the service recovery failure (what triggered the incident and the aggravating factors), (4) their thoughts and feelings at certain times during and after the encounter, (4) how they expressed their emotions during the encounter, and (5) their behavioral responses to the firms or service providers.

**Content analysis**

We first defined the units of measurement, such as perceived justice, perceived HNT, customer rage, and coping behaviors, from the proposed conceptual model in Figure 2. We then referred to previous psychological literature for the coding scheme of customers’ cognition (Ellsworth and Smith, 1988; Folkman et al., 1986). Two trained judges coded the data independently. Inter-judge reliability was more than 84 per cent, exceeding the accepted benchmark of 80 per cent (Latham and Saari, 1984). Perreault and Leigh’s index (Ir) which were more appropriate in marketing studies was also used to measure interjudge reliability. Ir was above recommended points, that is, .93 for types of justice and HNT, and .92 for customers’ behaviors following HNT.

**Results and discussion**

We measured the frequency of perceived HNT in service failure and recovery failure, belongingness, self-esteem, sense of control, and meaningful existence. Some of customers’ responses to HNTs were not included in single category. Threats to self-esteem and sense of control led to more extreme negative emotions and anti-brand actions. Thus, if customers perceive their self-esteem as being threatened, they feel betrayed and retaliate with vengeful behavior or switch to other brands. If they perceive their sense of control as being threatened, they feel frustrated, which also leads to anti-brand actions (see Tables I and II).
Consequently, as Williams (2009) proposes, customers actually feel threats to their needs after experiencing a service failure and a recovery failure in four dimensions: belonging, self-esteem, sense of control, and meaningful existence. In addition, these threats play major roles in the process through which customers reach the powerful negative emotion of rage. Among the four needs, customers experience threats to their self-esteem and sense of control the most frequently.

In summary, through the CIT, we qualitatively identified that Williams’s (2009) framework was applicable. Therefore, Study 2 validates whether the HNT scale employed in social psychology to determine the causes of coping responses to the social exclusion or ostracism experienced in interpersonal relationships can explain customer rage in service failure situations.
4.2. Study 2

Method

After identifying the effect of perceived HNT on customers’ psychological processes regarding service recovery failure, we empirically tested the conceptual model. The objectives were to (1) validate the perceived HNT scale using Williams’s (2009) framework in the recovery failure context and (2) test the proposed model empirically. The research context, or domain, was the service industry. Consistent with research on customers’ negative emotions during service failure and service recovery (Grégoire and Fisher, 2008, Tax et al., 1998), the study was based on retrospective experiences. After describing a recent service failure and recovery failure episode through open-ended questions, respondents were asked to recall their thoughts and emotions experienced at the time. We used an online panel to collect data on the service industry, respondents’ age, and respondents’ gender and to capture a wider range of service and recovery failures with varying degrees of severity. In total, we surveyed 318 respondents, all of whom were over 20 years of age. Respondents were customers who had experienced extremely negative emotions accompanied by rage following a repetitive service failure. We also measured the failure severity and blame attribution (Grégoire and Fisher, 2008; Grégoire et al., 2010) as control variables.

Sample and procedures

The sample (n = 318) was recruited over one week by a marketing research firm from its online panel of Korean consumers. The respondents reflect the demographics of the adult Korean population (average age = 38.4 years, SD = 9.483, 53.9% male). At the initial stage, we screened out respondents who indicated a low level of rage because our intention was to examine those who experienced the intensity of rage. Respondents were asked to recall their rage experience following the service recovery failure, describe the details of the situation and the encounter, and answer questions about their perceived justice, HNT, level of rage, behaviors, and demographics. In terms of industries, respondents mostly experienced customer rage from online malls, telecommunications services, and communication services (e.g., telecommunications/Internet).

Measures

All measures employed seven-point scales. For perceived justice, we chose the well-established constructs and measurements of Grégoire and Fisher (2008) and Grégoire et al. (2010). We measured perceived HNT with the 17-item scale developed by Williams (2009). This scale measures threatened human needs in the social exclusion and ostracism contexts in social psychology research. Thus, we checked the validity of applying this scale to the service context before measuring the proposed conceptual model.

To measure customer rage, we referred to McColl-Kennedy et al.’s (2009) results. As discussed previously, they define emotions, expressions, and behaviors related to customer rage and provide a scale. We measured the expressions and behaviors of coping responses with a scale that has been widely employed in the area of service failure. Therefore, we examined rage by focusing on the emotions...
mentioned in McColl-Kennedy et al.’s (2009) study. Although these researchers sub-divided rage into rancorous rage and retaliatory rage, the purpose of the current study is to examine results according to different types of threats. Therefore, we compared the indexes with existing measures for negative emotions to ensure that they were comprehensive and capable of encompassing a high intensity of negative emotions.

For coping responses, we divided coping strategies into two categories: confrontative and non-confrontative coping (Duhachek, 2005; Gelbrich, 2010; Grégoire and Fisher, 2008). Confrontative coping includes market aggression, vindictive complaining, and vindictive N-WOM. Non-confrontative coping includes support-seeking N-WOM. We controlled for the effects of age and gender on all endogenous variables (Aquino et al., 2001), failure severity, and blame attribution (Grégoire et al., 2010).

Results

Validation of the HNT scale. We conducted an exploratory factor analysis (EFA) and then a confirmatory factor analysis (CFA) to test the integrity of the perceived HNT scale. We also conducted structural equation modeling analyses to test the hypotheses and the mediating effects of perceived HNT. In applying the HNT scale, we followed the structural empirical scale development procedure (Churchill, 1979; Gerbing and Anderson, 1998). First, at the item judging stage, we assessed the face and content validities using marketing experts, two faculty members, and two doctoral students as judges (Table III). We used the standard for whether items are relevant in the service failure and recovery context. As a result, we included 13 of the original 17 items (Williams 2009).

Table III

<table>
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<tr>
<th>Construct</th>
<th>Items</th>
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<tbody>
<tr>
<td>Belongingness threat</td>
<td>I felt disconnected.</td>
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<tr>
<td></td>
<td>I felt rejected.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I felt like an outsider.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I felt like I belonged to the group.</td>
<td></td>
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<tr>
<td></td>
<td>I felt the other players interacted with me a lot.</td>
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<tr>
<td>Self-esteem threat</td>
<td>I felt good about myself.</td>
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<tr>
<td></td>
<td>My self-esteem was high.</td>
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<tr>
<td></td>
<td>I felt liked.</td>
<td>v</td>
</tr>
<tr>
<td></td>
<td>I felt satisfied.</td>
<td></td>
</tr>
<tr>
<td>Sense of control threat</td>
<td>I felt that I was in control.</td>
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<td></td>
<td>I felt that I had the ability to significantly alter events.</td>
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<tr>
<td></td>
<td>I felt that I was unable to influence the others’ actions.</td>
<td></td>
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<tr>
<td></td>
<td>I felt the other decided everything.</td>
<td></td>
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<tr>
<td>Meaningful existence threat</td>
<td>I felt invisible to others.</td>
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<tr>
<td></td>
<td>I felt nonexistent.</td>
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<tr>
<td></td>
<td>I felt important.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I felt useful.</td>
<td>v</td>
</tr>
</tbody>
</table>
Next, we conducted an EFA to verify the dimensional structure of the HNT through factor analysis. We subjected the 13 items to a principal components analysis (Varimax rotation). The results retained all items in a three-factor solution, which accounted for 73 per cent of the variance. We used factor loading with an absolute value of more than .5 as the cutoff point for item retention and deleted items with cross-loadings of more than .4 points. The removal of items resulted in a nine-item scale. As a result, the factor of “meaningful existence” was not included (Table IV).

### Table IV

<table>
<thead>
<tr>
<th></th>
<th>Factor 1</th>
<th>Factor 2</th>
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<tbody>
<tr>
<td>I felt disconnected.</td>
<td>.208</td>
<td>.340</td>
<td>.719</td>
</tr>
<tr>
<td>I felt rejected.</td>
<td>.144</td>
<td>.163</td>
<td>.853</td>
</tr>
<tr>
<td>I felt I did not belong to the group.</td>
<td>.209</td>
<td>.235</td>
<td>.804</td>
</tr>
<tr>
<td>I did not feel good about myself.</td>
<td>.813</td>
<td>.128</td>
<td>.190</td>
</tr>
<tr>
<td>My self-esteem was not high.</td>
<td>.760</td>
<td>.104</td>
<td>.283</td>
</tr>
<tr>
<td>I felt unsatisfied.</td>
<td>.810</td>
<td>.273</td>
<td>.132</td>
</tr>
<tr>
<td>I felt invisible to others.</td>
<td>.657</td>
<td>.490</td>
<td>.116</td>
</tr>
<tr>
<td>I felt nonexistent.</td>
<td>.681</td>
<td>.545</td>
<td>.137</td>
</tr>
<tr>
<td>I felt I was not important.</td>
<td>.623</td>
<td>.574</td>
<td>.160</td>
</tr>
<tr>
<td>I felt that I was not in control.</td>
<td>.316</td>
<td>.590</td>
<td>.379</td>
</tr>
<tr>
<td>I felt I did not have the ability to significantly alter events.</td>
<td>.236</td>
<td>.849</td>
<td>.249</td>
</tr>
<tr>
<td>I felt I was unable to influence the action of others.</td>
<td>.263</td>
<td>.837</td>
<td>.187</td>
</tr>
<tr>
<td>I felt the others decided everything.</td>
<td>.165</td>
<td>.772</td>
<td>.327</td>
</tr>
</tbody>
</table>

We conducted CFA to confirm the properties of the HNT scale generated from the purification process. To test this structure, we assessed the dimensionality of the first-order dimensions and ensured that items did not cross-load on other factors. We used modification indexes to achieve a better-fitting model, following the recommendations of Schermellen-Engel et al. (2003) and Hair et al. (2006). The fit indexes for the final corrected model showed acceptable fit ($\chi^2 = 46.3992$, df = 23; GFI = .970; CFI = .986; RMSEA = .057). Nine items in total remained as the final measurement of HNT. All factor loadings are significant at the .001 level, and factor loadings as well as composite reliabilities are greater than .7, suggesting internal consistency (Bagozzi and Yi, 1988). The average variance extracted (AVE) for each measure is greater than .5, in support of convergent validity (Bagozzi and Yi, 1988). A comparison of the AVE of each construct and the correlations with all other constructs confirmed discriminant validity (Fornell and Larcker, 1981) (Tables V and VI).
### Table V

CFA results

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor Loadings</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belongingness</td>
<td>I felt disconnected.</td>
<td>0.758</td>
<td>6</td>
<td>3.97</td>
</tr>
<tr>
<td></td>
<td>I felt rejected.</td>
<td>0.754</td>
<td>6</td>
<td>4.77</td>
</tr>
<tr>
<td></td>
<td>I felt I did not belong to the group.</td>
<td>0.819</td>
<td>6</td>
<td>4.25</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>I did not feel good about myself.</td>
<td>0.796</td>
<td>6</td>
<td>4.02</td>
</tr>
<tr>
<td></td>
<td>My self-esteem was not high.</td>
<td>0.749</td>
<td>6</td>
<td>4.36</td>
</tr>
<tr>
<td></td>
<td>I felt unsatisfied.</td>
<td>0.897</td>
<td>6</td>
<td>3.90</td>
</tr>
<tr>
<td>Sense of control</td>
<td>I felt I did not have the ability to significantly alter events.</td>
<td>0.910</td>
<td>6</td>
<td>3.95</td>
</tr>
<tr>
<td></td>
<td>I felt I was unable to influence the action of others.</td>
<td>0.921</td>
<td>6</td>
<td>3.93</td>
</tr>
<tr>
<td></td>
<td>I felt the others decided everything.</td>
<td>0.787</td>
<td>6</td>
<td>4.07</td>
</tr>
</tbody>
</table>

### Table VI

Validity check results

<table>
<thead>
<tr>
<th>Cronbach’s α</th>
<th>CR</th>
<th>AVE</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Belongingness</td>
<td>.82</td>
<td>.821</td>
<td>.605</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>.853</td>
<td>.856</td>
<td>.666</td>
</tr>
<tr>
<td>Sense of control</td>
<td>.905</td>
<td>.907</td>
<td>.765</td>
</tr>
</tbody>
</table>

*Note:* (       ) = AVE
Values below the diagonal = correlation estimates, values above the diagonal = squared correlations.

**Measurement model.** We tested the measurement properties and hypotheses using the structural equation modeling analysis with IBM SPSS Amos 21 software. We validated the measurement model for each latent construct before testing the structural model. For the component structure, the EFA results of perceived justice, perceived HNT, customer rage, and coping behaviors were more than 70 per cent of the variance for each. These results are in line with the literature we adopted. We then conducted a CFA for the measurement model (Fornell and Larcker, 1981). The fit of the finalized confirmatory factor model was acceptable ($\chi^2 = 869.201$, df = 448; GFI = .862; CFI = .947; NFI = .892; RMSEA = .054). The measurement model consisted of eight correlated latent variables. Tables VII and VIII show the number of items, factor loadings, Cronbach’s alphas, composite reliability values, and AVE estimates.
### Table VII

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Standard Factor Loading</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Procedural justice</strong></td>
<td>Despite the hassle caused by the problem, the firm responded fairly and quickly.</td>
<td>0.770</td>
<td>6</td>
<td>3.26</td>
<td>1.56</td>
</tr>
<tr>
<td></td>
<td>I feel the firm responded in a timely fashion to the problem.</td>
<td>0.872</td>
<td>6</td>
<td>3.25</td>
<td>1.63</td>
</tr>
<tr>
<td></td>
<td>With respect to its policies and procedures, the firm handled the problem in a fair manner.</td>
<td>0.780</td>
<td>6</td>
<td>3.24</td>
<td>1.61</td>
</tr>
<tr>
<td><strong>Interactional justice</strong></td>
<td>The employees treated me in a polite manner.</td>
<td>0.932</td>
<td>6</td>
<td>3.86</td>
<td>1.62</td>
</tr>
<tr>
<td></td>
<td>The employees gave me detailed explanation and relevant advice.</td>
<td>0.947</td>
<td>6</td>
<td>3.30</td>
<td>1.62</td>
</tr>
<tr>
<td></td>
<td>The employees treated me with respect.</td>
<td>0.889</td>
<td>6</td>
<td>3.40</td>
<td>1.63</td>
</tr>
<tr>
<td><strong>Distributive justice</strong></td>
<td>The employees treated me with empathy.</td>
<td>0.817</td>
<td>6</td>
<td>3.28</td>
<td>1.61</td>
</tr>
<tr>
<td></td>
<td>Overall, the outcome I received from the service firm was fair.</td>
<td>0.920</td>
<td>6</td>
<td>2.81</td>
<td>1.63</td>
</tr>
<tr>
<td></td>
<td>Given the time, money, and hassle, I received a fair outcome.</td>
<td>0.886</td>
<td>6</td>
<td>3.01</td>
<td>1.73</td>
</tr>
<tr>
<td></td>
<td>I got what I deserved.</td>
<td>0.873</td>
<td>6</td>
<td>2.91</td>
<td>1.71</td>
</tr>
<tr>
<td><strong>Inclusionary Threat Cluster</strong></td>
<td>I felt disconnected.</td>
<td>0.748</td>
<td>6</td>
<td>3.97</td>
<td>1.54</td>
</tr>
<tr>
<td></td>
<td>I felt rejected.</td>
<td>0.776</td>
<td>6</td>
<td>4.77</td>
<td>1.58</td>
</tr>
<tr>
<td></td>
<td>I felt I did not belong to the group.</td>
<td>0.804</td>
<td>6</td>
<td>4.25</td>
<td>1.56</td>
</tr>
<tr>
<td></td>
<td><em>Belongingness threat</em></td>
<td>0.801</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I did not feel good about myself.</td>
<td>0.797</td>
<td>6</td>
<td>4.02</td>
<td>1.62</td>
</tr>
<tr>
<td></td>
<td>My self-esteem was not high.</td>
<td>0.887</td>
<td>6</td>
<td>4.36</td>
<td>1.64</td>
</tr>
<tr>
<td></td>
<td>I felt unsatisfied.</td>
<td>0.791</td>
<td>6</td>
<td>3.90</td>
<td>1.62</td>
</tr>
<tr>
<td></td>
<td><em>Self-esteem threat</em></td>
<td>0.720</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power Need Cluster</strong></td>
<td>I felt I did not have the ability to significantly alter events.</td>
<td>0.908</td>
<td>6</td>
<td>3.95</td>
<td>1.62</td>
</tr>
<tr>
<td></td>
<td>I felt I was unable to influence the action of others.</td>
<td>0.703</td>
<td>6</td>
<td>3.93</td>
<td>1.66</td>
</tr>
<tr>
<td></td>
<td>I felt the others decided everything.</td>
<td>0.925</td>
<td>6</td>
<td>4.07</td>
<td>1.63</td>
</tr>
<tr>
<td></td>
<td><em>Rage</em></td>
<td>0.901</td>
<td>6</td>
<td>4.19</td>
<td>1.52</td>
</tr>
<tr>
<td></td>
<td>I felt overpowering destructive rage.</td>
<td>0.785</td>
<td>6</td>
<td>3.63</td>
<td>1.66</td>
</tr>
<tr>
<td><strong>Market aggression</strong></td>
<td>I have damaged property belonging to the service firm.</td>
<td>0.820</td>
<td>6</td>
<td>1.53</td>
<td>1.13</td>
</tr>
<tr>
<td></td>
<td>I have deliberately bent or broken the policies of the firm.</td>
<td>0.926</td>
<td>6</td>
<td>1.89</td>
<td>1.45</td>
</tr>
</tbody>
</table>
Vindictive complaining

I complained to the firm to…
... give a hard time to the representatives. 0.868 6 4.80 1.52
... be unpleasant with the representatives of the company. 0.850 6 5.03 1.34
... make someone from the organization suffer for their services. 0.856 6 4.93 1.43

Support-seeking N-WOM

I would talk to other people about my negative experience to…
... get some comfort. 0.885 6 3.61 2.05
... feel better. 0.910 6 3.90 1.92
... share my feelings with others. 0.879 6 3.99 1.93

Vindictive N-WOM

I would talk to other people about my negative experience to…
... spread negative word of mouth about the firm. 0.894 6 3.08 1.81
... denigrate the firm to others. 0.959 6 3.03 1.75
... warn others not to use the firm. 0.866 6 3.25 1.92

Table VIII
Constructs validity check

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s α</th>
<th>CR</th>
<th>AVE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Procedural justice</td>
<td>0.85</td>
<td>0.85</td>
<td>0.65 (0.65)</td>
<td>0.53</td>
<td>0.51</td>
<td>0.01</td>
<td>0.00</td>
<td>0.00</td>
<td>0.11</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>2.Interactional justice</td>
<td>0.94</td>
<td>0.94</td>
<td>0.81 0.73 (0.81)</td>
<td>0.40</td>
<td>0.03</td>
<td>0.01</td>
<td>0.02</td>
<td>0.06</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.Distributive justice</td>
<td>0.92</td>
<td>0.92</td>
<td>0.80 0.71 0.63 (0.80)</td>
<td>0.04</td>
<td>0.03</td>
<td>0.03</td>
<td>0.09</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.Inclusionary need cluster</td>
<td>0.83</td>
<td>0.73</td>
<td>0.58 0.09 -0.17 -0.19 (0.58)</td>
<td>0.43</td>
<td>0.45</td>
<td>0.07</td>
<td>0.15</td>
<td>0.11</td>
<td>0.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.Power need cluster</td>
<td>0.90</td>
<td>0.90</td>
<td>0.70 -0.04 -0.09 -0.16 0.65 (0.70)</td>
<td>0.15</td>
<td>0.07</td>
<td>0.04</td>
<td>0.06</td>
<td>0.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.Rage</td>
<td>0.84</td>
<td>0.83</td>
<td>0.71 -0.02 -0.14 -0.17 0.67 0.39 (0.71)</td>
<td>0.10</td>
<td>0.19</td>
<td>0.07</td>
<td>0.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.Market aggression</td>
<td>0.84</td>
<td>0.87</td>
<td>0.77 0.33 0.24 0.30 0.26 0.26 0.31 (0.77)</td>
<td>0.00</td>
<td>0.03</td>
<td>0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.Vindictive complaining</td>
<td>0.90</td>
<td>0.89</td>
<td>0.74 -0.04 -0.10 -0.06 0.38 0.21 0.44 -0.05 (0.74)</td>
<td>0.06</td>
<td>0.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.Support-seeking N-WOM</td>
<td>0.93</td>
<td>0.92</td>
<td>0.80 -0.04 -0.08 -0.03 0.34 0.25 0.27 0.17 0.24 (0.74)</td>
<td>0.43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.Vindictive N-WOM</td>
<td>0.92</td>
<td>0.93</td>
<td>0.82 -0.03 -0.07 0.02 0.33 0.25 0.36 0.32 0.24 0.66 (0.82)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: (       ) = AVE

Values below the diagonal = correlation estimates, values above the diagonal = squared correlations.
**Structural model and hypotheses tests.** We used structural equation modeling analysis to estimate the theoretical model depicted in Figure 2. The fit for the corrected model was acceptable ($\chi^2 = 915.834$, df = 473; GFI = .856; CFI = .944; NFI = .902; RMSEA = .054). We evaluated the proposed hypotheses using the estimated path coefficients shown in Table IX. We tested each dimension of HNT to understand its effect on rage. The effects of the inclusionary need cluster and the power need cluster were supported, though the impact of the inclusionary need cluster was stronger. In addition, interactional injustice affected the inclusionary need cluster, while distributive and procedural injustice affected the power need cluster. Accordingly, interactional injustice is the key trigger of customer rage, as Table IX shows.

<table>
<thead>
<tr>
<th>Hypotheses test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized Estimate</td>
</tr>
<tr>
<td>Procedural justice→Power need cluster</td>
</tr>
<tr>
<td>International justice→Power need cluster</td>
</tr>
<tr>
<td>Distributive justice→Power need cluster</td>
</tr>
<tr>
<td>Procedural justice→Inclusionary need cluster</td>
</tr>
<tr>
<td>Interactional justice→Inclusionary need cluster</td>
</tr>
<tr>
<td>Distributive justice→Inclusionary need cluster</td>
</tr>
<tr>
<td>Power need cluster→Rage</td>
</tr>
<tr>
<td>Inclusionary need cluster→Rage</td>
</tr>
<tr>
<td>Rage→Market aggression</td>
</tr>
<tr>
<td>Rage→Vindictive complaining</td>
</tr>
<tr>
<td>Rage→Vindictive N-WOM</td>
</tr>
<tr>
<td>Rage→Support-seeking N-WOM</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01, ***p < .001.

5. **CONCLUSION**

First, we identified the perceived HNT measurement items in the service recovery failure context and confirmed the inclusionary need and power need clusters. Second, we confirmed the negative effects of perceived justice on perceived HNT, the positive effects of perceived HNT on customer rage, and the positive effects of customer rage on confrontative and non-confrontative coping behaviors. Third, we determined the mediating effects of perceived HNT on the relationship between perceived justice and customer rage.

This study highlights the challenges of managing customer service standards and providing services that enable employees to monitor their
responses based on HNT. Focusing on sociological psychology studies, this study examines that customer rage arises when individuals feel alienated and excluded in service recovery context as do in groups or in their personal relationships. Thus, frontline employees and service managers should realize that customers seek fulfillment of a set of psychological needs from service encounters.

6. DISCUSSION

Theoretical implications

The results broaden the understanding of the role of threats to human needs as major triggers for the rage customers experience in service recovery failure contexts. First, we proposed an extended psychological process by incorporating perceived HNT. Building on stress and coping theory, our research demonstrates that perceived HNT is largely responsible for activating customer rage following service recovery failures. We identified the role of perceived HNT on the relationship between cognitive appraisal (i.e., perceived justice) and emotion (i.e., rage) and proved the effect of perceived HNT. Thus, perceived HNT is a key trigger for customer rage.

Second, we verified the HNT scale to demonstrate comprehensive psychological processes. Research in social psychology has employed this scale to explain the causes of social exclusion or ostracism using systematized human needs structures; in turn, we demonstrate the applicability of this scale in the service context for the first time.

Third, the results substantiate moving from the existing managerial-centric perspective to a customer-centric perspective to understand service failure and negative emotions. Existing justice theories establish what service providers should do to improve services. That is, these theories helped define management improvement points, such as compensation, employee responses, and procedural impartiality, by examining customers’ evaluations of service recovery for distributive, procedural, and interactional aspects. However, these theories are not sufficient for interpreting customers’ emotions and mental states. The current study enables such interpretation by giving more weight to customers’ emotions and mental states and by examining the role of threats to human needs during service failure.

Last, previous empirical studies were conducted in states in which the division and boundary between customer rage and other negative emotions are vague. However, in line with McColl-Kennedy et al.’s (2009) definition of customer rage, the current study argues that customer rage differs from other less or moderately negative forms of aggression. That is, this study uses the results of social psychology studies that indicated that aggression arises when humans feel alienated in their relationships or in the groups to which they belong. Thereafter, this study reveals that threats to human needs are triggers for customer rage in the service failure context. In addition, this study presents a comprehensive model to explain the causes of customer rage in this process.
Managerial implications

This research highlights the importance of prioritizing either problem-solving actions or customers’ emotional states, depending on customers’ psychological resources and coping strategies. Service providers must be empowered to govern the process of recovery from a service failure. Frequently, companies focus on finding a functional compromise and ignore the emotional aspects of the failure. In practical terms, however, effectively handling service failure recovery requires hiring and training personnel to incorporate customer–provider interventions and understand customers’ emotional and cognitive responses to failures.

The psychological characteristics and abilities of service employees are becoming a competitive tool for service organizations. Service personnel should be able to identify customer coping styles and employ a targeted approach to recovery strategies. This also implies a challenge for service organizations in managing the standards of customer service and ensuring that their employees, especially frontline employees, can monitor customers’ responses based on HNT.

The economic impact generated by complaints is superseded by overwhelming emotions (Chebat and Slusarczyk, 2005). Consequently, frontline employees should be aware of the emotional climate of customers’ complaints and trained to monitor it. Frontline employees and their supervisors need to have the mind-set that customers come first and to realize that they seek fulfillment of a set of psychological needs from service encounters. This means that firms must understand and avert failed service encounters that may threaten fundamental human needs.

Limitations and further research

The limitations of this research are as twofold. First, retrospective-based field studies involve memory bias that may affect the accuracy of customers’ recall (e.g., Smith et al., 1999). Second, further research could refine our proposed scale by using extended service contexts. In this study, the factor of “meaningful existence” was not included. Thus, with varied service contexts and samples, the proposed HNT scale can be re-validated. Last, it would be worthwhile to enhance the external and internal validity by surveying respondents in different contexts. Furthermore, a scenario-based approach would extend the results for effective managerial intervention and differentiate the type of intervention appropriate for each threatened need.
REFERENCES


619


PLAIN PRODUCTS – A COMPREHENSIVE ANALYSIS OF CONSUMER PERCEPTIONS VS. BUSINESS IMPLICATIONS FOR COMPANIES

Review
UDK: 366.12:621.798
JEL classification: M31, M38, K23

Abstract

This scientific paper is focused on analysis of plain product concept, by taking in consideration relevant perspectives – a policy perspective, related to the measures and regulations regarding the plain packaging; consumer perspective - behavior, perceptions, associations and other prerequisites for building a consumer loyalty, in terms of branded vs. non branded products and plainin packagings, and the companies perspective, through taking in consideration the implication for businesses caused by literal un-branding of these sensitive products. The plain product concept has a significant influence on consumer behavior, and the brand building and loyalty-strengthening processes. It refers to application of generic packaging for potentially harmful products, as well as removal of brand elements, features and/or trademarks that would be attractive or appealing to consumers, due to institutional environment and policy regulations. Particular attention will be paid to analysis of actual application of this concept in practice.

Keywords: plain packaging, demarketing, non branding
1. INTRODUCTION

The roots of plain packaging could be identified back in 70’s and 80’s in XX century. It refers to application of generic packaging, as well as removal of brand elements, features and/or trademarks that would be attractive or appealing to potential consumers, in terms of consumption of potentially harmful products. It has been introduced as a set of state regulation measures employed in terms of consumption of socially harmful goods such as tobacco products, alcoholic beverages and other sensitive products. The emergence of a new conceptual “no branding” approach regarding the socially harmful goods is originally referred as “Plain packaging”. It is completely opposite approach compared to marketing and branding, actually, introduction of plain packaging is a part of demarketing strategy, undertaken by governmental institution through a set of regulations, aimed to reduce the consumption of sensitive products in order to achieve a positive social impact, such as improving the public health etc. However, there is no significant research background that would clearly explain how demarketing activities influence consumer behavior in this sense.

Even though there are some research evidence regarding the functioning of the individual elements of marketing mix in a demarketing context and their effects on smoking reduction, relatively little is known about how the 4Ps marketing mix contributes toward the achieving the goals of governmental demarketing, including tobacco (Shiu et al, 2008, p.2). In this paper, plain packaging introduction is observed both from policy perspective, as a governmental demarketing measure, and from consumer perspective, related to consumer behavior, attitudes and perceptions, and their shift as a result of changes in the marketing and demarketing environment.

The history of advocacy for plain packaging goes back to 1989, when Canadian legislation has banned the tobacco advertising, and stimulated tobacco industry to introduce the plain packs. Also, in 1989, the New Zealand government has adopted regulations related to tobacco product packagings, providing that cigarettes should be sold in plain white packs with simple black text and no colours or logos. In Australia in 1992 it was recommended that ‘regulations should be extended to cover the colours, design and wording of the entire exterior of the pack’ (Freeman, Chapman, Rimmer, 2007). In 1994, these measures were considered in Canada, but dismissed, due to legal issues in relation to commercial rights and intellectual property rights (Sambrook Research International, 2009). However, plain packs were endorsed and it was recommended that enabling legislation should be implemented depending on the probable effectiveness of plain packs.

2. PLAIN PACKAGING AS A DEMARKETING POLICY MEASURE – BEYOND THE INTERESTS OF BUSINESSES AND CONSUMER WELFARE

Regarding the establishment of a formal legislative infrastructure related to the plain packaging application, Australia was the first country that adopted the measures and implement it into practice of state regulation of the commodity
market (from 1.09. 2012); followed by France, which implemented the measure from 31 December 2016. In the UK, plain packaging has been in force as of May 2017; Ireland has signed a commencement order on 29 March 2017, enforcing standardised packaging as of 30 September 2017; Hungary will implement plain packaging in 2018 and Slovenia in January 2020. USA Legislation does not explicitly urge businesses to introduce plain packagings, moreover, there is an evident resistance in USA economy towards these measures. Even though in numerous analyses it has been emphasised that the plain packs are becoming the global norm, no significant adjustments in US regulation has been evident so far.

In Europe, the first EU wide requirements for tobacco plain labelling were introduced in 1989, through the labelling Directive (89/622/EEC) and amended in 1992. Belgium was the first EU Member State to introduce pictorial warnings on cigarette packs in November 2006, followed by Romania in July 2008 and the UK in October 2008 (Sambrook Research International, 2009). While scientific evidence shows that plain packaging has a positive impact on public health, the WHO FCTC and the EU Tobacco Products Directive (TPD) provide legal frameworks for their introduction. Therefore EU Member States are urged to introduce plain packaging and to evaluate the results of the implementation. A number of other countries have already taken serious steps in the legislation process or formally considered to introduce these legal measures such as Norway, New Zealand, Canada, Uruguay, Thailand, Singapore, Belgium, Romania, Turkey, Finland, Chile and South Africa. EU candidate countries, such as Republic of Macedonia, are strongly advised to further adjust and harmonise their legislation in this direction (ENSP, 2017).

Research findings undoubtedly indicate that “plain and generic packaging of tobacco products (all other things being equal), through its impact on image formation and retention, recall and recognition, knowledge, and consumer attitudes and perceived utilities, would likely depress the incidence of smoking uptake by non-smoking teens, and increase the incidence of smoking cessation by teens and adult smokers” (Freeman, Chapman, Rimmer, 2007).

There are comprehensive studies conducted in this context, which indicate that “compared with a ‘classic’ package, the neutral package is associated with less positive assessments of the packaging, brand and cigarettes it contains. A lower satisfaction with smoking and smoking in front of others was also noted. This study shows that, in line with previous work on the neutral package, the latter influences the reactions of smokers in a direction favorable to tobacco control policy” (Gallopel-Morvan, 2015, p. 17-18: 308-315).
Figure 1 Key tobacco control measures in Australia and their influence on decrease of the number of smokers

Source: *Australian National Health Surveys 2011-12, 2014-15, Department of health, 2015*

According to this conceptual approach, customers are expected to change their behaviour and attitudes due to the absence of recognisable brand elements on the package, that are the drivers of their loyalty. Investigation of consumer behavior in specific environment, in terms of demonstrating various behaviour when consuming branded tobacco products vs non-branded (plain) packagings, scientific evidence undoubtedly indicate that “plain packaging reduces smoking prevalence, increases thoughts about quitting and calls to quit lines, reduces brand awareness, attractiveness and appeal of the package, increases awareness and effectiveness of health warnings among adolescents, does not impact illicit trade or product retrieval time (Joint Statement of Plain Packaging ERS/ENSP, 2016). A substantial number of peer-reviewed studies that examine plain packaging support the conclusion that introduction of plain packaging reduces the attractiveness and appeal of tobacco products (WHO, 2016).

It is evident that plain packaging and new larger health warnings have been introduced recently, as a complementary set of measures in the overall set of regulations and measures. Numerous studies (many of them cited in this text), have been conducted with a main purpose of justification of such measures, seeking for scientific evidence related to the influence of brand on consumer behaviour, and therefore, the expected shift in their attitudes and behaviour as
a result of removing the brand elements that lead to high degree of consumer attachment to the brands, so called Keller’s brand resonance stage, characterised by maximum attachment, loyalty, sense of belonging to the community and highly emotional and irrational attachment to the brand, accompanied with limited rationality during the purchasing decision making and consumption.

Figure 2  Keller’s Brand Equity Model

Source: Strategic Brand Management – Building, Measuring and Managing Brand Equity, Kevin Lane Keller, Pearson Education 2013

Brand building process is very complex, and starts with creating favourable associations in the consumer’s minds, that further generate favourable feelings and judgements, that implicitly lead to strong emotional attachment to the brand. There are a lot of nonfinancial indicators developed for the purposes of measuring the brand performance, relying on consumers positive perceptions and associations as a main generators for positive brand equity, and, implicitly, brand loyalty. Strong brand is a generator of profitability and growth of the company, and a goodwill creator, so it is logical that most of nonfinancial indicators are closely related to measurement of intangible brand features that lead to materialised direct effects, such as sales volume, market share, profitability, ROI etc (Mojsovska Salamovska, 2015, p.267). Therefore, governmental demarketing policies have completely opposite starting point - their purpose is to stimulate consumers rational judgement, to minimise the emotional decision making in consumption of potentially harmful products, and also to generate realistic associations and feelings, that in this context are negative, and appealing to health damages etc. Introduction of plain products tends to make the consumer decision making more objective, and to eliminate the explicit influence of strong brand elements that lead to limited rationality in this process.
Research findings indicate that such restrictions can also impact other commodity groups such as alcoholic beverages, fast food, carbonated soft drinks, toys, sugar, computer games etc. In addition, another negative phenomenon of the introduction of the concept of no brand goods in the framework of the concept of state regulation of socially harmful goods both in Australia and in the UK was the criminalization of the production sphere and tobacco products sale. It is estimated that around 50% of the UK smokers have switched to the consumption of illicit tobacco products from countries with cheaper production resources (labor, means of production, logistics). (Syaglova, 2017, p.95) In France, since the Prohibition Act for banning branded cigarette packaging came into effect in January 2017, tobacco products have been sold in plain packs covered with daunting pictures to illustrate health damages of various kinds and warnings against potential smoking effects. At first consumers were confused, and could not find familiar marks of cigarettes on the shelves among plainly packed tobacco products with terrifying pictures on them. However, this fact did not discourage regular consumers from buying tobacco, and soon they got accustomed to the new design and easily recognized their favourite brands. Tobacco companies have not recorded any decrease in sales after plain packaging launch. As France’s Customs Administration that regulates tobacco sales all over the country informs the volume of tobacco products shipping has not declined since January 2017. Instead, it has shown a 1.4% rise against the same period of 2016 (Syaglova, 2017, p. 96).

Restrictions imposed on tobacco branding have aroused fears among entrepreneurs that this measure might negatively affect their profits and the cost of the selling points as well as increase the quantity of counterfeit tobacco goods. Tobacco counterfeiters have gained a valuable advantage over legal manufacturers through a branded pack at a lower price. (Syaglova, 2016, p. 2187). As a result, the average level of the realized demand on the price scale significantly decreased in its absolute value. Smokers began to buy goods with lower retail prices, which means that a price target set earlier by the state in the direction of growth has become a natural fall, opening access to tobacco products for consumers with low incomes, which is reflected both in the growth of the number of smokers due to the emergence of segments of the consumer audience, and in the growth of consumption. Both phenomena are negative from the point of view of protecting and supporting the health of the nation and in flagrant contradiction with the goals of the government program. (Syaglova, 2016, p. 2189).

3. **PLAIN PACKAGING IN PRACTICE – AN INSIGHT FROM RUSSIAN ECONOMIC REALITY**

In Russian Federation, plain packaging of tobacco products is not required legally, but there are other measures and restrictions stipulated by the relevant legislation which requires display of warning messages and other elements on unit packaging, written in Russian - the principal language of the
Technical Regulations on tobacco products (TR TS 035/2014) came into force on May 15, 2016, adopted on the basis of the Decision of the Council of the Eurasian Economic Commission № 107 of 12.11.2014, which has stricter rules for packaging of tobacco products. In accordance with the new requirements, illustrations showing the effects of tobacco use for the vital organs of people will be depicted on both sides of the pack. These images must occupy at least 50% of the side space of the pack. In addition, the pack must not display the words: soft, light, etc., facilitating the introduction of customer confusion about the consequences of smoking. These new rules will be mandatory for application from November 15, 2017.

The Ministry of Healthcare of the Russian Federation initiates the debranding of tobacco production through unified or standardized packaging which can be regarded as a part of continuous anti-tobacco concept. The initiative is currently undergoing an intersectoral approval, and the officials are convinced that standardized packaging excepted by all market-players will cause a considerable decrease in smoking-appeal as one of the major stimuli of tobacco sales and consumption is attractive cigarette packaging which can be considered as an element of advertising. Packaging and product attributes are widely employed in diverse ways to attract consumers’ attention by their logos, colours, fonts, images, shapes and materials on cigarettes or packs or/and other tobacco products.

The Federal Anti-Monopoly Service of the Russian Federation has voiced objections to the proposed tobacco products debranding concept for it being an excessive measure to hamper trade. In accordance to the opinion expressed by the FAS officials, a standardized tobacco pack will not only affect negatively the turnover of tobacco products but might facilitate manufacturing and distributing counterfeit tobacco production for unscrupulous entrepreneurs. Besides, a standardized (unified) pack will considerably reduce the distinction between genuine and fake products as the unique features and design peculiarities of legally and factory-manufactured and officially supplied items might be eliminated. There is an ongoing discussion about the need for no brand packaging of tobacco products and alcoholic beverages. Recently, an international summit “Retail Business Russia 2016” was organized in Moscow, and leading subject experts from different countries of the world on the subject discussed this topic, emphasising that the impersonal (no brand) packaging of tobacco products has not brought the desired social effect observed through the reduction of the number of smokers. Various manufacturers look similar, and therefore, smoothing of price and quality differentiation occurs, because, in the minds of consumers the packages are becoming identical and, therefore, the need to pay a higher price for a no-brand package disappeared.

As stated by the General Director of JTI Russia, Dean Gilfillan, “the only proven effect of the introduction of non branded packaging of tobacco products was the prioritization of price over quality (Syaglova, 2016, p. 94).
Based on the findings of the VCIOM sociological survey among 1500 Russian smokers, it has been revealed that more than half of the respondents (53%) said that branded cigarette packaging allows to distinguish a quality product from a fake, and about 2/3 (65%) of respondents expressed their concerns that no brand cigarette packs will lead to an increase of counterfeited goods. In the same survey the majority of respondents expressed their confidence that no brand packaging will lead to lower prices and increase the level of affordability for customers. In the end, 2/3 of respondents (66%) are sure that “no brand packaging” will not reduce the demand for tobacco products. Currently, more than 80% (81%) of smokers choose tobacco relying on the brand name. Only a small share of Russian smokers (9%) focus on price (Syaglova, 2017, p. 95).

Essential aspect of realizing inner businesses for entrepreneurship is recognition and identification of tobacco products when they are accepted, sorted and labeled. But vendors managed to easily overcome this problem by attaching tags of different corporate colours to each tobacco brand to simplify the search for a certain preferable tobacco mark (Syaglova, 2016, p. 92).

4. CONCLUSIONS

Plain packaging measures are among relatively new measures undertaken by governments in order to reduce the consumption of potentially harmful good and/or services, due to the negative implications on consumers health and/or quality of life. The standpoint of state is very clear, the intention is to protect the citizens, and to reduce their exposure on aggressive marketing campaigns related to category products, and even more – the strong brands, that lead to irrational purchasing decisions based on non-reliable data, that implies further health damages and endanger the public health.

It is very important that this concept has been initiated in countries that pay specific attention to the qality of life of their citizens, and also consumer welfare. The idea is to inhibit businesses to conduct unethical advertising, and therefore to use the power of brand equity to lead the consumer into purchasing harmful for their physical and mental health. The perspectives of businesses are completely opposite, but it is an ongoing trend from the global environment that must be seriously taken in consideration in the future. The pressure of consumerism organizations leads to adjustments of regulations and legislation in favor of consumers. Businesses that are affected must reshape their strategies due to the strategic implication of this issue. The “non branding” concept is a new interdisciplinary paradigm that is going to take significant part in future literature and practice.

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MICROECONOMICS
THE ADVENT OF INDUSTRY 4.0
IN MANUFACTURING INDUSTRY:
LITERATURE REVIEW AND GROWTH OPPORTUNITIES

Abstract

Nowadays, the value creation process is based on management of a large amount of data, the Big Data, which are able to connect businesses and customers from all over the world (Xie et al., 2016). Considering the managerial and industrial points of view, Industry 4.0 is a new economic model for the industrial world (Peressotti, 2016), based on the evolution of production paradigm, technological change and process logic adoption: companies should change their business models, invest in staff training, adopting new managerial tools. As a result, the change of the market (from standardized to diversified) with the production of customized products. Machines and robots are able to communicate each other, to take decisions and to self-update. The production lines are automated: control and maintenance tasks can be performed remotely. As a consequence, the creation of the agile value chain: it allows you to monitor large amounts of data in real time, to track status and location of goods, to control the production process distantly. To study the level of adoption of 4.0 industrialization plans, two global indicators have been analyzed: they identify the placement of the largest industrial powers as
a result of their industrialization policies adoption. Since the literature review shows few academic contributions and the subject is studied from engineering, computer and industrial design points of view, the objective of the work is to provide a theoretical contribution to managerial and industrial studies: the adoption of innovation in economic policy represents an opportunity to improve the country identity and the competitiveness level. So it is essential to encourage companies to adopt innovative tools, making the production automated. The methodology used is the content analysis technique: literature analysis, reports, conference proceedings, publications and websites are consulted. The originality of the work is to investigate a topic developed recently in Italy.

**Keywords:** Industry 4.0, smart factory, supply chain

1. **INTRODUCTION**

The globalization era, the programming language development, the new product and process technologies diffusion, the network complexity, the objectives of energy saving, waste and inefficiencies reductions, the requests of customized products and the variability in customer’s demand, have been determined the need of change in manufacturing industry.

The manufacturing revolution has begun in 2011, when the German government promoted the Industry 4.0 initiative, in cooperation with industrial and scientific organization. The promotion of the industrial change and the acquisition of a leadership position in manufacturing sector in the world, were the main objectives of the country (Bartodziej, 2017). At the same time, USA developed the Advanced Manufactured Partnership, a re-industrialization plan, aimed at innovating manufacturing through the adoption of intelligent production systems and improving the occupational level of the country. In 2011, the United States launched the “Advanced Manufacturing Partnership” plan, in order to innovate the manufacturing system of the country, increasing productivity and reducing costs. With a greater delay, in 2015, France launched the “Alliance for the Future” program, to implement the digitization process for support innovation, and in 2016, Italy, approved the “Industry 4.0” plan (http://www.economyup.it).

The originality of the work is to investigate a topic emerged recently in Italy (December 2016). In fact, the literature review shows a great number of academic contributions from engineering, computer and industrial design points of view and few contributions in economic and managerial fields. In particular, the studies makes reference to the implications of big data on consumer behaviour, the relationship between big data and business models (Rialti et al., 2016), the relation between ICT and economic performance, the digitalization process through the usage of 3D printers (Berman, 2012; Cautela et al., 2014; Pisano et al., 2014). For this reason the goal of the present work is providing a theoretical contribution to managerial and organizational studies, trying to fill this gap.
The application of Industry 4.0 plans and the adoption of ad hoc regulations in individual countries, suggest that companies are really working to apply digital policies to their production processes. The research questions of the study are the following: what are the organizational changes of innovative industrial policies adoption? Is it possible to measure whether the countries have been really adopting 4.0 projects? To solve the questions, the methodology used is the content analysis technique, thanks to which it is possible to put together different kinds of managerial and industrial information through the analysis of different contributions: national and international literature, documents, reports, conference proceedings and internet sites. Consulting publications of Deloitte are used to study the level of adoption of 4.0 industrialization plans by countries: the Global Attractiveness Index and the Global Manufacturing Competitiveness Index. The two global indicators allow you to identify the placement of the largest industrial powers as a result of their industrialization policies adoption.

2. INDUSTRY 4.0: THE POSSIBLE CHANGES WITH THE FOURTH INDUSTRIAL REVOLUTION

The interaction, the interdependence and the timely exchange of information, impose for businesses the adoption of innovative systems to meet the complex needs of customers (Aquilani et al., 2016). Today’s consumers have the opportunity to choose from a multitude of products and services, but they seem to be always unfulfilled. For this reason, to create value, to stay on the market, to retain or increase customers, it is therefore necessary to create personalized products (Prahalad, 2004). With reference to the present period, the “digital transformation” ones, the creation of value is possible through the management of large amounts of data, the Big Data, able to interconnect businesses and customers from all over the world. The development of activities with cooperation view and the use of a large amount of data are the key drivers of the actual continuous change (Xie et al., 2016).

The management of large amounts of data, the use of digital technologies to connect the whole value chain, the adoption of a digitization strategy for manufacturing and logistics, the development of cyber-physical systems that allow the collection of a large amounts of data, putting in communication each other machines through the use of the Internet of Things (National Academy of Science and Engineering, 2015) are the most important characteristic of this revolution. The network is the means by which occurs the communication between physical reality and virtual reality: machines and products communicate each other and machines know what is necessary to produce (Cappellin et al., 2017).

The Industry 4.0 program is based on the following components:

1) Intelligent factory, in which all resources exchange information in an automatic way and the production processes are autonomous and independent;

2) business activity, based on the integration of communication systems between suppliers, customers, manufacturers, in order to exchange data in real
time and reduce phenomena such as pollution, emissions, raw materials used;

3) intelligent products, that are able to transmit information thanks to integrated sensors and processors;

4) customers, which may require products with any function and modify their order at any time of the production process. Moreover, smart products provide a guide and support to customer, during their use (Qin et al., 2016).

The Industry 4.0 program is “a new economic model for the industrial world” (Peressotti, 2016, 44), based on the evolution of the production paradigm, through the technological change and the adoption of processes logics. Many scholars define this type of change as the fourth industrial revolution.

From the first industrial revolution, in the eighteenth century, with the introduction of the mechanical loom and the use of steam energy, it is passed to the second industrial revolution, in the twentieth century, with the mass production and the assembly line. The third industrial revolution in the 70s, has conducted to the spread of computers, electronics and ICT technologies, making the production processes automated. Finally, the fourth revolution, which is the current one, provides the connection between physical and digital systems, with the use of intelligent machines, which are able to communicate each other and with people (http://www.sviluppoeconomico.gov.it).

The interaction between man and machines leads to the creation of innovative products: an example could be represented by cars which are able to drive themselves, or robots and drones, or the intelligent systems used in agriculture (Cappellin et al., 2017).

![Figure 1 Industry 4.0: from first to fourth industrial revolution](https://www.i-scoop.eu/industry-4-0/)

*Source: https://www.i-scoop.eu/industry-4-0/*
2.1. Organizational perspective: the new concept of supply chain

According to a study conducted by the American firm, the Boston Consulting Group, the enabling technologies of Industry 4.0 are the follows:

− Advanced Manufacturing Solutions, such as collaborative, autonomous and programmable robot, which are able to interact each other and with people;
− Augmented Reality, which is a set of tools that allow you to add information to those really feel;
− Additive Manufacturing, which refers to the creating objects through additive production processes, mainly through 3D printing. Through various basic technologies that differ mainly due to the ability to employ different materials, additive manufacturing allows companies to produce prototypes and finished products directly on the market, or produce individual components that can also value products in terms of design;
− Simulations, which are necessary to optimize products and processes, minimizing the number of errors;
− Vertical and Horizontal Integration of information throughout the entire value chain, from supplier to end-consumer;
− Cybersecurity, which represents the need to protect the computer systems, ensuring a network security;
− Big Data, which represents the collection and analysis of large amounts of data to improve products and production processes;
− The Cloud, which represent the need to share large amounts of data or IT resources, available by the Internet and accessible at all times;
− The Industrial Internet of Things, which represents the set of technologies and sensors that enable communication between artificial world and people, including products and production processes (BCG, 2015; Rüßmann et al., 2015).
These kinds of technology are not already in use, such as the 3D printers, the RFID technologies and the augmented reality. The actual change makes reference to the ability to create a new production model, realizing a new relationship between customers and suppliers. The world is becoming more “smart”: the advent of the smart factory represents a production solution that makes the process flexible, dynamic, agile and adaptive, thanks to automation, leading optimization production and waste reduction (Radziwon et al., 2014).

In the smart factory, one of the most important factor is the communication between machines and robots, which are able to make decisions independently, to self-update, to self-learning and self-adapting to internal and external changes (National Academy of Science and Engineering, 2013; Rüßmann et al., 2015). As a consequence, the production process is optimized and the production lines are automated, bringing the reduction of errors, wastes, costs, time-to-market, improving the total quality (Oesterreich et al., 2016).

In this manner, the control activity and the maintenance task can be performed remotely (Lee et al., 2014). As a result, the creation of an agile and intelligent value chain (Schumacher et al., 2016). Traditionally, the value creation has been considered from a financial point of view.

Today, the value creation is determined by intangible assets such as process improvement, innovation, knowledge and human capital investments (Tonelli et al., 2016). The fulfillment of an integrated supply chain allows you to monitor large amounts of data in real time, to track the status and location
of goods and to remotely control the entire production process. In this way, it is possible to ensure the products traceability, managing remotely the assets, thanks to the introduction of new design systems, to the augmented reality, the 3D modelling systems, and the use of new artificial intelligence systems for programming activities (Brettel et al., 2014).

In addition, the use of automation involves the need of competent and specialized personnel: planning and problem solving activities, to prevent failures and anomalies in the production process are preferred to technical and manual tasks. The characteristics of the new worker are related to the development of digital skills, creativity, language skills, multitasking, problem solving, decision making. It is necessary to get stronger the education system, implementing the “learning by doing” approach, realizing a cultural change.

The prospect of collaboration and cooperation is another distinctive feature, thanks to which it is possible to create a dynamic organization (Radziwon et al., 2014): the horizontal integration, to facilitate collaboration between companies; the vertical integration, to facilitate relationships within the factory subsystems; the value chain integration, to support design, planning and product development (Wang et al., 2016).

As a consequence, the transformation of the entire value chain, from design to post-sales activities, with significant impacts on profitability and investment efficiency. According to preliminary studies (including the Roland Berger ones), the introduction of Industry 4.0 models involve the profitability growth, with a consequent reduction of invested capital (Peressotti, 2016):

\[
\text{ROCE} = \text{profitability} \times \text{IC}
\]

The profitability development is due to the high level of personalized products, the increasing in flexibility, the reduction in labour costs and the increase in automation. The invested capital reduction, however, comes from the more flexible asset, the reduction of waiting times and stop machines, the reduction of waste and more sliding flows (Blanchet et al., 2016). A complex, advanced and automated system, has different advantages, such as time and cost reduction, a better management of space, the complete customer satisfaction, the smart production; but it has also a disadvantage, connected to the high cyber attacks risks, with the consequent loss of data or production process interruption. For this reason, it is necessary to raise the security level, ensuring the reliability of data, avoiding their dispersion.

2.2. National economy perspective: the Global Attractiveness Index

With the aim of enhancing the competitiveness and productivity levels of our country in an international perspective, it has recently launched the project “The European House Ambrosetti”, realized in collaboration with ABB Italy, the Italian leader in energy technologies and automation, Toyota Material Handling Europe and Unilever. The project includes the development of a special attractiveness indicator, the Global Attractiveness Index (http://www.tecnoedizioni.com), to evaluate the
attractiveness level of our country. This indicator is calculated by considering
different aspects: the degree of innovation, efficiency and assets allocation (http://
www.industriaitaliana.it).

Italy ranks fourteenth than other 143 countries. The goal of the project is
to improve Italy’s strategic positioning and the degree of innovation, stimulating
companies to invest in high digitization projects and strengthening the training
system. In this context, it is significant the adoption of IoT and Industry 4.0 strategies
to support the level of competitiveness of companies in a worldwide perspective
(http://www.internet4things.it).

The Italian companies, known all over the world for the quality of the
manufacturing sector (Italy has about 400,000 manufacturing enterprises) must
necessarily increase the level of innovation to ensure sustainable and long-term
growth. The implementation of technology solutions and the adoption of new
production models, allow the competitiveness and the image of Italian companies
improvements in the world, attracting new investments and strengthen the growth
and wealth processes.

2.3. Industry perspective: the Global Manufacturing Competitiveness
Index

The competitiveness and attractiveness of a country depends on its
industrial level: to keep up with the big international companies, it is necessary
to implement specific digital integration initiatives and support the industrial
automation (The European House-Ambrosetti, 2016). Considering other global
indicators, Italy get a much lower score than other countries. An example is
represented by the Global Manufacturing Competitiveness Index, which is an
indicator calculated by the consulting firm, Deloitte Group, in cooperation with U.S.
Council on Competitiveness.

The studies conducted, makes reference to the 2010, 2013 and 2016 years,
in order to assess how the manufacturing sector contributes to the growth process in
each country. According to Deloitte, in the manufacturing sector the competitiveness
drivers are identified in three elements:

− the training activities, to have a high qualified resources for realizing high
  productivity levels;
− the digital innovation, to ensure high levels of competitiveness;
− the definition of rules and regulations, to protect the technology transfer
  and intellectual property, as well as to establish incentives and subsidies in
  support high-tech investments (https://www.deloitte.com).

From the ranking below, it is possible to see how Germany and the United
States achieve a score improvement through the implementation of Industry 4.0
policies (which adoption takes place in 2011 in both countries), unlike France and
Italy which have a much lower positions, having not yet implemented digitization
programs. In 2010 France holds the twenty-third position, while Italy the twenty-
first; in 2013 France holds the twenty-fifth and Italy the thirty-second place while in 2016, France the twenty-first and Italy the twenty-eighth place.

Table 1: Global Manufacturing Competitiveness Index for the first ten countries

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<th>Rank</th>
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<td>USA</td>
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<td>USA</td>
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<td>India</td>
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Source: our elaboration.

The variables used for the Global Attractiveness Index and the Global Manufacturing Competitiveness Index calculation (such as the degree of innovation of a country), lead to deduce how the industrialization policies contribute to determine both the competitiveness of the manufacturing sector and attractiveness of a country.

It is possible to come to this conclusion, for example, looking for the Germany position, which in 2010 obtained a performance for the 48%, while following the implementation of Industry 4.0, (introduced in 2011) it obtained an indicator of the 94%, in 2016. It is reasonable that countries with high score, could adopt behaviours conform to digitization plans.

3. CONCLUSIONS

The work provides a starting point to manage better the transition from the old to the new paradigm: the adoption of innovation policies is essential to obtain an improvement in manufacturing performance. The new paradigm is characterized by the ability to connect objects, guaranteeing control and traceability through sensors, applied directly to machines.

Machine linkage, robots replacing man, availability of large amounts of data, flexibility in production and customization of products, optimization of production through automatic control operations are the most important features of the phenomenon. The most disruptive technological effects is connected to the possibility to realize customized products, by overcoming the traditional constraints of the standardized assembly line and mass production.

Companies must change their business models, invest in staff training, improve internal processes, invest in management tools and activities. As a result,
the change of the market, from standardized to diversified (Case & Massarotto, 2016): as a consequence the realization of customized products, whose value added is represented by the intelligence of products and services and the ability to create relationships throughout the entire value chain, in order to exchange knowledge and information (Carrus, 2014).

This work faces an issue which is widespread in our country, in Europe and generally in the world; it is provided a conceptual input, which is the result of a literature review: the absence of empirical analysis could be considered the main limit of the work. This study contributes to improve the knowledge of phenomenon and it could be a guide for those companies who are adopting new business models for implementing an innovative and competitive environment.

Disclosure of these topics represents a growth opportunity not only for the individual firm, which can create shared value through the digitization of production, but for the entire Country, which may attract more investment and strengthen the brand of Made in Italy all over the world.

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INDUSTRY 4.0 – AN OPPORTUNITY TO REALIZE SUSTAINABLE MANUFACTURING AND ITS POTENTIAL FOR A CIRCULAR ECONOMY

Preliminary communication  
UDK: 004:658.5  
JEL classification: Q01, L23, 014, O33

Abstract

With an increasing growth of human population, rising GDP levels and more affluent lifestyles, the human race is consuming more and more which leads to a continuously growing demand for renewable and non-renewable resources. Therefore the issue of resource scarcity is emerging, because it is questionable whether economic growth can be sustained in a world with finite natural resources. The main purpose of this work is to analyze the potential of Industry 4.0 applications to realize a more sustainable manufacturing and to create a circular economy (CE). Even if the economy nowadays is still locked into a system favoring the linear model of production and consumption, tighter environmental standards, resource scarcity and changing consumer expectations will force organizations to find alternatives. To do so, new technologies can be used to trace materials through the supply chain and to track product status during its life cycle. This development will create opportunities to accelerate the transition towards the model of a CE. Case examples show that companies are starting to capitalize on the potential of emerging technologies to rearrange production, services, business models or whole organizations in a more sustainable way. Main conclusions of this research are that there is a high potential of Industry 4.0 to ensure more sustainable manufacturing methods or a CE. This is shown by analyzing the value drivers of Industry 4.0, the potential of rearranging value chains and emerging business models. Overall,
smart products and Industry 4.0 technologies could generate significant economic, environmental and social benefits and are able to contribute to strive towards a CE.

**Keywords: Industry 4.0, Circular Economy, Sustainability**

1. **INTRODUCTION**

With an increasing growth of human population, rising GDP levels and an improvement of lifestyles, the human race is consuming more and more. Consequently the demand for renewable and non-renewable resources is continuously growing (Preston & Herron 2016). This population growth and an increase of the economic well-being of a good portion of the world have been fed by unprecedented natural resource consumption and environmental impacts. Consequently the issue of resource scarcity is emerging, because it is questionable whether this economic growth can be sustained in a world with finite natural resources (Krautkraemer 2005). The diminishing amount of natural resources can be a problem especially for manufacturing companies with global supply chains. These companies may have to cope for example with increasing prices for resources and supply uncertainty (Preston & Herron 2016). Facing these problems, humans have been quite creative in finding solutions to the issue of scarce natural resources. The maybe most important approach is the development of new technologies that economize on scarce resources or that allow us to use resources that were previously uneconomical (Krautkraemer 2005). These technologies enable us to realize the productivity growth that we need to satisfy the ever-growing consumption, while not actually increasing the demand for resources significantly (Heck & Rogers 2014).

Nowadays the concept of Industry 4.0 is omnipresent. Industry 4.0 is strongly connected to megatrends like digitization and connectivity (Horx 2015; Heuer 2015). Within Industry 4.0 production is connected to the latest communication and information technology (Bundesministerium für Wirtschaft und Energie 2016). Beyond all competitive advantages through for example an improvement of efficiency and flexibility, also an efficient use of resources should be considered. At this juncture production processes within Industry 4.0 should be seen as holistic balanced circuits, which guide and shape the new industrial production (Arbeitskreis Industrie 4.0 2012, p. 30-31). Environmental pollution and shrinking resources have incrementally increased pressure on industrial businesses. These circumstances confront manufacturing industries to cope with the pressure of environmental regulations set by governments, challenges of resource price volatility, because of scarce resources, and risks in resource supply. A circular economy could be the solution to harmonize ambitions for economic growth and environmental protection, where the circular economy is understood as realization of a closed loop material flow in the whole economic system (Lieder & Rashid 2015, p. 36-51). Here the development towards Industry 4.0 provides immense opportunities for the realization of sustainable, eco-friendly and resource saving manufacturing (Stock & Seliger 2016, p. 536-541). The
The main purpose of this work is to analyze the potential of Industry 4.0 applications to realize a more sustainable manufacturing and the opportunities provided by the fourth industrial revolution to create a circular economy. Therefore the questions should be answered: Which potential of sustainability does Industry 4.0 have to ensure a cleaner production? And is even the implementation of a circular economy possible or facilitated by using the technologies and changes which emerge through the fourth industrial revolution?

1.1. Industry 4.0

The first time the notion “Industry 4.0” (derived from the German term “Industrie 4.0”) was mentioned in public, was at the “Hannover trade fair” in 2011, Germany (Kagermann, Lukas, & Wahlster 2016). The following initiative set by the Federal Ministry of Education and Research, Germany (BMBF, Bundesministerium für Bildung und Forschung), also called “Industry 4.0”, intends to encourage the German manufacturing industry to prepare for the future of production (Bundesministerium für Bildung und Forschung 2016). In the meantime the term Industry 4.0 is also widely used across Europe. Consequently the term Industry 4.0 describes nowadays in general the digital transformation of the manufacturing industry, which is accelerated by exponentially growing technologies, like for example intelligent robots, autonomous drones, sensors and 3D-printing (Bundesministerium für Bildung und Forschung 2016). Other terms appearing along with Industry 4.0 are the “digital transformation”, the “Internet of Things” or the “Industrial Internet (of Things)”. These terms are also applied interchangeably with the notion Industry 4.0 and the last two are used more commonly in the United States and the English-speaking world (Deloitte 2015, p. 3). Furthermore other companies like for example Cisco are using the term “Internet of Everything” (De Bernardini 2015). All these notions are referring to similar technologies and applications, but can have different origins and meanings. Whereas Industry 4.0 is focused specifically on the manufacturing industry, terms like the Internet of Things, the Digital Revolution and the Internet of Everything are more focused on enabling and accelerating the adoption of internet-connected technologies across industries, both manufacturing and non-manufacturing. Nevertheless, what all these terms and concepts have in common is the recognition that traditional manufacturing methods are run through a digital transformation (Deloitte 2015).

1.2. Definitions of Important Elements of Industry 4.0

Referred to the vision of Industry 4.0 it is still based on automation technology (e.g. robots), but these technologies are now connected via sensors and other control elements to link the real and the virtual world forming cyber-physical systems. These cyber-physical systems are then able to cross-link all productive entities to each other through the internet. This communication of physical objects without any human interaction is known as the Internet of Things. A huge amount of data arising out of that interaction (big data), could be stored in clouds and converted into smart data in order to filter the information
really needed and to evaluate the generated data in a proper way (see Figure 1). If we take all these technologies together we will be able to form the smart, digital factories of the future.

A cyber-physical system (CPS) describes the technological basis of IT in combination with the physical world, meaning they connect information technology with mechanical and electronic elements. These systems of collaborating computational entities are therefore in a steady intensive connection with the surrounding physical world and its ongoing processes (Monostori 2014, p. 9-13). Therefore open and cross-linked systems arise, which are able to collect data within various situations of the physical world. In addition to that they interpret data and make them available. These systems can react via actuator systems to processes within the physical world and therefore they can influence the behavior of equipment, things and services (Geisberger & Broy 2012, p. 9). Such CPSs can also be used within manufacturing systems, where the intelligent cross-linking is for example realized by embedded sensors, processors, software and connectivity in products, coupled with a product cloud in which product data is stored and analyzed. These data can be used to improve product functionality and performance (Stock & Seliger 2016, p. 536-541).

The Internet of Things is described in various ways by companies and organizations. But most commonly it is described as an “ecosystem of technologies monitoring the status of physical objects, capturing meaningful data, and communicating that information through networks to software applications”. The recurring topics in all definitions of the Internet of Things include smart objects, machine to machine communication (M2M) and radio-frequency-technologies (Thrasher 2014). Through the Internet of Things it is possible to connect everyday objects to remotely determine their state via information systems, which collect up-to-date information on these physical objects and processes continuously. Equipped with own sensor- and actuator-
technology these smart real objects are able to integrate each other to form complex, autonomous systems. Some producers are already talking about the Internet of Everything (IoE), which is embedding humans, processes, things and data into an all-embracing network (Hackmann 2013). Through Industry 4.0 applications there is a change of the whole industrial value chain through an increasing digitalization and networking. The huge and continuously produced amount of data through the ever growing use of sensors, networked machines in CPS and the development towards an industry with smart factories is called big data. These sensor-generated, networked data from a wide variety of sources are unstructured. To make use of these data, for example to generate forecasts and enable companies to take fact-based decisions, it is important to consolidate and evaluate these data in an intelligent way (Sauter et al. 2015, p. 5). Consequently companies must face the challenge to develop smart predictive informatics tools to manage big data (Monostori 2014, p. 9-13; Lee, Kao, & Yang 2014, p. 3-8). If this challenge will succeed then smart factories producing smart products with the aid of CPS and the IoT, collecting smart data at each step of production, will be enabled to self-organize each required manufacturing step throughout the whole production process or even the whole value chain.

1.3. Smart Manufacturing in the Smart Factory

According to the vision of Industry 4.0 the future of production could look like the following: There will be communication via software and networks over the whole vertical value chain (product development, production, services). Smart machines will exchange information and instructions in real-time with smart products as well as with individuals across the whole value chain and the overall product life cycle (PLC). Through sensors and control elements it will be possible to link plants, fleets, networks and human beings. Machines itself will continually share information about current stock levels, problems, faults, and changes in orders or demand levels. Furthermore processes and deadlines are coordinated to raise efficiency and throughput times are optimized. Consequently an increase in quality throughout the whole PLC will take place. In total this will create a production system with autonomous control and optimization (Siemens 2014; Deloitte 2015, p. 4).

Until now the smart factory is a great revelation of future developments in manufacturing facilities. Nevertheless, technologies need to mature and the concept still needs to progress before reaching its full potential and practical application in an industrial production set up (Radziwon et al. 2014).

2. IMPACTS OF INDUSTRY 4.0 APPLICATIONS

Industry 4.0 can have many impacts, positive as well as critical ones. When we talk about Industry 4.0 we mainly talk about it in a technical context, but the fourth industrial revolution has also massive impacts on the whole organization and through the application of CPSs technical processes and
business processes fuse. Therefore the topic should be also considered from the business administrative point of view.

In the following section a selection of the various impacts of Industry 4.0 technically and economically speaking are analyzed and defined. These economic benefits also include various value drivers indicated by researchers and strategy consulting firms. When looking at these value drivers and trying to optimize and work with them, there is high potential to accomplish economic improvement within business and manufacturing processes. All these impacts described in the following section will then lead to an analysis how Industry 4.0 technologies can contribute to find sustainable manufacturing solutions or how they can aid to establish a circular economy.

2.1 Economic benefits by using Industry 4.0 applications

McKinsey summarized the main drivers of creating value and enjoying economic benefits within its “Digital Compass”, where they defined eight value drivers. These drivers will create value for companies and customers at each step of value creation across the entire PLC. By using these value drivers, it is possible to describe economic benefits for companies applying Industry 4.0 concepts in more depth. These value drivers will be explained in the following regarding how they impact the performance of companies concerning Industry 4.0 having in mind the objective to maximize value (McKinsey 2015, p. 22-27).

Using resources and optimizing processes: The possibilities to improve processes and the consumption of materials when using the concepts of Industry 4.0 are versatile. It is possible to decrease material costs by less defective goods and optimize processes (in speed or yield) via the use of cyber-physical systems, which allow the observation of processes in real-time. Through the use of these technologies it will be possible to react to events in the physical world in an automatic and fast way. Therefore the improvement of manufacturing processes including the optimization of material consumption will drive value and will make it possible to increase productivity by 3-5 percent (McKinsey 2015, p. 24; see Figure 2).

Utilization of assets: The optimal use of a companies’ machinery park is supported by Industry 4.0 based technologies, which enable for example predictive maintenance. Through the permanent, remote monitoring of machinery conditions it becomes possible to reduce machine downtimes or changeover times by an early detection of possible problems and continuous maintenance. The avoidance and early correction of defects can therefore save costs and drive production throughput, which consequently drives value (McKinsey 2015, p. 24). According to analyses the use of predictive maintenance enables to decrease total machine downtime by 30-50 percent and to increase machine life by 20-40 percent (see Figure 2).

Labor productivity: An increase of the productivity of labor can significantly drive value. The improvement of labor productivity can be realized
by using the new technologies of Industry 4.0, which make it possible e.g. to reduce waiting times between different production steps in manufacturing or by accelerating the R&D process (e.g. through 3D-printing). Furthermore the burden or complexity of tasks can increase the speed of manual production steps executed by workers (McKinsey 2015, p. 25). An example for such assistance within production processes is the German company Festo, where human-robot collaborations work in close proximity to each other (Festo AG & Co. KG 2015).

Management of inventories: A proper management of inventories is very important, because too much inventory leads to great capital costs. By applying Industry 4.0 levers, drivers of excess inventories can be targeted by addressing problems like unreliable demand planning and overproduction. This becomes possible e.g. through real-time supply chain optimization (McKinsey 2015, p. 25). Through technologies like systems which automatically reorder if necessary, costs for inventory holding can be reduced by 20-50 percent (see Figure 2).

Quality improvement: Industry 4.0 applications facilitate the improvement of product and process quality by using real-time problem solving, advanced process control or real-time error corrections to decrease unstable manufacturing processes, rework and consequently extra costs (McKinsey 2015, p. 26). By using these approaches a saving of costs related to suboptimal quality of about 10-20 percent could be achieved (see Figure 2). For example Siemens was able to decrease the defect rate to a minimum through the use of advanced technologies emerging with the fourth industrial revolution (Siemens 2014a).

Figure 2 Indicative quantification of the eight value drivers (own representation according to McKinsey 2015, p. 25).

Match of supply and demand: To prevent from waste by unnecessary inventory and storage cost, a perfect understanding of customer demand in terms
of quantity and product features lead to a much better predictability through new possibilities like e.g. crowd forecasting based on advanced analytics (McKinsey 2015, p. 26). The use of such technologies can increase the accuracy of demand forecasting to more than 85 percent (see Figure 2).

Reducing time to market: Being the first supplier on the market with a new product can create value in terms of increased revenues and less competition. New technologies emerging with Industry 4.0 enabling faster and cheaper R&D processes, e.g. concurrent engineering or rapid prototyping by using 3D-printing can significantly reduce the time to market (McKinsey 2015, p. 26). The use of such technologies can reduce the time to market by 30-50 percent (see Figure 2).

Service and aftersales: Innovative services lead to new possibilities of repairing products and to the chance to keep them longer operational. Product manufacturing can be more cost effective, when machines get a longer operational time. This is possible e.g. through remote maintenance or virtually guided self-service. In this case it is possible to carry out error diagnosis and even repair without the necessity of a technician visiting the site (McKinsey 2015, p. 27). In average maintenance costs could be reduced by about 10-40 percent through the use of remote and predictive maintenance (see Figure 2).

All eight value drivers are showing high improvement potential, enabled by Industry 4.0, within already existing production systems. To activate these value drivers and really exploit the potential they offer, it is necessary to prepare the company to take part in the fourth industrial revolution.

2.2. Transformation of Value Chains

Industry 4.0 is characterized by an increasing digitization and interconnection of products, business models and value chains. A successful implementation of digital manufacturing solutions as described (see 1.3), entails a fluid digital communication across the whole value chain – this continuous flow of data is also called “digital thread” (Nanry et al. 2015). Customers will be at the center of the changes to value chains, products and services and everything will be increasingly customized (Geissbauer et al. 2016, p. 8).

Generally the increasing digitization simplifies the outsourcing of business processes along the value chains. Therefore there won’t be classical value chains with clearly defined boundaries between the company’s internal functions and external areas within Industry 4.0. Shorter PLCs, smaller lot sizes and an intensified individualization of products require a fast and efficient cooperation within and between all involved functions and corporations. Through Industry 4.0 applications and their ubiquitous exchange of information, internal and external boundaries will merge and classical borders of individual enterprises will be shifted (Wischmann et al. 2015, p. 15). Industry 4.0 digitizes and integrates processes vertically across the whole organization through all functions, from product development and purchasing through manufacturing,
logistics and aftersales. In addition to that horizontal integration stretches beyond the internal operations. Here also suppliers, customers and all key value chain partners are integrated (Naray et al. 2015). A third dimension is the end-to-end engineering across the whole PLC (Stock & Seliger 2016, p. 536-541; Acatech 2013, p. 6; Deloitte 2015, p. 6).

In order to deliver the goals of Industry 4.0 and gain improved competitiveness, the features of all three dimensions should be implemented.

![Figure 3 Horizontal value chain](own representation according to Koch et al. 2014, p. 17): Horizontal integration across the value creation networks/supply networks means that also external functions like suppliers and customers are part of the value chain.

The horizontal integration characterizes the cross-company and company-internal (across company departments) smart networking and digitalization throughout the value chain of a PLC and between value chains of neighboring PLCs (Stock & Seliger 2016, p. 536-541). The digitalization of the horizontal value chain integrates and optimizes the flow of information and flow of goods from the customer over the whole corporation to the point of the supplier and vice versa (see Figure 3). Within this approach all company-internal areas (e.g. purchasing, production, logistics) will be connected and regulated foresightful together with all external partners being part of value creation (Koch et al. 2014, p. 16). Within Industry 4.0 horizontal integration will enable the smart factory to adapt constantly to new circumstances, e.g. to the order volume or the availability of materials. Therefore an automatic optimization of production processes becomes possible through the integration of suppliers and customers into the value chain (Lichtblau et al. 2014, p. 11).

The vertical integration specifies the intelligent cross-linking and digitalization within the different hierarchical levels of a value chain. This will enable digital order processes and customer specific product
development, where an automated transfer of data into an integrated planning and manufacturing system can be assured. Furthermore, the associated value chain activities such as marketing and sales or technology development are integrated (Koch et al. 2014, p. 11; Stock & Seliger 2016, p. 536-541; see Figure 4). Within this vertical integration it becomes possible to have flexible and reconfigurable production structures, which can be adapted to each specific customer order or even to changing market requirements. These features are key enablers for manufacturers to stay competitive within highly volatile markets and it will allow them to reach fast and fault-free production (Stock & Seliger 2016, p. 536-541).

End-to-end engineering across all phases of a PLC describes the intelligent cross-linking and digitalization throughout the whole PLC, from the procurement of raw materials, the use of the product until its end of life (Stock & Seliger 2016, p. 536-541). This integrated engineering along the whole value chain promises high optimization potential. Within such a way of engineering all entities being part of the engineering process will be provided with real-time information. The advantage is that it encompasses both, the manufacturing process and the manufactured product, when engineering the associated manufacturing system at same time as product is engineered (see Figure 5).
2.3. **Emerging Business Models**

“A business model is defined by two things: how the organization creates value for its customers (the customer value proposition) and how it captures that value (how it makes money). Digital transformation changes both.” (Iansiti & Lakhani 2014). That means Industry 4.0 has an effect not only on the product and its production, but Industry 4.0 will also have an effect on the business model, because in the future producers will offer their products in new ways (Messe München GmbH 2015). Through the considerable increase of the digitization of value chains and the integrated use and analytics of data, Industry 4.0 also enables the creation of new markets by reinventing the way things are done. Established business models will become more efficient and customer-oriented due to the increased connectivity and analytical abilities (Koch et al. 2014, p. 4, p. 33). Present business models will change and new, disruptive, digital business models enabling e.g. mass customization will emerge. Similar to the concept of Re-Engineering business models and concepts can be imagined in a radically different way, based on the new possibilities of Industry 4.0.

In Industry 4.0, new evolving business models are highly driven by the use of smart data for offering new services. In this context, selling the functionality and accessibility of products instead of only selling the tangible products will be a leading concept (Stock & Seliger 2016, p. 540).

3. **THE CONCEPT OF A CIRCULAR ECONOMY**

Within the last few years the idea of a circular economy (CE) is getting increasing attention worldwide. The concept is seen as a way to overcome
the current production and consumption model, which is based on continuous growth and increasing resource consumption. A closed-loop design of production patterns within an economic system, like the CE approach, could increase the efficiency of resource use and reduce urban and industrial waste. Consequently a CE could pave the way to achieve a better balance between the three pillars of sustainability: economy, environment and society (Ghisellini et al. 2016). The concept of the circular economy and what we understand by it nowadays is described by the Ellen MacArthur Foundation, an association to accelerate the transition towards a CE, as the following:

“A circular economy is restorative and regenerative by design and aims to keep products, components, and materials at their highest utility and value at all times (…). As envisioned by the originators, a circular economy is a continuous positive development cycle that preserves and enhances natural capital, optimizes resource yields and minimizes system risks by managing finite stocks and renewable flows. It works effectively at every scale.” (Ellen MacArthur Foundation 2015).

Figure 6 Linear versus circular economy (AkzoNobel 2015, p. 216)

By this design, the CE replaces the end of life idea. Through the superior conception of materials, products, systems and business models, the CE enables restoration, a shift towards renewable energy and the elimination of the use of toxic materials and waste production. Consequently CE aims to design out waste at its core, because products are designed and optimized for a cycle of disassembly and reuse. These tight product and component cycles define CE and distinguish it from disposal and recycling. (See also Figure 6)
4. INDUSTRY 4.0 APPLICATIONS AS ENABLER FOR A CIRCULAR ECONOMY

Within the following the potential of Industry 4.0 applications will be analyzed with regard to sustainable manufacturing and the circular economy. It will be assessed how Industry 4.0 elements are able to ease the implementation of CE principles. Furthermore interconnected value chains and emerging business models will be evaluated towards their potential to drive sustainability.

4.1. Potential of Emerging Technologies along Value Drivers

A sustainability-oriented decentralized organization for a CE in a smart factory focuses on efficient allocation of products, materials, energy and water by taking into account dynamic constraints of the CPS, e.g. of smart logistics, smart grid, self-sufficient supply or the customer (Stock & Seliger 2016, p. 540). Such a concept towards holistic resource efficiency in the sense of a CE is seen as one of the essential advantages of Industry 4.0 (Kagermann et al. 2016). In a world of perfect information it is possible to manufacture even more efficiently than automation already enabled. It becomes possible to use fewer resources, while getting the same results as before and production becomes more flexible. Consequently smaller production batches are possible. Such efficiency improvements can be also used for the implementation of a circular economy, even though this might only be the starting point for more radical circular economy innovations in the coming years. Within Industry 4.0 physical production processes and information and communication technology grow more closely together. Embedded systems, sensors, actuators, mobile devices and production facilities are able to communicate with each other via the internet. Through this development production processes get transparent and easily influence able. In addition to economically measurable success factors through the implementation of Industry 4.0 applications, it is important for companies to also consider environmental and social impacts, like the future of work and resource efficiency, to ensure durable competitiveness (Gabriel & Pessl 2016, p. 131). Information is of utmost importance to ensure that businesses all over the world are able to make the right decisions, to eradicate waste and to use resources effectively. Industry 4.0 and its technologies like the IoT can play a key role in providing such valuable information about things like energy use, underutilized assets and material flows (Ellen MacArthur Foundation 2016, p. 9). When technologies were used the right way, Industry 4.0 is supposed to lead to a highly adaptive and thereby resource-efficient and ergonomic production.

Within the following section the potential of Industry 4.0 technologies to manufacture in a more sustainable way and to establish an economy according to CE principles will be exemplary described using the value drivers outlined in chapter 2.1.

Using resources and optimizing processes. Enabled by the IoT and CPSs it is possible to observe processes in real-time. The interconnection of machines,
products and humans and the omni-present information about everything makes it possible to react in a very fast, efficient and fully automated way to every circumstance during production. If everything gets traceable also the consumption of resources gets increasingly transparent within these advanced manufacturing processes. Therefore it will be able to exactly assess the amount of resources needed for each production step. Processes with excess resource consumption can be identified and optimized or eliminated. Through the incorporation of “smart materials”, equipped with sensor- and actuator-technology, these resources can be observed not only during the production process itself, but also throughout the whole life cycle of the product they are incorporated in. The observation of state and location of valuable materials (e.g. rare metals used in electronic parts) by using RFID-technology will reduce waste and will increase the reuse of these scarce resources. This will enable or at least ease to hold technical and biological nutrients within their cycles. The observation of process conditions in real-time holds not only for the consumption of classical input materials. It also makes it possible to trace for example energy and water consumption during each step of production. Furthermore processes can be analyzed in detail according to the time each step of production needs. In addition to optimization of the production time does not only save time, but shorter production processes typically consume less resource like energy. Within Industry 4.0 processes will be able to monitor, to be aware, to predict, to optimize and to configure themselves (Song & Moon 2016, p. 5-6). Consequently processes can be designed more sustainable and ease to establish an economy according to CE principles with the help of Industry 4.0 applications. This improvement of manufacturing processes including the optimization of material consumption will drive value and will make it possible to increase productivity.

Utilization of assets: Within most factories manufacturing equipment is a capital good with a long use phase of up to 20 or more years. Retrofitting of assets enables an easy way of upgrading existing manufacturing equipment with sensor and actuator systems as well as with the related control logics. This is a cost-efficient way to use Industry 4.0 technologies and make assets “intelligent”. Like that retrofitting enables the realization of CPS throughout a value creation module, such as a factory, with already existing manufacturing equipment (Stock & Seliger 2016, p. 540). Through the use of Industry 4.0 technologies knowledge about the assets’ location, condition and availability can be collected. The information about the location and availability of an asset is especially important for businesses that have mobile assets and will enable them to use their assets more effectively. In addition to that it is an important facilitator of sharing models, which contribute to a sustainable use of resources. The collection of data to monitor an asset’s condition will enable users to define thresholds or rules to initiate actions or notifications that allow condition based reactions. This will make e.g. predictive maintenance and replacement of failing components (prior to asset failure) possible and will enable to minimize downtimes (Ellen MacArthur Foundation 2016b, p. 28-31).

Therefore the use of Industry 4.0 technologies enables to extend the use phase and facilitates the application of manufacturing equipment in a new use
phase according to CE principles. Consequently this can essentially contribute to the economic and environmental dimensions of sustainability, meaning intelligent assets are already presenting solutions to many resource challenges. (Stock & Seliger 2016, p. 540)

**Labor productivity:** Within Industry 4.0 humans will still be the organizers of value creation (VDI/VDE & GMA 2014). Nevertheless the needs for skills will change and different competences will be important. Routine jobs will cease to exist and through an accelerating digitization new functions will get more complex and new occupational areas will arise (McKinsey, Stifterverband für die Deutsche Wissenschaft e.V. 2016, p. 7). To cope with the social challenge of Industry 4.0 in a sustainable way the training efficiency of workers can be improved by combining new information and communication technologies (ICT).

**Management of inventories:** Industry 4.0 applications definitely ease the management of inventories. Through real-time data about stock levels it is possible to reduce waiting times, inventory costs and storage space (Song & Moon 2016, p. 16). This hides a lot of potential also with regard to sustainable economic activities, because too much inventory leads not only to great capital costs, but also to unused and excess resources. Additionally, Industry 4.0 technologies can minimize unreliable demand planning and overproduction. An intelligent system, which automatically reorders if the minimum fill level is reached will avoid surplus materials and will lead to a real-time optimization of the supply chain (McKinsey 2015, p. 25). Such reductions of inventory levels lead to decreased energy needs for the proper storage of the inventory as well as less waste created by materials turning old or outdated due to technical progress. Consequently optimal manufacturing component utilization can be achieved by using Industry 4.0 applications, leading to ultimate sustainable benefits (Song & Moon 2016, 16).

**Quality improvement:** Quality improvement of products and processes by using real-time problem solving, advanced process control or real-time error corrections hide also potentials for a more sustainable manufacturing. As described previously, it becomes possible to design manufacturing sequences more resource-efficient regarding to material, water and energy consumption through process optimization. Therefore the consumption of these resources can be minimized through the use of Industry 4.0 technologies. In addition to the optimization of processes, an increased product quality will lead to less rework and less waste during the production process. This will also reduce waste as well as production time. Furthermore products of higher quality will be able to be kept much longer within the operational phase, meaning the PLC and its use phase can be extended. Customers will need new products less frequently.

**Match of supply and demand:** As already mentioned within the sub item “Management of inventories”, Industry 4.0 technologies can minimize unreliable demand planning and overproduction. More accurate demand forecasts as enabled by Industry 4.0 applications lead to reductions in waste, because needed input materials could be projected more accurate (which will

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reduce inventory) and overproduction can be reduced. This will decrease the need for large amounts of raw material within the supply chain and transportation, because only on-demand spare parts are created. Accurate demand forecasts will also ease the implementation of CE principles, because also the reuse and preparation of already used materials can be planned more precise. If companies can be sure to cover actual demand by cycling of already used materials or the reuse and remanufacturing of products, fewer resources will be extracted for the production of entirely new goods. (See Figure 7)

Figure 7 Industry 4.0 is changing traditional manufacturing relationships (modified according to Rüßmann et al. 2015): The potential of emerging technologies to manufacture more sustainable exemplarily outlined using the value drivers described in chapter 2.1.

Reducing time to market: New Industry 4.0 technologies enable faster and cheaper R&D processes. This will be possible through procedures like concurrent engineering or rapid prototyping, also called additive manufacturing, by using 3D-printing. Additive manufacturing has the potential to create geometrically complex parts that require a high degree of customization, using less material and producing less waste. The ability of additive manufacturing to build parts directly from a digital representation makes it an excellent alternative compared to traditional methods. Besides the fact that additive manufacturing produces less waste because parts are stamped or sculpted out of larger pieces of material, no special tooling or fixtures are required. This makes the method largely material efficient when comparing it with traditional processes. Furthermore the material used has less impact over its life cycle, resulting in a lower carbon footprint and less embodied energy (Mani et al. 2014, p. 419-421). In addition to the more sustainable technologies used to realize the reduction of time to market, it also means faster learning if a product or process turns out to be less suitable for a CE. This means that the continuous improvement cycles are accelerated to the benefit of using the latest technology and practices to implement a CE.
Service and aftersales: Through Industry 4.0 new business models will emerge. These models will bring manufacturer or service provider and customer more closely together. There will be models where products or services will be only leased or borrowed instead of being bought. Consequently service and aftersales will get more and more important within these models. This also hides potential for sustainable improvements. On the one hand products provided can be kept longer operational by the support through maintenance services and repairs. On the other hand it will be easier for the provider to get back products after their use phase, because products and parts can be traced by the provider over the whole PLC. Consequently products can be recycled or remanufactured and parts can be reused and kept within a circular economy.

4.2. Other Potentials of Industry 4.0 for a Circular Economy

Interconnected Value Chains: When production systems become even more digital, intelligent and connected, value chains become increasingly integrated and transparent. This enables to extend the product lifecycle management beyond the producers’ boundaries and to cover the actual quality of products also in the use phase. As described in chapter 2.2 all three dimensions, which are the horizontal value chain, the vertical value chain and the end-to-end engineering, will be changing within Industry 4.0. In general Industry 4.0 technologies like RFID enable a greater visibility into the supply chain, because everything becomes traceable. This makes it possible for companies to e.g. efficiently track and manage inventories, consequently reducing unnecessary transportation requirements and fuel usage, which becomes important when thinking about a more sustainable design of value chains (Sundmaeker, Guillemin, Friess, & Woelfflé 2010, p. 56).

Potential of Emerging Business Models: The development of Industry 4.0 technologies can be exploited for the creation of new sustainable business models. Sustainable business models significantly create positive or reduce negative impacts for the environment or society (Bocken, Short, Rana, & Evans 2014, p. 42-56) or they can even fundamentally contribute to solving an environmental or social problem. Additionally, sustainable business models are necessarily characterized by competitiveness on the long-run (Schaltegger & Wagner 2011, p. 222-237). Referring to CE and sustainable manufacturing, new categories of business models as indicated in chapter 2.3 provide opportunities to generate growth in revenues and employment for people without linear increase of physical materials consumed. Improvement in the usage of data, machinery equipment, software and other resources can reduce the need for such limited resources and reduce the ecological footprint of production. Additionally, sustainable business models are necessarily characterized by competitiveness on the long-run (Schaltegger & Wagner 2011, p. 222-237). Referring to CE and sustainable manufacturing, new business models provide opportunities to generate growth in revenues and employment for people without linear increase of physical materials consumed. Improvement in the usage of data, machinery equipment, software and other resources can reduce the need for such limited
resources and reduce the ecological footprint of production. But not only Industry 4.0 presents new business models, also the concept of the circular economy provides innovative changes. Ideas of CE as extending the lifecycles of product and assets and moving away from finite resource use at production stage and then recycling at the end of life, is leading to several business models, which is however beyond the scope of this paper.

5. CONCLUSIONS AND OUTLOOK

The economy nowadays is locked into a system where a lot still favors the linear model of production and consumption. However, this lock-in is getting weaker under the pressure of several disruptive trends. When finding new ways considering these changes, advanced information technology is seen to be able to provide the characteristics and qualities needed. These technologies, which also emerge within the new age of manufacturing (also called Industry 4.0) can be used to trace materials through the supply chain, to identify products and material fractions and to track product status during use. To overcome the difficult environmental, economic and social problems of today and tomorrow, system thinking skills, in conjunction with a comprehensive, integrated understanding of technology and data will be essential. These advances in technology will create ever greater opportunities to accelerate the transition towards the model of a CE.

To answer the research questions asked in the beginning: there is a high potential of Industry 4.0 elements to ensure more sustainable manufacturing methods, which is shown exemplarily when analyzing the value drivers of Industry 4.0 in section 4 and the potential of rearranging value chains. Also emerging business models hold opportunities to reshape organizations in a resource-efficient way. These descriptions also show that even the implementation of a CE will be easier to realize when exploiting the technologies and changes which emerge through the fourth industrial revolution.

Overall, smart products and Industry 4.0 technologies could generate significant economic, environmental and social benefits and therefore are able to contribute to strive towards a CE. It opens the way for businesses to capture the value of untapped waste streams and turn it into wealth. Such an economic system will be able of ushering in a new area of growth and development, which represents a real opportunity to redefine the relationship of the present economy with resources and to shape a future which is socially, environmentally and economically sustainable. This system will be decoupled from resource constraints, where nature is the perfect example of such principles in action.
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OWNERSHIP STRUCTURE AND TOTAL FACTOR PRODUCTIVITY: DIFFERENCES ACROSS INDUSTRIES IN CROATIA

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Abstract

Factors explaining productivity growth include internal and external categories, such as quality of management and labour, product innovation and competition. However, ownership structure is rarely mentioned as a potential factor for impacting productivity growth. On the other hand, it is often assumed that private firms are more productive than state-owned, the argument frequently additionally emphasized in the public discussions in (post)transition economies. Since aggregate data hides developments in individual sectors, it is important to investigate the relationship between ownership and productivity on the industry level. Hence, in this article we investigate trends in productivity related to the ownership structure across industries using data for Croatia both during the boom and recession phase. Results show higher increases in productivity in the observed period in the public, not private, sector and that TFP path at the sectoral level in the state-owned firms is more erratic than in the private segment of the economy.

Keywords: TFP, ownership structure, industries
1. INTRODUCTION

In the literature, factors explaining productivity growth include internal and external categories, such as quality of management and labour, product innovation and competition. However, ownership structure is rarely mentioned as a potential factor of productivity growth. On the other hand, public discussions often assume that private firms are more productive than state-owned, the argument frequently additionally stressed in (post)transition economies. The intensive process of privatization at the beginning of the 1990s relied on this assumption. Since empirical research emphasise that total factor productivity (TFP) growth can lead to long-term GDP per capita growth and since state-owned firms are still important employers in Croatia, it is interesting to reveal to what extent TFP differs in firms with different ownership structure. Furthermore, since aggregate data hides developments in individual sectors, it is important to investigate the relationship between ownership and productivity on the industry level.

Evidence on TFP growth does not offer straightforward conclusions in transition economies. For example, Djankov and Murrell (2002) summarized 23 studies which investigated the impact of increased competition brought by the early phases of transition on firm performance, and did not offer clear conclusion. Bah and Brada (2009) argue that TFP level is lower in transition countries than in advanced economies. This leads to the assumption that transition towards market economy and the subsequent convergence process should be marked up by intensified TFP growth. Such assumptions were seldom confirmed by data evidence. Researchers have offered several explanations for the relatively low TFP growth. Some emphasized the disruption of previous economic connections within the previous economic system (Blanchard and Kremer, 1997), others focused on the privatization problems that may further delay restructuring and the technological catching up process (Estrin et al., 2001).

Previous research on TFP in Croatia does not encompass the ownership issue. Hence, in this article we investigate trends in productivity related to the ownership structure using data for Croatia both during the boom and recession phase. For estimating production function and backing out TFP we use firm-level data divided by the 2-digit level of the Nace Rev. 2 classification.

The paper adopts the following structure. Section 2 briefly discusses the relevant literature. Section 3 presents the data and methodology used for the empirical analysis. Section 4 contains presentation of empirical results and discussion, while the last section offers conclusions.

2. LITERATURE REVIEW

The economic growth in countries is traditionally explained by the growth of human and physical capital, but also more recently through the increased emphasis on the famous residual – total factor productivity. Indeed, studies have revealed that a large proportion of growth can be attributed to this
rather vague indicator (Hall and Jones, 1999).

Most often in the literature TFP is defined as a variation in output that cannot be attributed to variations in production inputs (Krugman, 1994; Hulten, 2001; Helpman, 2004). This implies that TFP is a non-observable variable which has to be estimated, producing extant studies discussing appropriate methodological issues. More comprehensive analysis of methodological issues related to TFP estimation can be found in Van Beveren (2010) and Del Gatto, Di Liberto and Petraglia (2011).

TFP is closely related to the level of income per capita. Existing research shows that richer countries are more productive, while poorer are less productive. Helpman (2004) shows that countries with high level of TFP have high income per capita and concludes that since richer countries have a higher level of physical capital and a better educated workforce, their income is higher because of all the three factors – more physical and human capital and higher TFP. Pires and Garcia (2012) argue that differences in productivity account for all the differences in economic growth between developed and developing countries. Easterly and Levine (2001) and Hulten and Isaksson (2007) also argue that differences in TFP are the main source of the differences in the level of development. Literature on total factor productivity is mostly focused on the developments in the overall economy, while research of industries is less in focus. Existing studies, however, suggest large and persistent heterogeneity in firm-level productivity, even in narrowly defined industries, across the countries (Bartelsman, Haltiwanger, and Scarpetta 2013). Thus, the between-industries differences in TFP are expected.

Since the goal of transition economies has been real convergence to the advanced economies’ development level, the increase in TFP is an important determinant of the catch up process. Structural changes that transition economies have gone through are perceived as a crucial stimulus to increase TFP, and the removal of central planning and increase in private ownership should have been the carriers of future development. Some studies argue that until the beginning of the transition period, TFP growth was almost non-existent, while the main source of growth was increase in capital and labour (De Broeck and Koen, 2000; Campos and Coricelli, 2002). However, the first decade of the transition did not bring the expected convergence, due to initial (surprising) fall in both TFP and growth rates. Campos and Coricelli (2002) argue that the reason for that is a lack of coherence in the reform strategies.

After initial struggles, transition countries managed to start convergence process, especially those preparing for the membership in the EU (Bah and Brada, 2009; Epstein, 2014). However, even though the convergence process has finally started, transition countries still have not caught up with the developed countries in the level of GDP per capita.

Even though growth accelerated after the initial drop, the interest in the role of private ownership in the economic development remained, due to its utmost importance for establishing market economy. Privatisation is perceived
as an important vehicle to increase TFP and economic growth. Advocates of privatisation argue that privatisation will improve the performance of the companies, but also that it will impose hard budget constraints, forcing loss makers to exit the market and leaving productive companies to attract investors. Studies have shown that in the case of transition countries experience with privatisation was generally positive. Privatised companies tend to restructure more quickly and perform better than state-owned companies, but only if competition on the market, hard budget constraints, high corporate government standards and effective legal structure are present (IMF 2000). Estrin et al. (2009) find a positive effect of privatisation on TFP in the CEE countries, but note that privatisation has a larger effect on TFP in companies that were privatised by foreigners than by domestic owners. Frydman et al. (1999) compare the performance of private and state owned firms in Central Europe and argue that privatisation to outsider-owners (including foreign investors), but not to insiders (managers and employees of the privatised companies), has a significantly positive effect on firms’ performance.

This paper is focused on the TFP evolution in Croatia, with particular focus on ownership and sector differences. Previous studies are relatively scarce. Raguž, Družić and Tica (2016) estimate aggregate TFP evolution in the period 1952-2010 and find positive effect of transition on TFP growth. Transition changed the trend in TFP growth rates from negative to positive, but those higher TFP growth rates affected only moderately the contribution of TFP to the GDP growth rates. The authors explain the moderate change in TFP contribution by the similar effect of transition on physical and human capital, causing relative importance of growth factors not to change significantly. Sectoral approach has been adopted by Gelo and Družić (2015). The authors have focused on the 2009-2013 period and have established important differences in TFP growth between the different sectors of the Croatian economy. The rest of the present paper is devoted to exploring these issues in more details, by examining a longer period and disaggregated approach by adding the ownership component into consideration.

3. DATA SOURCES AND METHODOLOGY

Since TFP is an unobserved variable, it has to be estimated. The most common approach relies on an estimation which adopts the production function:

\[ y_{it} = \beta_0 + \beta_k k_{it} + \beta_l l_{it} + \beta_m m_{it} + \omega_{it} + \eta_{it} \]  

(1)

where \( y \) is value added proxied by sales net of intermediate inputs from firm \( i \) at time \( t \), \( l \) is labour costs, \( k \) is capital, reserves and retained earnings, \( m \) is intermediate inputs proxied by costs of goods sold, but without labour and amortization costs, while \( \omega \) is productivity and \( \eta \) is measurement error, both unobserved. All variables are deflated using sectoral deflators from AMECO database and transformed to natural logarithms. Equation (1) is estimated for different sectors of 2-digit NACE classification in order to obtain more precise
estimates. Levinsohn and Petrin’s (2003) methodology is used to estimate the coefficients of the production function. After we estimate coefficients from Equation (1) for every sector, we use these estimated coefficients to calculate TFP for every firm separately. The results presented below are shown in logarithmic form.

However, since TFP is non-observable variable, there are many methodological issues related to its estimation, such as simultaneity bias, selection bias, proxying for firm-level prices using industry-level deflators and problem of multi-product firms (Van Beveren, 2010). In order to solve simultaneity problem, which is mostly discussed in the literature, Levinsohn and Petrin (2003) use firm’s intermediate inputs, unlike Olley and Pakes (1996) who use firm’s investment decision, to control for correlation between inputs and the unobserved productivity shock. In this way they avoid the problem of firms reporting zero investment and are able to use almost all firms in the sample to estimate TFP. Intuitive approach and the ease of use made Levinsohn and Petrin’s (2003) methodology very popular.

The source of Croatian firm-level data used in the analysis is Annual Financial Statements Registry that Croatian non-financial companies are obliged to provide to the Financial agency (FINA) covering the period 1999-2015. The initial aim was to provide a comparative overview of the developments at the sector level even during the longer period. However, there were some methodological concerns as regards the possibility to ensure the comparability of the data. Naturally, the NACE classification itself has been changed many times since its introduction. At the beginning of the analysed period it was not even developed\(^1\). Thus, additional effort has been made to consolidate the individual firm-level data to ensure the correspondence of NACE classification in the data used. For the analysis of aggregate TFP dynamics, the number of observations was lower at the beginning of the sample – most probably due to the problems in identification of correct NACE classification. Additional sector overview suffered from low observation count for the state-owned enterprises. In order to avoid firm-level disclosures of the data, we present the data at the level of NACE sectors and only for those when the number of observations is larger than 10.

It has to be emphasized that when presenting aggregated data (for a specific sector), we do not use any weighting scheme, but simply rely on individual firm level indicators. The reason for this approach is that we are not interested in the contribution of firms/sectors to the overall TFP development in Croatia. Instead, we are more interested in the underlying differences in the speed of transformation in the analysed segments of the Croatian economy.

The definition of ownership is not straightforward, in particular when transition economies are considered. Our classification is governed by the dataset used. We distinguish between two types of ownership:

\(^1\) Prior to NACE adoption in Croatia, the national classification of activities was JKD and not entirely comparable to the classification used in other European countries.
a) Private: including those that went through privatization process, those established private (new firms), cooperatives and mixed ownership if the share of private capital is more than 50 percent.

b) State: public enterprises, firms whose privatization process has not formally ended, firms whose privatization process has not yet begun (although it was expected that they will be privatized) and firms with mixed ownership if the share of public capital is more than 50 percent.

Bearing in mind all the above mentioned data caveats, our final sample used in the remaining of the paper is restricted to the 1999-2015 period. The characteristics of the sample are depicted in Figure 1 and Table 1.

Figure 1 Share of state-owned enterprises in value added, employment and the number of enterprises, 1999-2015

Source: authors’ estimates based on FINA.

As expected, the share of state-owned firms in the total number of enterprises in Croatia is relatively low (but also importantly not significantly declining during the analysed period). It can also be noticed that the share of state-owned enterprises in both employment and value added has been declining in the period before the 2009 crisis. However, the more recent trend actually reveals revival of the state-owned enterprises’ role in the economy. The reason might be that they have been additionally sheltered during the bust period, since they had additional channel of financial resources (through the state budget).
Even though private firms outnumber state-owned, the relevance of state-owned firms for the economy is relatively high. State-owned firms account for only 0.7 percent of the total number of firms, but participate with almost 9 percent in the total number of employees and 11 percent in total value added. Hence, examining TFP separately in the private and public sector contributes to the ongoing policy discussions of the structural reforms in the Croatian economy.

4. RESULTS AND DISCUSSION

We first analyse the evolution of overall TFP differences between the public and private sector in Croatia. As noted before, the data presents simple averages for the whole period.
As presented in the previous chapters, convergence literature argues that increase in TFP is an important determinant of the catch up process. However, as can be seen from Figure 2, the only increase in productivity in the observed period comes from the public and not the private sector. The increase in TFP in the public sector has been particularly strong in the period up to the year 2003. The 1999-2003 state-owned firms’ productivity growth is so strong, that it influences the identification of productivity differences for the whole period. Hence, the increase in TFP for the state-owned sector is important for the overall TFP developments.

Next we focus on the specific developments in different economic sectors. As previously indicated, we consider only those activities in which there have been enough observations in the public sector. Naturally, some activities have constantly higher estimated TFP, both in public and private firms. The data shows that in sectors D (electricity, gas, steam and air conditioning supply) and I (accommodation and food service activities), followed by sector L (real estate activities) the estimated TFP is relatively the highest.

To verify this, we run a simple panel regression model and inspect whether the difference in TFP between state-owned firms and private firms is significant. The results imply that when the whole period is taken into account, we can establish statistically significant differences – private firms are more productive than state-owned. However, when we focus on 2003-2015 period, the difference is not statistically significant. Results can be obtained from the authors upon request.
Figure 3 TFP in public and private sector in Croatia across NACE, 1999-2015

Note: C - manufacturing, D - electricity, gas, steam and air conditioning supply, E - water supply, sewerage, waste management and remediation activities, F - construction, G - wholesale and retail trade; repair of motor vehicles and motorcycles, H - transportation and storage, I - accommodation and food service activities, L - real estate activities, M professional, scientific and technical activities.

Source: authors’ estimates based on FINA.
In addition to general differences between economic activities in terms of productivity, the data presented in Figure 3 also reveals interesting differences in evolution patterns. In general, it can be seen that the TFP path in the state-owned firms is more erratic than in the private segment of the economy. This is probably related to the increased correlation with political cycles, where necessary investment decisions are sometimes postponed. This creates technology gaps and leaps, disabling the state-owned firms’ management from making long-term decisions. Specifically, both management and financing opportunities change with the election cycle. This disrupts normal decision making processes on research and development or investments and probably influences the possibility of state-owned enterprises to participate in market competition. It could indirectly also be related to the opposition towards further privatization. Prolongation of privatization decisions can in such context create huge technological gaps, making the management structures of the state-owned enterprises convinced that their firm will not survive the competition without the safety net of the public sector.

Among the analysed economic activities, those where throughout the analysed period the TFP has been higher in private sector are – C (manufacturing), E (water supply, sewerage, waste management and remediation activities), H (transportation and storage) and M (professional, scientific and technical activities). In these activities, state presence can be found in large enterprises which were either not fully privatized or have been undergoing several private-public changes in ownership. The state was in those incidences mostly concerned with the social component – preserving workplaces, while private investors were more focused on profitability. These two goals have been proven difficult to achieve simultaneously, creating lingering unresolved issues.

It is also interesting to note that in one of the activities (I - accommodation and food service activities), TFP growth seems to be higher in state-owned enterprises. We attribute these results to the methodology used to estimate TFP growth, which is based on production function and subsequently can be less appropriate for measuring productivity advances in services.

5. CONCLUSIONS

The paper has explored the role of ownership for productivity of enterprises in Croatia. The main contribution of the paper is associated with longer-term perspective, enabling discussion related to the evolution of productivity in private and public segment of the economy.

Results contribute to the ongoing policy discussions of the structural reforms in the Croatian economy. We explore sectoral patterns of TFP development and establish that TFP path in the state-owned firms is more erratic than in private segment of the economy. We attribute this to the connection of state-owned enterprises through its management structures with political cycles.

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3 Only in these activities as well private firms have statistically higher TFP than state-owned.
We argue that this link disrupts usual decision making process, in particular when it comes to making decision on research and development investments, which require longer-term vision of firm’s participation on the market. Even though some of the state-owned enterprises are natural monopoly on Croatian market, the size of that market is relatively small and thus these firms could potentially suffer from competitive pressures stemming outside national borders. The important policy recommendation extracted from such arguments would be to establish longer-term perspective and financing for the state-owned enterprises.

Although it seems encouraging that we found activities in which TFP growth is higher in state-owned enterprises than in private ones, we attribute this specific result to the methodology applied. Since productivity and TFP measurement is additionally burdensome in service sector, we leave these issues for future research endeavours.

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TRADITIONAL ACTIVITY INDICATORS IN
THE FUNCTION OF DETERMINATION OF
MATERIAL MISSTATEMENT IN THE FINANCIAL
STATEMENTS OF THE COMPANIES

Abstract

The financial statements of general purpose are important source of information for purpose of business decision-making. Therefore, it is important to present financial statements fairly and faithfully without material misstatement. The subject of this paper is to explore the impact of traditional indicators of activity on the determination of material misstatements in the financial statements. The main objective of this research is to create a model of an impact of the traditional indicators of activity on determination of material misstatement in financial statements of the companies. Identification of traditional indicators of activity that contribute to the determination of material misstatements in the financial statements is also one of the objectives of this research. The collected data were analysed by inferential statistical methods, and the tables have used to present the research results. Research results revealed that the traditional indicators of the activity contribute to the determination of material misstatements in the financial statements of the companies.

Keywords: financial statements, material misstatements, traditional indicators of activity

1. INTRODUCTION

Today, the business activities of the companies directed to achieving of the determined goals are difficult and threatened from the environment. In that context, financial statements represent the main source of information for business decision making. The role of the accounting system is not only
bookkeeping and financial reporting, but also providing quality and timely information to all users of financial statements. The realistic and objective accounting information are one of the necessary preconditions for business decision making of all stakeholders. „The aim of financial statements of general purpose is to provide information about the financial position, the financial success and the cash flows of business entity, which are useful to a wide range of users in economic decision making.“ (IAS 1, paragraph 9.). The assumption of the International accounting standards is that financial statements represent fairly the financial position, the financial success and cash flows of the business entity. However, there is another extreme, and that is unfairly and unfaithfully financial reporting which implies that financial reports are materially misstated. It is special interest to all users of financial statements to achieve that financial statements are without material misstatements.

The researches that in focus of interest have the analysis of relations between different financial and nonfinancial indicators, and material misstatement in financial statements of the companies are always and especially today interesting to both science and profession. American scientific and research area have a special emphasize on this types of research. „Main reason for this lack of research is the problem of data availability arising from the fact of non-transparent markets and unwillingness of the companies to publicly announce full set of their financial statements.“ (Aljinović Barač, Klepo, 2006, 274). In that context, the aim of this research is to create the model of impact of the traditional indicators of activity on the determination of the material misstatements in financial statements of companies. Additionally, the aim is also to identify the traditional indicators of activity that contribute to the determination of material misstatements in the financial statements. The traditional activity indicators are the main source of information regarding the level and the intensity of using assets and resources of the company. Therefore, the main assumption of this paper is that traditional activity indicators, as the result of the analysis of the financial statements, contribute to the determination of material misstatements in financial statements of companies. Several researches suggested improving the existing determination models that relate different indicators and material misstatements in financial statements. (Dechow et al., 2010; Bayley i Taylor, 2007; Prevooo, 2007).

2. REVIEW OF THE RELEVANT RESEARCHES

Analysis of the accruals measures (Jones, 1991, Dechow and Dichev, 2002, Jones, 2007) as well as research of selected and specially developed financial and nonfinancial indicators and their impact on the determination and prediction of material misstatement were in the focus of recent researches. (Beneish, 1999; Dechow, 2010).

Two very important papers in the area of quality of the financial statements are from the author Messod Beneish in the year 1997 and 1999. In

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1 IAS 1 – Presentation of Financial Statements
the first research, Beneish (1997, p. 271-309) analysed the financial statements of 64 companies with material misstatements and found that indicators Days Sales in Receivables as an indicator of business activity, and Gross Margin indicator are the most important for the company’s classification regarding material misstatements in financial statements. Additional research (Beneish, 1999, p.24-36) revealed that indicators of the average duration of Days Sales in Receivables, Gross Margin Index, Asset Quality Index, Sales General and Administration Index and Positive Accrual Dummy are key factors that have impact on the quality of financial statements.

Another significant model based on financial and nonfinancial indicators is the F-model that is the result of research for the year 2008. (Dechow et al., 2010). Certain activity indicators are included in the final F-model. The research found that activity indicators: Receivables index and Inventory index have a significant impact on the determination of material misstatement in the financial statements.

The role of financial indicators in determining future business events is revealed and demonstrated in the previous period for the purpose of bankruptcy (Altman, 1968), as well as the other business events such as business activity reduction or capital increase (Korcan et al., 2013, 1-75). However, additional researches are also suggested in order to analyse the impact of financial indicators, including indicators of activity, on the determination of material misstatements of financial statements (Korcan et al., 2013, p.1-75). Based on the presented, the issue of this research is new, current and insufficiently explored, especially in the domestic and regional conditions.

3. DEVELOPMENT OF THE RESEARCH MODEL

The methodological approach to the research of the quality of financial statements implies methods of researching and analysing of the material misstatements in the financial statements. Therefore, it is possible to identify three basic methodological approaches to the researching of material misstatements in the financial statements (Gabrić, 2017, p. 112):

1. “Accrual based researches of material misstatements;
2. Financial and nonfinancial indicators based researches of material misstatements; and
3. Alternative approaches to research of material misstatements”.

In this research, the methodological approach is based on financial indicators, particular the traditional indicators of the activity. One of the main objectives of this research is to create the model of the impact of traditional activity indicators, as the result of the analysis of financial statements, on the determination of material misstatement in the financial statements of the companies. Regarding the material misstatements in financial statements as dependent variable and traditional indicators of activity as independent variables,
the conceptual model of research implies the assumption that the traditional indicators of activity are in the function of material misstatements. The research model has presented in the form of a multiple linear regression equation.

\[
MM_{i,t} = \beta_0 + \beta_1 QT_{TA,i,t} + \beta_2 QT_{CA,i,t} + \beta_3 QT_{Rec,i,t} + \beta_4 QT_{Inv,i,t} + \beta_5 DRec_{i,t} + \beta_6 DInv_{i,t} + \epsilon_{i,t} 
\]

(1)

\[
+ \beta_7 \epsilon_{i,t} 
\]

(2)

where is

- **MM** - Material misstatement in the financial statements
- \( \beta_0, \beta_1, \ldots, \beta_n \) - Parameters (coefficients) with independent variables
- **QtTA** - Turnover coefficient of assets
- **QtCA** - Turnover coefficient of current assets
- **QtRec** - Coefficient of Duration of receivables payment
- **QtInv** - Turnover coefficient of inventories
- **DRec** - Duration of receivables payment
- **DInv** - Inventory Days
- \( \epsilon_{i,t} \) - A statistical (random) error
- **i,t** - For a company i, in the period t

Since the material misstatement is primarily the accounting and auditing concept, accounting and audit theory and practice provide the relevant conceptual definition. According to IAS 8\(^2\) “the error is material if it can, individually or collectively, affect the economic decisions that users make on the basis of financial statements. The materiality depends on the combination of size and type of omitted or incorrectly presented items of financial statements.” Accounting errors, and the material ones, arise from the recognition, measurement, presentation or disclosure of the elements of the financial statements. The reasons for the occurrence of errors can arise from the lack of information, wrong assessment of a particular business event or financial effect of the transaction, lack of knowledge, or intention to misstate.

There are different classifications of traditional activity indicators. The accrual-based indicators of activity used in analysis of financial statements have presented in Table 1 with appropriate description and the method of calculation.

---

\(^2\) IAS 8 - Accounting Policies, Changes in Accounting Estimates and Errors
The classification and the method of calculation of activity indicators

<table>
<thead>
<tr>
<th>The name of the indicator</th>
<th>The description and the method of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover coefficient of assets</td>
<td>Total income / Total assets</td>
</tr>
<tr>
<td>Turnover coefficient of current assets</td>
<td>Total income / Current assets</td>
</tr>
<tr>
<td>Turnover coefficient of receivables</td>
<td>Sales income / Receivables</td>
</tr>
<tr>
<td>Turnover coefficient of inventories</td>
<td>Costs of sold inventories / Inventories</td>
</tr>
<tr>
<td>Receivables days</td>
<td>365 days / Turnover coefficient of receivables (QtRec)</td>
</tr>
<tr>
<td>Inventory days</td>
<td>365 days / Turnover coefficient of inventories (QtInv)</td>
</tr>
</tbody>
</table>

Source: Žager et al., 2008, p. 243-296

The traditional indicators of activity are the indicators of management efficiency in use of resources of the company. Because of that, this group of indicators have often called the indicators of management of assets. Calculation of this group of indicators usually put in the ratio incomes (total income, sale income, etc.) and the selected item of the assets that indicates turnovers of assets during a particular period. The indicators of activity point out the level of asset circulation through the business process. The higher value of the turnover coefficient of assets implies the higher probability for company to achieve appropriate level of liquidity and profitability. It is possible to calculate turnover coefficient for each item of assets as an indicator of activity and usually it calculates for total assets, current assets, inventories and receivables. When calculating turnover coefficients of assets it is important to take into account that the value of incomes and the value of the assets should be determined at approximately same price levels. Otherwise, it can occur overestimation or underestimation of the turnover coefficients of assets. Based on the turnover coefficients of the items of inventories and receivables, interesting indicators of the average duration of receivable payments or inventory days can be determined.

Receivables days indicates on the average time needed to reimburse the previously recognised receivables. The shorter time needed for reimbursement of the receivables implies that the company is more active and have a greater potential for a liquid and profitable business. Inventory days indicates on the average time of inventory storage. The lower value of this indicator implies that the company is well in planning and managing inventories. In addition, the higher value of Inventory days implies that there is unnecessary retention of inventories that results in additional costs (including opportunity costs) and reducing the company’s profitability. Unnecessary inventories can immobilize liquid assets (e.g. money) into less liquid assets that result in reducing the company’s liquidity.
Previous and relevant research suggests that activity indicators can be a useful tool in assessing the quality of financial statements. One of the key discriminatory factors in Beneish’s M-model is the indicator: Duration of receivables payment (1999, p. 24-36). On the other hand, Skousen et al. (2008, p. 1-39) showed that, the rapid growth of assets has a positive impact on the likelihood of fraud, or intentional material misstatements in the financial statements.

4. RESEARCH METODOLOGY

4.1. Research sample

For the purposes of the empirical research, it is defined a sample with the basic and control group of companies. Companies with material misstatements in the financial statements are included in the basic sample group, while all other companies without material misstatements in the financial statements are included in the sample control group. The basic and control sample group (see Table 2) consists of the audited annual financial statements of companies whose equity securities\(^3\) (stocks) are listed on the organized capital market in the Federation of Bosnia and Herzegovina (Sarajevo Stock Exchange - SASE).

In the first step, the sample included the total population of 208 companies whose securities are in the quotes of the company (one issuer), the primary free market (29 companies) and the secondary free market (178 companies) of the Sarajevo Stock Exchange\(^4\). In the second step, the sample excluded all inactive companies (whose securities are not active, etc.) as well as financial institutions from due to the institutional differences.

---

\(^3\)“Securities” for the purposes of this Securities Market Act (“Official Newspapers of the Federation of Bosnia and Herzegovina.” No 85/08, 109/12), “is transferable in an immaterial form - an electronic record, issued in a series that provides rights to the holder”.

\(^4\) Data refer to date 29.02.2016 representing the moment of the formation of the sample and the beginning of the collection of empirical data for research purposes. Data were obtained from official data base of Sarajevo Stock Exchange (Source: www.sase.ba)
Table 2

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of companies on the quotation, free primary and secondary market on the Sarajevo Stock Exchange</td>
<td>208</td>
</tr>
<tr>
<td>Inactive companies whose shares are not traded (suspension and others)</td>
<td>(12)</td>
</tr>
<tr>
<td>Financial entities and institutions</td>
<td>(21)</td>
</tr>
<tr>
<td>TOTAL number of companies</td>
<td>175</td>
</tr>
<tr>
<td>Total number of units (observation) of the basic population in the period 2010. - 2014. (175 x 5 years)</td>
<td>875</td>
</tr>
<tr>
<td>Total number of units in the sample 2010. - 2014.</td>
<td>257</td>
</tr>
</tbody>
</table>

Source: author's own creation

In the context of the adequacy of the research sample, it can be noted that 66.86% of the total number of companies included in the sample is an indicator at an appropriate level. Due to the fact that audited annual financial statements were collected for one or more years, final sample includes 257 audited annual financial statements (basic and control group), or 29.37% of the total population, which is an indicator at an appropriate and acceptable level especially in the field of social researches. Due to the time pattern of the sample for the purpose of this research, the sample includes companies listed on the organized equity market of the Sarajevo Stock Exchange, in a five-year period from 2010 to 2014.

4.2. Methods of data collection and processing

The methodology of data collection and processing implies the selection of appropriate instruments for collecting, systematizing, classifying and statistical data processing. It is used a technique of analysing the content of auditing and financial statements to collect research data for the period from 2010 to 2014 on a sample of companies whose securities are quoted on the capital market in the Federation of Bosnia and Herzegovina. In the next step, the data were classified and ranked where needed. This research considers material misstatement as a dichotomous variable with two possible rank states: the financial statements without material misstatements (rank 0) and the financial statements with material misstatements (rank 1).

After that, the data entered into a database where variable rankings, classification and the calculation of the required financial analysis indicators have performed. Data from audit statements have related to the relevant data from the annual financial statements. Finally, the data have reviewed and prepared for entry into the statistical analysis and testing program (SPSS - Statistical Package for Social Sciences). In this the research statistical methods, that include the application of inferential statistics, have applied as a fundamental form of the scientific-cognitive process. The obtained results have presented by tabular views. Specifically, differential tests have applied, including parametric T-test.
and nonparametric Man-U-Whitney test, as well as binary logistic regression in order to identify activity indicators that have significant impact on the determination of material misstatement in the financial statements.

5. RESEARCH RESULTS

Activity indicators are an indicator of efficiency in the use of company resources. In this research, the traditional activity indicators include the Turnover coefficient of total assets (QtTA), Turnover coefficient of current assets (QtCA), Turnover coefficient of receivables (QtRec), Turnover coefficient of inventories (QtInv), Receivables days (DRec) and Inventory days (DInv). The results of the analysis of the traditional activity indicators (see Annex 1) point out that companies without material misstatement in the financial statements in generally have better average values of indicators of turnover coefficient of asset, turnover coefficient of current asset and receivables compared to companies with material misstatement in the financial statements. Regarding general reference values of the activity indicators, the aim is to maximize all indicator values, except indicators Receivable days and Inventory days, where the aim is to minimize the value of it, in order to improve and maximize the efficiency of asset utilization. It is interesting to note that companies without material misstatements in the financial statements have weaker indicators related to inventories compared to companies with material misstatements in the financial statements. Companies with material misstatements in the financial statements need 151 days in average to reimburse their short-term receivables, which is about 50% longer compared to the companies without material misstatements that need 105 days in average for reimbursement their short-term receivables.

Regarding the tests of differences in the traditional indicators of activity between the two observed groups of companies, the results of the conducted Mann-Whitney U test (see Annex 3) reveal that there is a statistically significant difference in the Turnover coefficient of current assets (QtCA) \( p = 0.036 \) and Receivables days (DRec) \( p = 0.012 \) at the 5% significance level. Statistically significant difference in other indicators of activity was not determined between the observed groups of companies using the Mann-Whitney U test. On the other hand, the results of the conducted T-test, presented in Annex 2, confirm the previously presented results of the nonparametric test of difference. There is a statistically significant difference in the Turnover coefficient of current assets (QtCA) \( df=245; \ p=0.047 \) and Receivables days (DRec) \( df=214; \ p=0.017 \) between the companies with material misstatements and companies without material misstatements in the financial statements at the 5% significance level. However, the T-test has identified two additional activity indicators that significantly differ between the two observed groups of companies at a significance level of 5%. That indicators are Turnover coefficient of total assets (QtTA) \( df = 250; \ p = 0.015 \) and Turnover coefficient of inventory (QtInv) \( df = 221; \ p = 0.007 \). It have not revealed any statistically significant differences in Turnover coefficient of receivables and Inventory days between companies.
with material misstatements in financial statements and companies without material misstatements in financial statements. The results are expected and are in relation with other researches (Gabrić, 2017, p. 209-215) that have revealed the most common areas of material misstatements that are balance items value adjustments of receivables and impairment of inventories. Therefore, it is logical that the indicators of activities related to these areas are also a useful indicator in determination of material misstatements in the financial statements.

Due to the analysis of the impact of traditional activity indicators on determining of material misstatement, binary logistic regression has conducted. Additional reason to apply binary logistic regression is the fact that data in the research sample do not follow normal distribution.

Table 3

<table>
<thead>
<tr>
<th>Variables in the Equation</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 5a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QtTA</td>
<td>-1.414</td>
<td>.496</td>
<td>8.117</td>
<td>1</td>
<td>.004</td>
<td>.243</td>
</tr>
<tr>
<td>QtInv</td>
<td>.145</td>
<td>.053</td>
<td>7.574</td>
<td>1</td>
<td>.006</td>
<td>1.156</td>
</tr>
<tr>
<td>Constant</td>
<td>.118</td>
<td>.318</td>
<td>.137</td>
<td>1</td>
<td>.711</td>
<td>1.125</td>
</tr>
</tbody>
</table>

a. Variable(s) entered on step 1: QtTA, QtCA, QtRec, QtInv, DRec, DInv.

Source: Research results (N=123), SPSS v. 20

The test results (see Table 3) show that the traditional activity indicators: Turnover coefficient of total assets (QtTA) and Turnover coefficient of inventories (QtInv) contribute to the determination of material misstatement in the financial statements of the companies, at a statistically significant level of 5%. The obtained model of impact of traditional indicators of activity on determination of material misstatement is statistically significant and relevant (Chi-square = 21,082; df = 2; p = 0,000). The obtained model represents activity indicators that could serve as useful tool in determination of misstatements, since there is a relation between the value of the indicators and the occurrence of material mistakes in the financial statements.

The results of the statistical analysis presented in Annex 4 indicate the basic characteristics of the obtained model. The value of the Nagelkerke R Square indicator is 0,212, which points out that the 21,20% variations in the dependent variables is explained by the predictors. However, in statistical theory, there is no consensus about the optimal value of this indicator. Therefore, the overall assessment of the model requires consideration of this indicator together with other model parameters. Hosmer and Lemeshow tests indicate how well the model is fit to data, and the statistical significance value of the test should be higher than 0,05 (p>0.05). In this case, the statistical significance value of the Hosmer and Lemeshow test is higher than 0,05 (p=0,217) which indicates that the model is well adjusted to the data.

Beta coefficient values of each predictor show the direction and intensity of impact on determining material misstatement in the financial statements. The
Beta coefficient results show that the indicator Turnover coefficient of total assets has a greater intensity impact \((B=-1.414)\) on the determination of material misstatement in the financial statements compared to the Turnover coefficient of inventories \((B=0.145)\), at the planned statistical significance of 5% \((p<0.05)\). Turnover coefficient of total assets \((QT_{TA})\) has a Beta coefficient value at the level of -1.414 meaning that Turnover coefficient of total assets contributes to the determination of material misstatement in the financial statements of the companies at the statistically significant level \((p=0.004)\). Furthermore, the higher value of the Turnover coefficient of total assets \((QT_{TA})\) contributes to the lower value of the model, or to the lower probability of material misstatements in the financial statements. On the other hand, the higher value of the Turnover coefficient of inventories \((QT_{Inv})\) with the value of the beta coefficient \(B=0.145\) contributes to the higher value of the model (with a low intensity), which implies the higher probability of material misstatements in the financial statements.

It is also interesting to analyse the value of probability factors \((\text{Exp} (B))\) for selected predictors included in the model. The probability factor of Turnover coefficient of total assets \((QT_{TA})\) at the level of 0.243 implies that if Turnover coefficient of total assets increases for 1.00, the probability of occurrence of material misstatement in the financial statements decreases for 75.70%. This additionally implies the relation of this predictor with the dependent variable and its ability to determine material misstatement in the financial statements. On the other hand, the probability factor of Turnover coefficient of inventories \((QT_{Inv})\) at the level of 1.156 implies that if Turnover coefficient of inventories increases for 1.00, the probability of occurrence of material misstatement in the financial statements increases for 15.60%. The fact that companies with significant errors in the financial statements have overestimated the costs for the sold inventories or underestimated the inventories is one of the explanations of the contribution of Turnover coefficient of inventories on the occurrence of material misstatements in the financial statements.

6. CONCLUSION

Based on the foregoing, the financial statements are a useful and important source of information for making different decisions. The results of the conducted research indicate that the traditional activity indicators, as the result of the analysis of the financial statements, have a contribution to the determination of material misstatement in the financial statements of the companies. There is a significant difference \((p<0.05)\) in the traditional activity indicators: Turnover coefficient of current assets \((QT_{CA})\) and Receivable days \((D_{Rec})\) between companies with material misstatements in financial statements and companies without material misstatements in financial statements. In addition, the statistically significant difference between the observed two groups of companies have revealed in the Turnover coefficient of total assets \((QT_{TA})\) and Turnover coefficient of inventories \((QT_{Inv})\). Furthermore, a model of impact has obtained, which indicates that the activity indicators Turnover
coefficient of total assets (QtTA) and Turnover coefficient of inventories (QtInv) have a contribution to the determination of material misstatement in the financial statements. In the end, research revealed that traditional activity indicators are a useful tool in determination of the material misstatements in the financial statements of the companies. The forthcoming researches should take into consideration the analysis of the impact of traditional indicators of activity on the determination of material misstatement in the financial statements of different types of business activities. In addition, it would be interesting to research the impact of activity indicators based on the realized cash flow on the determination of the material misstatement in the financial statements of the companies.

**LITERATURE**


Gabrić, D. (2017): Determining and predicting material misstatements in the financial statements of an enterprise using indicators of analysis of financial statements, doctoral dissertation, Faculty of Economics at University of Mostar and Faculty of Economics, University of Split (thesis defended on March 17, 2017)


Law on Securities Commission of the Federation of Bosnia and Herzegovina (“Official Newspapers of the Federation of Bosnia and Herzegovina”, No. 39/98, 36/99, 33/04 and 92/13)

Law on Securities Register (“Official Newspapers of the Federation of Bosnia and Herzegovina”, No. 39/98, 36/99 and 33/04)

Law on Securities Market (“Official Newspapers of the Federation of Bosnia and Herzegovina” No. 85/08 and 109/12)

Annex 1.

Analysis of the traditional activity indicators regarding material misstatement

<table>
<thead>
<tr>
<th>Material misstatement</th>
<th>QtTA</th>
<th>QtCA</th>
<th>QtRec</th>
<th>QtInv</th>
<th>DRec</th>
<th>DInv</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Audit</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opinion</td>
<td>157</td>
<td>154</td>
<td>154</td>
<td>132</td>
<td>127</td>
<td>81</td>
</tr>
<tr>
<td>Mean</td>
<td>5,79832</td>
<td>2,379100</td>
<td>5,299512</td>
<td>8,91040</td>
<td>104,881552</td>
<td>1880,861512</td>
</tr>
<tr>
<td>Median</td>
<td>4,28600</td>
<td>1,973400</td>
<td>4,022050</td>
<td>0,07050</td>
<td>77,624700</td>
<td>750,064800</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>0,5957815</td>
<td>1,9166918</td>
<td>5,2106286</td>
<td>2,7000686</td>
<td>113,2494523</td>
<td>2440,295116</td>
</tr>
<tr>
<td>% of Total</td>
<td>62,3%</td>
<td>62,3%</td>
<td>61,8%</td>
<td>59,2%</td>
<td>58,8%</td>
<td>59,6%</td>
</tr>
<tr>
<td>Modified Audit</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opinion</td>
<td>95</td>
<td>93</td>
<td>95</td>
<td>91</td>
<td>89</td>
<td>55</td>
</tr>
<tr>
<td>Mean</td>
<td>409614</td>
<td>1,916710</td>
<td>4,777298</td>
<td>2,483655</td>
<td>151,082551</td>
<td>1530,006402</td>
</tr>
<tr>
<td>Median</td>
<td>306300</td>
<td>1,729900</td>
<td>3,362400</td>
<td>1,05200</td>
<td>100,996500</td>
<td>768,388600</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>4162972</td>
<td>1,4832582</td>
<td>4,5823933</td>
<td>5,9173122</td>
<td>167,9728509</td>
<td>2034,362394</td>
</tr>
<tr>
<td>% of Total</td>
<td>37,7%</td>
<td>37,7%</td>
<td>38,2%</td>
<td>40,8%</td>
<td>41,2%</td>
<td>40,4%</td>
</tr>
<tr>
<td>Total</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>252</td>
<td>247</td>
<td>249</td>
<td>223</td>
<td>216</td>
<td>136</td>
</tr>
<tr>
<td>Mean</td>
<td>515663</td>
<td>2,205002</td>
<td>5,100274</td>
<td>1,540941</td>
<td>123,918075</td>
<td>1738,971578</td>
</tr>
<tr>
<td>Median</td>
<td>367450</td>
<td>1,879800</td>
<td>3,757100</td>
<td>0,089800</td>
<td>86,038650</td>
<td>753,655550</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>5406889</td>
<td>1,7770894</td>
<td>4,9773339</td>
<td>4,3717854</td>
<td>139,9437075</td>
<td>2283,469853</td>
</tr>
<tr>
<td>% of Total</td>
<td>100,0%</td>
<td>100,0%</td>
<td>100,0%</td>
<td>100,0%</td>
<td>100,0%</td>
<td>100,0%</td>
</tr>
</tbody>
</table>

Source: Research results (N=257), SPSS v. 20
<table>
<thead>
<tr>
<th>Source</th>
<th>Levene’s Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
<tr>
<td>QtTA</td>
<td>Equal variances assumed</td>
<td>8.499</td>
<td>.004</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>2.663</td>
<td>.008</td>
</tr>
<tr>
<td>QtCA</td>
<td>Equal variances assumed</td>
<td>4.490</td>
<td>.035</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>2.121</td>
<td>.035</td>
</tr>
<tr>
<td>QtRec</td>
<td>Equal variances assumed</td>
<td>1.405</td>
<td>.237</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>.828</td>
<td>.408</td>
</tr>
<tr>
<td>QtInv</td>
<td>Equal variances assumed</td>
<td>26.936</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>-2.401</td>
<td>.018</td>
</tr>
<tr>
<td>DInv</td>
<td>Equal variances assumed</td>
<td>1.893</td>
<td>.171</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>.910</td>
<td>.365</td>
</tr>
</tbody>
</table>

Source: Research results (N=257), SPSS v. 20
Annex 3.

Results of the difference testing using Mann-Whitney U test

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Test</th>
<th>Sig.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The distribution of QITA is the same across categories of MM.</td>
<td>Independent Samples Mann-Whitney U Test</td>
<td>0.055</td>
<td>Retain the null hypothesis.</td>
</tr>
<tr>
<td>2. The distribution of QITCA is the same across categories of MM.</td>
<td>Independent Samples Mann-Whitney U Test</td>
<td>0.030</td>
<td>Reject the null hypothesis.</td>
</tr>
<tr>
<td>3. The distribution of QITReC is the same across categories of MM.</td>
<td>Independent Samples Mann-Whitney U Test</td>
<td>0.040</td>
<td>Retain the null hypothesis.</td>
</tr>
<tr>
<td>4. The distribution of QITny is the same across categories of MM.</td>
<td>Independent Samples Mann-Whitney U Test</td>
<td>0.034</td>
<td>Retain the null hypothesis.</td>
</tr>
<tr>
<td>5. The distribution of QITReC is the same across categories of MM.</td>
<td>Independent Samples Mann-Whitney U Test</td>
<td>0.012</td>
<td>Reject the null hypothesis.</td>
</tr>
<tr>
<td>6. The distribution of QITny is the same across categories of MM.</td>
<td>Independent Samples Mann-Whitney U Test</td>
<td>0.062</td>
<td>Retain the null hypothesis.</td>
</tr>
</tbody>
</table>

Asymptotic significances are displayed. The significance level is 0.05.

Source: Research results (N=257), SPSS v. 20

Annex 4.

Results of the test of the significance of logistic regression

### Omnibus Tests of Model Coefficients

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5'</td>
<td>-1,637</td>
<td>1</td>
<td>0.201</td>
</tr>
<tr>
<td>Block</td>
<td>21,082</td>
<td>2</td>
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<tr>
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a. A negative Chi-squares value indicates that the Chi-squares value has decreased from the previous step.

### Model Summary

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a. Estimation terminated at iteration number 5 because parameter estimates changed by less than 0.001.

### Hosmer and Lemeshow Test

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Source: Research results (N=123), SPSS v. 20
BUSINESS GROWTH IN UNDERSERVED MARKETS: DOING WELL AND DOING GOOD THROUGH GREATER UNDERSTANDING OF VULNERABLE POPULATIONS, FOOD DESERTS, AND BOTTOM OF THE PYRAMID CONCEPTS

Abstract

This paper, guided by the literature concerning vulnerable populations, food deserts and bottom of the pyramid markets, presents a new conceptual model to further our understanding of how businesses can do good, while doing well in under-served/under-nourished/under-employed markets that exist around the world. Practical implication and calls for further research based on the proposed model are also offered.

Keywords: Vulnerable Populations, food deserts, bottom of the pyramid markets

1. INTRODUCTION

Vulnerable populations have been defined as clusters of people who have lessor societal and environmental resources and amplified relative risks toward poor health status, higher morbidity and mortality (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4162317/). More specifically, resources include income, employment opportunities, access to capital and neighborhoods characterized by high crime levels, limited food options and limited transportation options. Relative risk is exposure to or embrace of less-than-healthy lifestyles, daily behaviors and choices.
The term “food desert” has its origins in a 1995 report by the Nutrition Task Force Low Income Project Team of the United Kingdom Department of Health (Cummins 1999). It is defined as “areas of relative exclusion where people experience physical and economic barriers to accessing healthy foods,” (Reising and Hobbiss 2000). Food deserts exist in many areas in our world, including the developed, emerging and underdeveloped nations.

Prahalad and Hammond, (2002) and Prahalad and Hart (2002) first coined the term “bottom of the pyramid” (BOP) and defined it as those billions of people on the planet with per capita income below $1,500 per year or $4 per day. Since then, the forces of globalization have significantly reduced this number, but still the size of this population is enormous (Wood 2016). Both extant literature and practical examples indicate that the BOP marketing offers opportunities to create value for the poor (“doing good”) while also creating significant profits for companies that engage this market (“doing well”).

This conceptual research focuses on the realities of food deserts and the vulnerable populations that inhabit them in developed societies (e.g., the United State of America). It also examines the realities of the vulnerable populations at the “bottom of the pyramid (BOP)” in developing societies (e.g., India, Africa, South America and others). By examining the approaches to appreciating and improving the realities of valuable population in both societies (developed and developing) a more holistic understanding of the underserved in our world may be possible. Likewise, insights from such understanding can perhaps, help organizations who invest in and serve such populations be more successful.

1.1 Vulnerable Populations and Food Deserts: Realities in the U.S.

Food desert – as noted previously, the term was first documented in a 1995 report by the Nutrition Task Force Low Income Project Team of the United Kingdom Department of Health. It is defined as “areas of relative exclusion where people experience physical and economic barriers to healthy foods” (Cummins 1999, 2002). In the U.S., food deserts are identified as parts of the country with only limited access to fresh fruit, vegetables, and other healthful whole foods. Food desert are typically located in poverty-ridden parts of cities, but can exist in rural areas as well. This is largely due to a lack of grocery stores, farmers’ markets, and healthy food providers (Wood and Thomas 2016).

Food deserts and the vulnerable populations living (existing) there in, represent a dishonor to and failure of both social institutions and economic systems. Food deserts are often devoid of well-stocked, up-to-date grocery outlets, especially those that carry fresh fruits, vegetables, dairy products and protein. Urban food deserts are often replete with local (but not locally owned) fast-food retail options that provide processed foods, sugar-laden treats, and saturated fat choices (fried food warmed all day by heat lamps, and pizza), that
are known contributors to obesity, cardio-vascular and respiratory disease and diabetes (Reising and Hobbiss 2000; Rose and Richards 2004). It has been said, that “in an urban U.S. located food deserts one can purchase fried chicken, pizza and old bananas, while also picking up an alcoholic beverage and pack of cigarettes, but that’s about it” (Lee 2016). Urban food deserts in the U.S. are populated by vulnerable populations, predominately African American who are at high risk of experiencing violence, crime, personnel degradation, economic poverty and long-term despair over the full course of their lives (Shivayogi 2013). An often ask question evoked by this reality is - how did this happen?

In the U.S., the long and torturous journey of those who make up the vast majority of vulnerable inhabitants of food deserts – African Americans – can perhaps best be captured by first understanding the historic realities of slavery and Jim Crow laws. Between 1525 and 1866, according to the Trans-Atlantic Slave Trade Database (see - www.slavevoyages.org/), 12.5 million Africans were shipped to the New World. Of those, 10.7 million survived the dreaded Middle Passage, disembarking in North America, the Caribbean and South America. Of those 10.7 million Africans, only 388,000 were shipped directly to North America. The overwhelming percentage of these African slaves were shipped to the Caribbean and South America. Brazil received 4.86 million Africans alone. Some scholars estimate that another 60,000 to 70,000 Africans arrived in the United States, after touching down in the Caribbean first, which would bring the total to approximately 450,000 Africans who arrived in the United States over the course of the slave trade. From these slaves came most of the 42 million members of the African-American community living in the U.S. today (Gates 2014). Denied their freedom, wages for their labor, and many other common dignities, African slaves were seen as less than human, and as inhabitant of the earth that needed specific oversight by those who were granted superior faculties by god, namely Caucasians of European decent (Campbell 2012).

By the end of the 18th century, the American Revolution freed the colonies from British rule and led to the creation of the United States. It did not, however, free the slaves. That took another seven decades involving the war-between-the-states and the Emancipation Proclamation, issued by President Lincoln in 1863. In 1865, the Civil War ended, and the Thirteenth Amendment to the U.S. Constitution abolished slavery throughout the U.S. (see – http://www.infoplease.com/timelines/slavery.html). Again, however, this did not end the plight of these new “African Americans.” Institutionalized segregation, discrimination and class structure continued the subjugation of black Americans and ultimately led to today’s current urban food deserts and the vulnerable populations residing there-in.

This brings us to the second historical antecedent to food deserts in the U.S. – namely Jim Crow laws. When state legislatures passed laws of racial segregation directed against blacks at the end of the 19th century, these became known as Jim Crow laws (see - Woodward and McFeely 2001). In essence, Jim Crow laws represented the “de jure” continuation of white dominance over blacks though violence, intimidations and state approved discrimination as
often carried out by the Klu Klux Clan and other “hate groups” (see – Southern Policy Law Center - https://www.splcenter.org/fighting-hate/extremist-files/groups). Jim Crow laws legally enforced racial segregation in most if not all public facilities. These laws institutionalized numerous economic, educational and social disadvantages to blacks. Moreover, these realities, while not “de jure” law in the north, eventually became “de facto” law in northern states over time, as well. Thus, the whole of the nation basically bought into a philosophy of “separate but equal,” resulting in conditions that were consistently inferior for blacks in America, when compared to whites. (Woodward and McFeely 2001).

After World War II, African Americans increasingly challenged segregation. The civil rights movement, and landmark Supreme Court rulings such as those that mandated school segregation (Brown versus the Board of Education of Topeka – 1954), the historic Civil Rights Act of 1964 (outlawing discrimination in public accommodations), and Voting Rights Act of 1965 (ending legally sanctioned state barriers to voting for all federal, state and local elections), effectively ended Jim Crow. Nevertheless, the reality of segregation, discrimination and underfunding of basic services in predominately African American communities in the U.S. continued and continues today. Indeed, the vulnerability of this population is largely a reflection of lingering historical effects (see Hosea 2013; Campbell 2012).

The economic realities faced by the urban poor in the United States can perhaps be best understood by understanding the term “redlining” and the effects it has reaped. Redlining is the practice of denying services, either directly or through selectively raising prices, to residents of certain areas based on the racial or ethnic makeup of those areas (https://en.wikipedia.org/wiki/Redlining). It refers to the practice of marking a red line on a map to delineate the area where banks would not invest and later became the term used to describe discrimination against any people based race or sex irrespective of geography, although the inner city “ghettos” were a frequent target of this process (Dedman 1988; Sagawa and Segal 1999).

Redlining led to a lack of generational wealth creation and resulted in whole communities without proper public transportation (mobility), with high un- and under-employment, and dependence on food stamp and other public programs for survival (Maxwell and Immergluck 1997; Eisenhauer 2001). Redlining has been shown to severely retard the housing market, lower property values in reodeled communities and encourage property owner abandonment, resulting in a segregated population density skewed towards those that are most vulnerable. Abandoned structures in such area often serve as shelters for drug dealing and other illegal activity, which in turn leads to spiraling social problems and continued reluctance of people to invest in these areas (Wilson 1996). What housing does exist is overwhelmingly “public” in nature, which garners little pride in upkeep and maintenance by residents. In general, public housing communities became ripe with crime, unemployment, limited mobility, poor overall healthcare, degradation of infrastructure, limited and poorly funded education and dependence on government programs, all of
which in combination lead to a “cycle of institutions” and a challenge to family structure. The majority of families in public housing communities are led by a single parent (predominantly females). Taken together, this toxic swill creates an urban environment that fully represents what a food desert is - a community of vulnerable people (Walter 2003).

The vulnerable populations in food deserts in America remain tattered and stressed. Overcrowding (in public housing “projects”), limited mobility, broken family structures, abundance of drug use and poverty-based crime, high under and unemployment, lack of wealth creating enterprises and a preponderance of marginal food outlets all combine to form a cycle of institutional “pass-throughs,” where an individual’s life path may be represented by a series of underfunded and thus relatively bleak experiences in grade school, middle school and high school. This is followed by gang membership (for respect and safely), leading to criminal activity, which in turn is followed by lengthy incarceration, followed by a return to the only home available, the food desert. Moreover, in the end, a now twenty-seven-year-old “pass-through” finds himself or herself with no skills, no credit and no hope, where personal vulnerability may continue for a lifetime in his familiar public housing community (Curtis Lee 2016).

Existing literature indicates that access-related concerns (e.g., sustainable transportation to and from healthy food outlets), and lack of education (with respect to food options, preparation of food varieties and general principles of nutrition), are significantly correlated with premature death among vulnerable populations living in U.S. food deserts (Rose and Richards, 2004; Walker, Keane, and Burke, 2010, Wood and Thomas 2016, Wood and Thomas 2017). For example, census tract data indicates that life expectancies are shorter by almost 20 years among those living in the Fairfield Court public housing community in the “East-End” of Richmond, Virginia (a notable urban food desert located in the eastern region of the U.S.), when compared to the city’s more affluent neighborhoods just five or less miles away in the “West-End.” The average life-span in Richmond’s East End food desert is 60 years. The average in its affluent West End neighborhood is 80 years (Wood and Thomas 2016).

1.2 Vulnerable Population at the Bottom of the Pyramid

The bottom of the pyramid literature has created a high amount of interest, particularly in the developing world (e.g., South America, Africa, India). For marketers it combines the appeal of social action and profit. The tantalizing prospect of helping the poor while earning revenue speaks to the idealism within marketers. The ultimate prospect arising from marketing to the BOP is an increase in global prosperity with probable declines in conflict. The thought that inequities in income and opportunities fuel resentment and discord that leads to strife and war is a paradigm that has been present for centuries. Over time, researchers and practitioners have sought to implement bottom of the pyramid (BOP) concepts in a variety of settings. Some have borne fruit; others have failed. As a result, the image of doing social good while doing well financially has become less cut and dried. As our understanding increases (and
related literature matures), the opportunities and challenges of marketing to the BOP have become clearer and more nuanced. Both market profile and market strategy must be carefully considered (Wood, Pitta and Franzak 2008).

It is becoming more accepted that the BOP marketing offers opportunities to create value for both the poor and for companies that engage this market (Karnani, 2007b). Two reasons for this are apparent including - 1) the real income of BOP consumers and 2) the sheer size of the BOP market itself. The oft-quoted BOP figures of 4 billion people with per capita income below $1,500 per year or $4 per day (Prahalad and Hart, 2002), and 4 billion people with per capita income below $2,000 per year or $6 per day (Prahalad and Hammond, 2002), have at times been questioned by researchers (Karnani, 2007a). These figures, and thus the scope of the BOP market were later cited by Prahalad (2004) as 4 billion people making less than $750 per year or $2 per day. Karnani (2007b) reports that the World Bank estimated the actual size of the market to be 2.7 billion (as opposed to the often cited 4 billion) and other respected sources characterized even the World Bank figure as an overestimation, with some estimating the poor at only 600 million (Economist, 2004). Indeed, differences ranging from a) earning of $2000 per year to $750 per year and b) 4 billion in total to 600 million in total are indeed large. Never-the-less, as our understanding of the basic profile of BOP markets has evolved, it is apparent that no matter what the size estimate is, this market is indeed potent. However, like any market, the BOP’s potential contribution to any firm’s profits needs to be tempered with a well-grounded understanding of key demographics (income and size).

Concepts related to successful marketing strategies aimed at BOP segments around the world have also evolved. Like most markets, there is no “one size” fits all plan for companies engaging or contemplating engaging the BOP market. However, there are two elements of the BOP proposition that have been identified as highly correlated to successful marketing to individuals that fall within this market no matter where they are. First, an accurate characterization of BOP individuals both as consumers and as producers is required to fully understand their needs, perceptions, and behaviors. Indeed, more often than not, BOP individuals are producers and consumers of specific goods (food, clothing, shelter, etc.) and thus the typical separation of production and consumption, common among developed markets, is not readily apparent here. The need for firms marketing to the BOP to carefully cultivate perceptions of transactions as “partnerships in cooperation” rather than “competitors and mercantile” is needed (see Rutherford, 2000, and Martinez and Carbonell, 2007). Second, it is important to recognize that marketing to BOP individuals often requires a different business model than one typically found in advanced markets, one incorporating access to micro-credit as well as micro-finance, and the adaptation of the marketing mix that emphasizes function (specific utilities relevant to those of limited means) and identity (where products and services are also perceived as a means to a larger world of cherished values, and not just tied to physical or material wellbeing – see World Bank, 2002 – *Voices of the Poor*).
One enduring impression of the BOP poor is that they have few options and few opportunities to exercise options. In India, for example, the historical realities of the “cast” system lead to on-going social and economic segregation. This system, which had its origins in ancient India, and was transformed by various ruling elites in medieval, early-modern, and, modern India resulted in centuries of stratified social status, specific types of work being reserved (or required) of specific casts, and senior government appointments allowed only to the upper castes (Dumont 1980). Likewise, the cast system limited where the lower casts (which make up a significant portion of the Indian BOP population) could live, with whom they could associate, and where and if they could acquire resources to build enterprise, and thus limited their ability to build generational wealth (Dirks 2006). Even today, their social and economic status constrains them to pay a BOP penalty for items they purchase. They typically do not or cannot travel to locations that have better distribution infrastructure, lower prices or product or service alternatives. Such constraints require BOP consumers to buy locally from the village monopolist who, having great market power can charge higher prices and thus further exacerbating this situation. Given this historical and contemporary reality, the consumption experience more often than not leaves BOP people suspicious of business in general and feeling powerless to do much about it. Add to this, the typically lower educational level of BOP consumers, and their relatively limited awareness of the “outside” world, BOP consumers have come to view most outsiders as suspicious and foreign entities that should be shunned (Venkatagiri and Nair, 2005).

In sum, BOP populations such as those in India or vulnerable and doing both good and well in BOP markets involves managing substantial challenges rising from historic, economic, social and cultural realities. Related to this, are a number of questions that need to be addressed. Gardetti (2005) articulated a number of these questions, including - how can companies transform their strategies aimed at wealthy markets into competitive advantage in BOP markets? What kind(s) of business model will work best in BOP markets? What messages resonate most with BOP individuals and how can they be used to build trust in this unique economy? And what is the larger role of business and society in the educational and social development of BOP markets? The ultimate question to firms examining such markets is - how can we do well, while also doing good in BOP markets? Clearly, appropriate marketing strategies aimed at BOP populations is central to answering this questions.

1.3. A Proposed Model

Based on the brief background provided above, it appears that a number of commonalities exist with respect to historic and contemporary realities that have resulted in food desert populations (in developed economies like the U.S.) and bottom of the pyramid populations (in developing economies like India). Figure 1 (A Model of Vulnerable Populations in Food Deserts and the Bottom of the Pyramid – Antecedents, Moderators, Mediators and Outcomes) is presented as a starting point to our thinking and understanding of food desert and BOP populations and how to do good and do well in both.
Common “antecedents” include historical, economic, social and cultural dimensions. Slavery and Jim Crow laws (in U.S. food desert populations) and the caste system (in Indian society) laid the historic groundwork for the creating of these vulnerable populations. Redlining, lack of mobility, general wealth building deterents and the presence of over priced goods reflect the economic past and current realities in both populations. Forced segregation in public housing and communities at large define the social landscape that existed and exists in both India” and the U.S.” vulnerable populations. And culture/community realities resulting in drug use, abject poverty and high crime; cycles of institutional pass-throughs in U.S. food deserts, along with restricted association regulations, restricted employment and restricted living areas are apparent in these vulnerable populations to one degree or another.

The model shown in Figure 1 postulated that these antecedes (and their influence on the rise and sustainment of vulnerable populations in both developed and developing societies) can be moderated with education, sustainable transportation options and with an understanding that these populations should be viewed as both consumer and producers and as partners in any transaction. Education is the key to eating healthy foods and understanding how any individual can make his or her way out of a food desert or BOP community. Sustainable transportations allow access to and from necessities (quality food, retail shops and entertainment options), and allows access to employment opportunities.

Figure one also postulates that a clear understanding of the people that make up food desert and BOP populations, and a translation of that understanding into appropriate marketing strategies (that reflect a culture of partnership and cooperation) can mediate the suspicions prevalent in this population towards outsiders that have left them jaded for centuries.

In the end, the model suggests positive outcomes for all who truly understand these antecedents, moderators and mediator. That is, that the way to do both good (uplifting the economic and social realities) and do well (creating sustainable wealth for engaged organizations and business entities) is to engage vulnerable populations with a clear understanding of how they come to be and how they can be moved forward.

2. CONCLUSION – BUSINESS IMPLICATIONS AND FUTURE RESEARCH

This paper presents an exploratory conceptualization and model that brings both Bottom of the Pyramid (BOP) and Food Desert literature together under the rubric of vulnerable populations. BOP and food desert populations exist in most countries and represent both a challenge to and opportunity for society and business organizations. The model presented here views both populations as having much in common (with respect to antecedents, moderators, a mediator and outcomes) posits that a fuller understanding of these commonalities can lead
to doing good and doing well in this environment. If the model holds true, then insights into what organizations and business firms should be considering when approaching these populations are with their grasp.

The issue becomes does this model capture the essences of both populations? Are there other antecedents, moderators, mediators and outcome that would enrich our understanding of these populations and how to address their situations better and more profitably? Future research should consider such questions and then move to empirically verify the model as a whole and the individual parts of it laid out here.

The need to improve the lot of vulnerable populations is both a moral and economic imperative. If the human endeavor is to truly arrive at a place of nobility some day in the future, then both BOP and food desert populations must be made a thing of the past.

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Figure 1 A Model of Vulnerable Populations in Food Deserts and the Bottom of the Pyramid – Antecedents, Moderators, Mediators and Outcomes
PUBLIC FINANCE
REVISITING THE EFFECTIVENESS OF THE HEALTH INSURANCE TAX CREDIT

Abstract

With the push to repeal the Affordable Care Act (ACA) and replace it with the American Health Care Act (AHCA), there is renewed interest in using tax credits to increase health insurance coverage. A similar tax credit-driven policy, the Health Insurance Tax Credit (HITC), was implemented from 1991 to 1993. To date, only one paper (Cebi & Woodbury, 2014) has analyzed the effectiveness of the HITC in increasing health insurance coverage. This paper re-examines the efficacy of the HITC by using a different data set from the Survey of Income and Program Participation (SIPP). This examination yields similar results to those in Cebi & Woodbury (2014), which is that the HITC increased health insurance coverage among single mothers by about 6.6 percentage points. Further, this study finds that the HITC appeared to influence the rates of usage of health care services. This paper concludes by discussing the implications of these findings for the broader debate surrounding health care reform in the present moment.

Keywords: Tax credits, Health insurance, Health care utilization

1. INTRODUCTION

Health insurance access and affordability continues to dominate the political landscape in the United States. A significant component of the debate regarding health care reform is the change in the amount and eligibility for receiving tax credits in purchasing health insurance. On March 6th, 2017, Speaker of the House Paul Ryan unveiled the highly anticipated health care plan, the American Health Care Act (AHCA), as an alternative to the current Affordable Care Act (ACA). One key difference between the ACA and AHCA is that the AHCA explicitly relies on tax credits to prompt people to purchase coverage, as
it removes a provision of an individual mandate. To be more specific, while tax credits are still refundable, the AHCA offers a flat dollar amount that varies by age and phases out at a higher level of income. Due to this, the AHCA provides lower tax credits for low income populations than the ACA. As a result, the new plan is projected to decrease enrollment among low-income families (CBO Report, 2017).

Although the AHCA was pulled from the floor when it was first introduced, the House of Representatives passed a new version of the bill in early May 2017. The AHCA shares some similarities with an earlier bill, the Health Insurance Tax Credit (HITC), implemented in the U.S. from 1991 to 1993. Both bills are designed to use tax credits as a way to motivate individuals to sign up for health insurance. This paper revisits the HITC in order to analyze the effectiveness of tax credits in the acquisition of coverage and utilization of medical services.

It is important to note that there exists a difference between the current situation and the period in which the HITC was implemented. In the HITC, some people were given subsidies that they did not have before. In contrast, if we transition from the ACA to the AHCA, most of the previous tax credit eligible individuals will receive less assistance in subsidizing the cost of health insurance. Although the overall circumstances of tax credits offered under the HITC differed from what is offered under the current law and proposed legislation, it provides a natural experimental setting to explore the responsiveness of tax credits, which has implications for the larger health care debate of the present moment. To date, only Cebi and Woodbury (2014); (C&W hereafter) has explored the effectiveness of the HITC on increasing health insurance coverage.

This paper replicates C&W with different data from the Survey of Income and Program Participation (SIPP) and expands that analysis to include health care utilization, as this is what ultimately matters to policy makers. It is reasonable to hypothesize that if low-income populations experienced a significant increase in insurance enrollment, health care utilization in the HITC period might have subsequently increased.

This expanded replication study reaffirms that tax credits influence a person’s decision-making regarding health insurance and appear to increase health care utilization. This paper begins by outlining the empirical strategy of the HITC. The next section describes the data set used in this study. Finally, this paper concludes with an analysis of results and a discussion of their implications.

1.1. Methods

1.1.1. Empirical Strategy

The HITC, enacted from 1991 to 1993, was a supplemental form of the Earned Income Tax Credit (EITC) and based on the Omnibus Budget Reconciliation Act of 1990. Participants could receive a refund even if they had no federal tax liability. Because the HITC had similar criteria to that of the EITC, private health insurance was required to cover at least one qualified child, who had to satisfy two requirements: “(1) be a child, stepchild, grandchild,
foster (i.e. cared for as own child) or adopted child of the taxpayers and (2) have the same place of residence as the taxpayer for more than half of the tax year °(C&W). Those enrolled in either non-group or employer-provided private insurance plans were eligible for the HITC, which was structured to vary by earned income. For example, if one’s income was from $1 to $7,140, they would have received 6 percent of their income.

If one’s income was between $7,140 and $11,250, the credit would stay constant at $428 in 1991 ($451 in 1992, and $465 in 1993) on top of basic EITC. Income up to but not exceeding $21,250 would make an individual eligible for the HITC. The average amount received by HITC-qualified individuals was quite modest at 23 about percent of the overall average cost for health insurance premiums (GAO, 1994).

To examine how the HITC affected single mothers, I follow C&W and use a difference-in-differences (DiD) strategy. The DiD estimates the effect of the HITC on the outcomes of interest by comparing the average change in the outcome variables for the treatment group with that of the control group. This assumes that the trend in the outcomes for both groups would have been the same without the HITC. Therefore, any deviation from this trend is attributed to the policy.

Following C&W, my treatment group is working single mothers not exceeding a high school education and the control group is working single women, without children, not exceeding a high school education.

My primary outcome of interest health insurance coverage is based on the following SIPP questions:
− ‘Was the respondent covered by a private health insurance plan and under their own name?’
− ‘Besides the respondent, were there any other children in the household covered by the respondent’s plan?’

For the control group, I define respondents as covered if they answered ‘yes’ for the first question. Within the treatment group, they were defined as covered if they answered ‘yes’ to both questions. In the baseline specification, I include the primary background characteristics in C&W. I estimate the following equation using the linear probability model (OLS):

\[ Y_{ist} = \beta_0 + \beta_1 * TREAT_{ist} + \beta_2 * DuringHITC_{ist} + \beta_3 * TREAT * DuringHITC_{ist} + \beta_4 * Z_{ist} + \gamma_1 * URT_{st} + \gamma_2 * URT_{st} * TREAT_{i} + \gamma_3 * \theta_{s} + \varepsilon_{it} \]  

(1)

where i, t and s index individual, time (years) and state, respectively.

The outcome variables of interest, Y_{ist}, are binary variables indicating whether the individual (i) in state (s) at time (t) was covered by private health insurance under the respondent’s own name and had visited a physician at least once in the previous year. TREAT_{ist} is equal to unity if she was a single mother. Otherwise, it is 0. DuringHITC_{ist} is a dummy variable for the years from 1991 to 1993. It is equal to 0 if the years are from 1989 to 1990. TREAT * DuringHITC_{ist}
is equal to unity, only if the individual (i) is in the treatment group, and the tax year is 1991, 1992 or 1993. The coefficient of interests are $\beta_1$, $\beta_2$ and $\beta_3$. $\beta_1$ would be negative if single mothers in general have less accessibility to health insurance and health care service than single women without children. To put it differently, it explains the preexisting difference in outcome variables between single mothers and single women without children.

As the percentage of coverage decreased over the analyzed period, I would also expect estimate of $\beta_2$ to be negative. Estimate of $\beta_3$ denotes the effect of the HITC. If there was a relatively positive increase in the treatment group’s outcome of interests during the HITC period, estimate of $\beta_3$ is expected to have a positive sign. Zist controls for individual characteristics. It includes race, age, earned and unearned income, work status, number of children in the household, and metropolitan residency. I also include state fixed effect ($\theta_s$), year specific state unemployment rate (URTst), and the interaction of URTst and TREATi dummy. If the coefficient of this interaction term is positive, it suggests that single mothers are less susceptible to the business cycle in purchasing health insurance and utilizing health care service.

1.1.2. Data

I use data from the Survey of Income and Program Participation (SIPP). Households are interviewed once every four months and answered about the previous four months. Within each SIPP panel, the sample is randomly divided into four groups. One rotation group is interviewed each month and after all rotation groups complete their first interview, the first wave of the panel concludes. This continues for eight waves of each panel over the course of three years (SIPP Users’ Guide, 2001).

For each SIPP panel, I select a wave that represents each year from 1989 to 1993. I use of single women drawn from the third wave of the 1990 to 1993 panels (September to December for each year) and the sixth wave of the 1988 panel (September to December in 1989). The data that I use provides more point-in-time information of an individual’s health insurance coverage status, allowing me a lower possibility of inaccurate recall than the Current Population Survey that C&W employed. I chose these waves because they include corresponding questions about health care utilization. Specifically, they include a proxy of health care utilization i.e. information on yearly physicians’ visit which represents a key indicator of access to care, regardless of income level (Shi and Starfield, 2001).

Table 1 provides the descriptive statistics of the control and treatment groups. Table 2 shows the change in coverage during this period.
### Table 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Single Women</th>
<th>Single Mothers</th>
<th>Statistically Different</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (in years)</td>
<td>32.6</td>
<td>32.8</td>
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<tr>
<td></td>
<td>(8.28)</td>
<td>(6.87)</td>
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<tr>
<td>% w/&lt;12 years of education</td>
<td>.152</td>
<td>.305</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>(.360)</td>
<td>(.460)</td>
<td></td>
</tr>
<tr>
<td>% w/=12 years of education</td>
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<td>.694</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>(.360)</td>
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<td></td>
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<tr>
<td>Number of Kids</td>
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<td>1.85</td>
<td>***</td>
</tr>
<tr>
<td></td>
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<td>(1.07)</td>
<td></td>
</tr>
<tr>
<td>% White</td>
<td>.765</td>
<td>.559</td>
<td>***</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>% Black</td>
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<td>.306</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>(.359)</td>
<td>(.460)</td>
<td></td>
</tr>
<tr>
<td>% Others</td>
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<td>***</td>
</tr>
<tr>
<td></td>
<td>(.276)</td>
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<tr>
<td>% Full Employed, Full-Month</td>
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<td>.469</td>
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<td>(.498)</td>
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<tr>
<td>% Full Employed, Part-Month</td>
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<td>.007</td>
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<td></td>
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<tr>
<td>% Part Employed, Full-Month</td>
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<td>.250</td>
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<tr>
<td>% Part Employed, Part-Month</td>
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<td>.033</td>
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<tr>
<td></td>
<td>(.183)</td>
<td>(.178)</td>
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<tr>
<td>Earned Income (Monthly $</td>
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<td>968</td>
<td>***</td>
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<td>at the time of the interview)</td>
<td>(977)</td>
<td>(859)</td>
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<tr>
<td>Unearned Income (Monthly $</td>
<td>79.7</td>
<td>177</td>
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<td>at the time of the interview)</td>
<td>(825)</td>
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<tr>
<td>% Metropolitan Area</td>
<td>.800</td>
<td>.717</td>
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<tr>
<td></td>
<td>(.401)</td>
<td>(.449)</td>
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<tr>
<td>% Unemployment Rate in one’s State</td>
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<td>6.41</td>
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<td>Observations</td>
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<td>2,780</td>
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</table>

***: statistically significant at 0.01 level  
** : statistically significant at 0.05 level

Standard deviations are in parentheses. Weighted by SIPP individual weights. Dollar amounts are converted to 1993 dollars using CPI-U
Table 2


<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Single Mothers with Children (Treatment Group)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Private Health Insurance under own name</td>
<td>.550</td>
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<td>.476</td>
<td>.420</td>
<td>.401</td>
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<tr>
<td></td>
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<td>(.026)</td>
<td>(.033)</td>
<td>(.026)</td>
<td>(.027)</td>
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<tr>
<td>Private Health Insurance under own name that covers child (covered)</td>
<td>.447</td>
<td>.416</td>
<td>.421</td>
<td>.376</td>
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<td>(.024)</td>
<td>(.034)</td>
<td>(.024)</td>
<td>(.027)</td>
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<td>.679</td>
<td>.679</td>
<td>.701</td>
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<td></td>
<td>(.040)</td>
<td>(.023)</td>
<td>(.037)</td>
<td>(.030)</td>
<td>(.031)</td>
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<td>228</td>
<td>502</td>
<td>270</td>
<td>383</td>
<td>372</td>
<td>1,755</td>
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<tr>
<td><strong>Single Women without Children (Control Group)</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Health Insurance under own name (covered)</td>
<td>.722</td>
<td>.762</td>
<td>.690</td>
<td>.651</td>
<td>.680</td>
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<tr>
<td></td>
<td>(.044)</td>
<td>(.025)</td>
<td>(.037)</td>
<td>(.029)</td>
<td>(.035)</td>
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<tr>
<td>Office Visits (%)</td>
<td>.686</td>
<td>.783</td>
<td>.678</td>
<td>.656</td>
<td>.751</td>
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<tr>
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<td>(.032)</td>
<td>(.027)</td>
<td>(.030)</td>
<td>(.021)</td>
<td>(.024)</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>131</td>
<td>288</td>
<td>174</td>
<td>233</td>
<td>199</td>
<td>1,025</td>
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</tbody>
</table>

Standard errors are in parentheses. Weighted by SIPP individual weights.

Overall, during this analyzed period, Table 2 demonstrates that the percentage of coverage for single mothers with low levels of education fell from 43.12% (the combined average from 1989 to 1990) to 38.3% (the combined average from 1991 to 1993), while the insurance coverage for the control group decreased from 74.2% (the combined average from 1989 to 1990) to 67.4% (the combined average from 1991 to 1993). This falling trend for both groups, in general, shows the decrease in demand and opportunity to access employer-provided health insurance during the recession period around 1991, especially for single women. The first outcome of interests is whether a working single mother has private health insurance in her own name that covers her children, since the HITC could only offset the price of health insurance that covers a qualified child. As an extension toward measuring the indirect effect of the HITC on health care utilization, a relative change in office visits at least once during the previous year for single mothers from 1991 to 1993 is another outcome of interest.

Because of the multistage-stratified sampling of the SIPP, I report both the weighted and unweighted estimates of the linear regression analyses.
2.1. Results

2.1.1. Effects on Coverage Rates

Table 3, columns 2-3, comprise the main findings of this paper, and indicate that health insurance coverage rates were greater by about 6.6 percentage points than otherwise would have been for single mothers from 1991 to 1993. If we take the estimate for the number of the HITC eligible families headed by working single mothers with low education levels from the 1991 Current Population Survey (CPS) (i.e., 2,485,000) and the estimated coverage increase of about 6.6 percentage points, there would be an increase in enrollment by about 149,100 people because of the HITC who would have otherwise not enrolled in health insurance. Even with a different data set, my results are very similar to that of C&W (column 1, Table 3) who estimated an increase in coverage rates of about 4.7 percentage points due to the HITC; this supports that tax credits for health insurance effectively increased the coverage for low income populations.

In addition to this, Appendix Table 1 shows the event history analysis where I disaggregated the HITC effect by years to explore whether the estimated HITC effect did have the same magnitude in all three years. This shows that the magnitude of the HITC effect on the outcome of interest changed over time during the HITC period. Further, leaving out the interaction term of 1989 and the treatment dummy, there was no significant pre-treatment effect in 1990, possibly supporting the validity of the common trend assumption. As we need an assumption that both treatment and control groups should experience a similar trend, if there were any significant effects on the treatment group before the HITC enactment (Ashenfelter Dip) (i.e. strategically postponing the purchasing insurance), it would overestimate the effect of the HITC.

Main Estimates from Equation (1)

<table>
<thead>
<tr>
<th>covered by private health insurance</th>
<th>main estimates</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
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<tbody>
<tr>
<td>Cebi et al. (2014)</td>
<td></td>
<td>WLS</td>
<td>OLS</td>
<td></td>
</tr>
<tr>
<td>Treat</td>
<td>-.128***</td>
<td>-.088</td>
<td>-.016</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.024)</td>
<td>(.071)</td>
<td>(.065)</td>
<td></td>
</tr>
<tr>
<td>During HITC</td>
<td>-.142***</td>
<td>-.019</td>
<td>-.033</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.001)</td>
<td>(.004)</td>
<td>(.040)</td>
<td></td>
</tr>
<tr>
<td>Treat*During HITC</td>
<td>.047***</td>
<td>.066*</td>
<td>.058</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.012)</td>
<td>(.038)</td>
<td>(.040)</td>
<td></td>
</tr>
<tr>
<td>State FE</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>21,152</td>
<td>2,755</td>
<td>2,780</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.336</td>
<td>0.406</td>
<td>0.400</td>
<td></td>
</tr>
</tbody>
</table>

Notes: (2) and (3) specifications include age, race, number of children, work status, unearned income, earned income, state unemployment rate, interaction term between treat group and state unemployment rate. State-clustered standard errors are in parentheses. Full set of covariates are available from the author.
In Table 4, I verify the robustness of the results by considering additional specifications. First, given that respondents may adjust their incomes in order to be eligible for the HITC (Elissa and Hoynes, 2006), I explore equation (1) without using income as a measure. While I exclude income controls, I consider education level and labor union membership instead. The results are in Table 4, columns 1-2; they are comparable to the results that include income (Table 3, columns 2-3).

Second, there were statewide reforms that may have differentially impacted both groups (i.e., state Aid to Families with Dependent Children reforms (AFDC) and state own-EITCs). AFDC was reformed by restricting time limits on welfare eligibility as well as adding work requirements that drew single mothers into the labor force. Also, several states implemented their own EITC standards during the HITC period. Changes in the EITC at the state level provide an additional source of exogenous variation by which to measure the impact of the credit on coverage (Baughman, 2005). As such, following C&W, in Table 4, columns 3-4 do not include states that had AFDC reform and columns 5-6 exclude states that had their own EITC benefits. Overall, though the magnitudes of effect slightly changed, Table 4 suggests that the responsiveness of the HITC on health insurance coverage rates is robust.

<table>
<thead>
<tr>
<th></th>
<th>covered by private health insurance</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>OLS</td>
<td>WLS</td>
<td>OLS</td>
<td>WLS</td>
<td>OLS</td>
<td></td>
</tr>
<tr>
<td>Treat</td>
<td>-.117</td>
<td>-.035</td>
<td>-.039</td>
<td>.048</td>
<td>-.100</td>
<td>-.029</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.090)</td>
<td>(.083)</td>
<td>(.076)</td>
<td>(.063)</td>
<td>(.089)</td>
<td>(.082)</td>
<td></td>
</tr>
<tr>
<td>During HITC</td>
<td>-.023</td>
<td>-.038</td>
<td>-.048</td>
<td>-.071</td>
<td>-.005</td>
<td>-.022</td>
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</tr>
<tr>
<td></td>
<td>(.042)</td>
<td>(.042)</td>
<td>(.043)</td>
<td>(.038)</td>
<td>(.045)</td>
<td>(.045)</td>
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</tr>
<tr>
<td>Treat*During HITC</td>
<td>.065</td>
<td>.061</td>
<td>.096**</td>
<td>.098***</td>
<td>.043</td>
<td>.037</td>
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<tr>
<td></td>
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<td>(.039)</td>
<td>(.040)</td>
<td>(.036)</td>
<td>(.044)</td>
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<tr>
<td>State FE</td>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>Observations</td>
<td>2,755</td>
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<td>2,352</td>
<td>2,372</td>
<td>2,485</td>
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<tr>
<td>R-squared</td>
<td>.356</td>
<td>.358</td>
<td>.366</td>
<td>.404</td>
<td>.350</td>
<td>.397</td>
<td></td>
</tr>
</tbody>
</table>

Table 4

Robustness Check

Notes: All specifications include age, race, number of children, work status, dummy for high school graduates and union membership, state unemployment rate, interaction term between treat group and state unemployment rate. (3) and (4) are the results based on the states that did not have welfare reform. (5) and (6) are the results based on the states that did not have own EITCs. State-clustered standard errors are in parentheses. Full set of covariates are available from the author.
2.1.2. Effects on Health Care Utilization

Using equation (1) with utilization as an outcome variable, Table 5 shows the effect of the HITC on the probability of visiting a physician (i.e., the extensive margin effects on care demand). Because the frequency of utilization can be confounded with the individuals’ health status, I define utilization as a visit to the physician at least once per year. The primary reason for this is that using the exact number of visits might lead to biased estimates of the effect of the HITC on health care utilization. As Currie (1996) explains, the estimates might be downward biased if the improved health status is an omitted variable: “Increase in insurance coverage rates may have increased access to hospital or physicians’ office visits, while they could have increased the use of preventive care, enhancing health status and reducing the demand for hospital care.” One way to mitigate this issue is by focusing on utilization that is explicitly preventive and unaffected by health status. Physicians’ visits for routine check-ups are recommended once a year for people of average age and health status. Therefore, I used at least one office visit per year as a proxy for health care utilization, since the absence of a visit to a physician in the previous year suggests a true access problem, regardless of health status.

To estimate the effect on utilization, I use the same control variable specification as Table 3; corresponding results are in Table 5, columns 1-2. Columns 3-4 use an alternative specification (i.e., excluding income measures, while including education and union membership). Overall, Table 5 displays the increase in coverage translated into a statistically significant increase in physicians’ visits. The magnitude and effect size are relatively large compared to the increase in coverage (6.6 percentage points). Therefore, it could be unreasonable to attribute this effect solely to the HITC. Additional contributing factors on utilization might include Medicaid and EITC expansions in the early 1990s.

<table>
<thead>
<tr>
<th>Table 5 Annual Office Visits from Equation (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office Visits (%)</td>
</tr>
<tr>
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</tr>
<tr>
<td>During HITC</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Treat*During HITC</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>State FE</td>
</tr>
<tr>
<td>Observations</td>
</tr>
<tr>
<td>R-squared</td>
</tr>
</tbody>
</table>

Notes: (1) and (2) specification includes age, race, number of children, work status, unearned income, earned income, state unemployment rate, interaction term between treat group and state unemployment rate. (3) and (4) specification excludes income controls but includes dummy for high school graduates and union membership. State-clustered standard errors are in parentheses. Full set of covariates are available from the author.
3. CONCLUSIONS

After several months of disputes to repeal the ACA, on March 24th, 2017, House Republicans pulled the proposed replacement plan. While many parts of the replacement plan are controversial, the reliance on tax credits is a central feature. As such, by replicating a previous study on the HITC, my results add to the evidence that offering tax credits is an effective method for increasing coverage and therefore, hold relevance for current debates around health policy.

The HITC did in fact lead to a coverage increase of about 6.6 percentage points. A 6.6 percentage point relative increase in coverage implies that the price elasticity of health insurance is calculated to be -0.8, which is greater than that of C&W (-0.42). To estimate price changes in health insurance for the HITC eligible individuals, surveys conducted by the U.S. Government Accountability Office were used. These estimates suggest that there was a 26 percent reduction in the price of health insurance for the HITC recipients in 1991. Therefore, the 6.6 percentage relative (to single women without children) increase described in this paper suggests a 20.8 percent increase in coverage among single mothers. In other words, without the HITC, only 31.7 percent of single mothers would have been covered compared to 38.3 percent with the HITC. However, it is important to explore why the effect was not larger. One possible explanation could be that the modest amount of the tax credit was not enough to incentivize eligible, low-income populations to enroll (GAO, 1994). If this is the case, then it is arguable that under the AHCA, which offers an even smaller credit than the ACA (and also the HITC if converted into current dollar value) to low-income populations, the financial burden will be greater for eligible people and enrollment in coverage will decrease further. In connecting these findings to the ACA and the AHCA, it is important to note that differences still exist between these plans and the HITC. For example, in 1991, the phase-out range starts from an annual income of over $11,250. However, under the current proposal, the phase-out range begins at $75,000 for single individuals (i.e., approximately $42,323 in 1991), and includes more people who have a relatively higher income.

The other possible explanation would be the insufficient outreach and publicity regarding the HITC. This problem is also documented with the ACA health insurance marketplaces, as about half a million fewer people signed up for insurance into 2017, under the Trump Administration, than would have with the level of outreach and publicity that was seen under the Obama Administration. The third possible reason would be the liquidity constraint (i.e., cash-flow problems for low income families) resulting from timing mismatch. The mismatch between the timing of tax credits offered and that of insurance premium payments could exacerbate liquidity constraint problem. It means that even though the HITC eligible people would like to receive the tax credit benefits, as they only received their credit after filing their tax returns, they might more likely to face liquidity problems. This left them unable to take advantage of the tax credits (Gruber, 2000).

The finding that there was a non-statistically significant increase in utilization under the HITC following the increase in enrollment suggests that,
for low-income families, the inability to get coverage would be one of the primary barriers to truly being able to access preventive care. This demonstrates that tax credits for insurance premiums might also be effective at increasing health care utilization. Moreover, given this modest increase, it is reasonable to expect that under the AHCA, with an anticipated decrease in enrollment, resulting from smaller subsidies for low income populations, utilization is also likely to decrease.

Considering the aforementioned results and their respective implications, an empirically informed argument for tax subsidies can be made. However, policy makers are cautioned against the following: (1) assuming that all subsidies will have similar effects on enrollment and utilization, and (2) that subsidies can be conceptualized without regard for how they intersect with various elements of the broader policy. The HITC provides an excellent historical case study for these cautions, because despite its relative success, due to a lack of appropriate regulations, it was ultimately repealed on Dec 31st, 1993. Similar to what was proposed in the AHCA (i.e., removing 10 Essential Health Benefits of the ACA), the HITC did not specify minimum benefits that must be included in insurance plans, enabling insurance companies to abuse this policy and sell valueless plans to tax credit eligible individuals (Sanger-Katz, 2017). Therefore, for tax credits to be a true incentive to increase health care coverage, they must be implemented in tandem with appropriate market regulations.

Overall, this paper provides evidence that tax credits are an effective mechanism for increasing health insurance coverage and utilization. It serves as a case study for exploring how tax credits operate in conjunction with larger health care policy. While specific contexts should be considered, these findings can be extrapolated in further analyses exploring current and future health care policies.

REFERENCES


[9] Sanger-Katz, Margot (2017, March, 23), Late G.O.P. Proposal Could Mean Plans That Cover Aromatherapy but Not Chemotherapy,


Appendix Table 1: Event History Analyses

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<td>(.080)</td>
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<td>Treat*1993</td>
<td>.059</td>
<td>.055</td>
</tr>
<tr>
<td></td>
<td>(.057)</td>
<td>(.053)</td>
</tr>
<tr>
<td>State FE</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Observations</td>
<td>2,755</td>
<td>2,780</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.407</td>
<td>0.401</td>
</tr>
</tbody>
</table>

Notes: (1) and (2) are event history analyses and include year dummies from 1989 to 1993. State-clustered standard errors are in parentheses.
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PUBLIC DEBT DYNAMICS AND POSSIBILITIES FOR ITS PROJECTION – THE CASE OF THE REPUBLIC OF MACEDONIA

Original scientific paper  
UDK: 336.27(497.7)  
JEL classification: H63

Abstract

In case when an economy of a country is in crisis, the country by indebting itself creates a possibility of taking some investment projects into realization all for the purpose of having them act as stimulators of the economy. Excessive indebting or the irrational use of borrowed funds can have negative consequences for both the domestic economy and the future generations as well. Thus, it is of great significance to determine public debt dynamics and to establish basis for giving projections of its trends in future. The projections about the trends of the economic variables represent very complex operations. For the purpose of making such projections, the economics relies on econometric modeling. These projections are further subjected to additional practical and theoretical processing all for the purpose of obtaining as relevant and as precise results as possible. The research gives a detailed analysis of the public debt dynamics and its structure in the Republic of Macedonia for a period of 16 years. Then, a close inspection is given to the way certain factors influence the public debt in order to project its trend in the future by making use of an econometric model. The projections obtained in this manner can further represent a basis for further decision-making on behalf of the fiscal policy makers in the country.

Keywords: public debt, dynamics, Republic of Macedonia
1. INTRODUCTION

In many countries public debt grows steadily posing danger to their macroeconomic stability. In countries where the growth of public debt turns into a debt crisis, there is a risk of major disruptions and economic problems. However, paradoxically, it is because of a range advantages that shows public debt compared with taxation that many countries are not willing to give it up. Namely, public debt is an important source of public income, especially in periods of extremely high but short-term needs for Government spending.

Given the foregoing, it is clear that no one should see only the negative aspects of public debt. Namely, with the assistance of public debt, many countries were rescued when their economies faced war, political unrest or social problems. Also, it is well known that public debt is a segment of the complex structure of fiscal policy, which is a very important determinant of economic growth of any country. The belief that taxation, public debt, public investments and other aspects of fiscal policy can contribute to growth and cause stagnation is implemented in a number of models that have studied economic growth of developing countries over the past few decades (Aristomene 2007, p. 320).

The main goal of this paper is to study the dynamics of public debt of the Republic of Macedonia and the possibility of its projection in the near future, while putting emphasis on some of its features. The research covers the period 2000-2016. In this time framework, the public debt is viewed from the point of view of public finances. At the beginning of the paper, a brief overview of the impact of public debt on the economy will be given. Then, the focus will be on analyzing the dynamics of public debt in the time series of sixteen years. Finally, by creating econometric model an attempt to perceive the possibility of its forecasting will be made.

In the context of research analytical and synthetic approach and deductive method were applied. In order to strengthen the relevance of the research, secondary data sources were used.

2. PUBLIC DEBT AND ITS REFLECTION ON THE ECONOMY

In modern economic theory prevails the opinion that public debt is negative phenomenon with adverse effects on the economy. Modern fiscal theory suggests two negative consequences of public debt (Atanasovski, 2004, p. 60)

− First, public debt is to be paid by future generations despite the fact that they neither decide nor contribute to its occurrence;

− Second, public debt is a negative phenomenon because it causes the problem of crowding out the private sector in the field of investments.

There are several ways of crowding out the businesses’ investments (Gevorkyan, 2011, p. 66)
− If the Government makes large budget deficits and accumulates debt, it automatically means that it is wrong, and it invests more than the companies (business sector);
− If the Government makes budget deficits that will be covered by taking loans, this consequently shall result in raised interest rates. High interest rates discourage companies to invest because the loans are now more expensive;
− In a case when the Government covers deficits (liabilities arising from public debt) through the issue of bonds, the citizens and households will buy bonds because they have greater security, instead of investing their savings in private businesses.

3. THEORETICAL APPROACH TO PUBLIC DEBT

The significance of public debt is especially true in the early 19th century when it gradually begins to make concessions to the rule of equilibrium and classical theories of public debt that had a strong negative attitude and a great resistance to public debt treating it as threat to the economy. Modern financial theories fundamentally change the view of public debt. For the classic economic school, public debt was a key element of the budget balance, but modern financial theory created new active role of public debt. In this sense, now the public debt is used not only for financing budget deficit, but stabilization, development and redistributive function were attributed to public debt as well. Modern economic theory treats public debt as regular source of public revenue such as taxes.

However, disagreements among economists about the positive and negative effects of public debt continue nowadays. According to Elmendorf and Mankiw (1999, p. 20), high public debt has a positive impact on disposable income, aggregate demand and aggregate output. These positive effects of public debt are greater when real output in the economy is far from the potential one.

On the other hand, Cochrane (2011, p. 19), indicated that the negative impact of public debt could be much greater if the high public debt increases uncertainty about the future or leads to incitement of inflation and financial repression. According to him, high public debt could have negative effects in the long and short term.

Westphal, Hallett and Rother (2012, p. 11) developed a theoretical model in which over the business cycle, debt can be used only to finance public investment, and the optimal level of public debt is determined by the relationship between the public and private capital. This model results in stimulation of economic growth. They found that the level of public debt that maximizes economic growth is a function of the elasticity of output of the changes in equity.

According to Greiner (2012, p. 65), permissive policies of public debt lead to monotonous and negative relationship between public debt and stable economic growth. The effect of debt on growth depends on the presence of rigidity of wages and unemployment in the economy. Greiner showed that in a model with elastic
labor supply and lack of rigidity of wages in the economy, public debt has negative
effects on labor supply, investment and on economic growth. In the presence of
wage rigidity and unemployment, public debt has no effect on the allocation of
resources, but if it is used to finance productive investments, it can have positive
effects in the economy as a whole.

4. DYNAMICS OF PUBLIC DEBT

Public debt portfolio of the Republic of Macedonia consists of: government
debt and all financial obligations of municipalities and city of Skopje (capital of the
Republic of Macedonia, with different status from other municipalities), as well as
public enterprises.

After its independence in 1991, Republic of Macedonia succeeded part of
the financial obligations of former Yugoslav federation according to her membership.
The road to settling these obligations was difficult and long. It took many years for
the Macedonian economy to stand on its feet.


Since gaining the independence until 2002, the public debt of the central
Government was relatively moderate and ranged at around 40% of GDP. From
2003 it began to decrease gradually. It was due to cautious fiscal policy and good
coordination between monetary and fiscal policy that was typical for the period after
2004. In fact, in 2006 the Government managed to restore much of its financial
obligations while significantly reducing public debt. One of the main objectives of
the Government in this period was the reduction of the share of external debt at the
expense of domestic debt, in order to improve the debt portfolio of the country and
to provide funds at the lowest cost and risk.

Fiscal policy in 2007 aimed at encouraging economic growth by stimulating
aggregate supply and demand. It is in this year that the situation was characterized by achieving significant budget revenues among which the most important was the concession inflow of 609 million denars (around 10 million euros) from the issuance of the operating license for the third mobile operator in Macedonia. Thus, in 2007 the share of public debt in GDP reduced to 24% which is significantly below the EU countries threshold.

The public debt of the Republic of Macedonia in 2008 was further reduced and amounted to 20.6% of GDP. It was the lowest level of public debt of the central Government since independence.

In 2009, there was interrupted the several-year trend of reducing public debt, because that year public debt increased by 211.6 million euros. Consequently, at the end of the year, it reached 23.8% of GDP. However, despite the slight increase of 3.2 percentage points compared to 2008, the public debt of the Republic of Macedonia in 2009 remained at a level much below the Maastricht criterion, according to which the debt must not exceed 60% of GDP.

The motion of public debt in 2009 was under influence of continued implementation of public projects in the sectors of: education, construction of housing for disadvantaged citizens, agriculture, health, road infrastructure, railroads and energy. In terms of currency structure of public debt, the predominated part of it (i.e. 65%) was denominated in euro.

In global terms, a feature of fiscal policy in 2010 was the beginning of the consolidation process. Thus, the focus of fiscal policy was flown by stimulating demand to gradually narrowing the budget deficit and reducing public debt. Central government debt in 2010 compared to 2009 increased by 0.4 percentage points and reached 24.2% of GDP.

Cautious nature of fiscal policy was maintained in the course of 2011 keeping up stable and relatively low budget deficit and relatively low level of public debt which still registered growth. The need for financing budget deficit conditioned moderate growth of public debt which continued to be held low at 27.8% of GDP.

In 2012, there was realized a budget deficit of 3% of GDP, which represented an increase of 0.5 percentage points compared to the previous year. The growing need for deficit financing conditioned further growth of public debt which at year-end was 34% of GDP.

Fiscal policy supported the recovery of the domestic economy in 2013 too. This year the central Government debt increased by 1.9 percentage points and accounted for 35.9% of GDP.

In the period 2014-2016, there was a continuous increase in public debt. So in 2016, the central Government debt increased and amounted to 39.1% of GDP while total public debt was around 47.8% of GDP. The growth of public debt in these three years was a result of increased public investment in infrastructure, the growth of wages of public administration, an increase in pensions and increase in the volume of subsidies allocated in the economy.
Throughout the reporting period, an important feature of public debt in Macedonia is the absolute dominance of foreign versus domestic public debt. In fact, in all the other years external debt is almost twice the inner.

5. MODELING PUBLIC DEBT OF THE REPUBLIC OF MACEDONIA

The level of public debt is influenced by many factors, with greater or lesser intensity, positive or negative direction. Hence in this part a model of impact of selected economic factors on the public debt will be created. Later on, this model could be used to predict the public debt movement.

The multiple regression model was used to study the impact of budget deficit or surplus, inflation and trade openness on the public debt of the central Government in the country. The model has the following form:

\[ PD = C + \beta_1 + \beta_2 + \beta_3 + u, \]  

where:

- PD – public debt
- C – constant
- \( \beta_1 \) – budget balance
- \( \beta_2 \) – trade openness
- \( \beta_3 \) – inflation rate
- u – residual.

Such a defined model will be subjected to examination whether it meets the basic assumptions under which it is valid and can be used for forecasting.

<table>
<thead>
<tr>
<th>Year</th>
<th>Public Debt</th>
<th>Budget Balance</th>
<th>Trade Openness</th>
<th>Inflation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>48.1</td>
<td>2.5</td>
<td>92.9</td>
<td>5.8</td>
</tr>
<tr>
<td>2001</td>
<td>48.8</td>
<td>-6.3</td>
<td>82.6</td>
<td>5.5</td>
</tr>
<tr>
<td>2002</td>
<td>42.9</td>
<td>-5.6</td>
<td>80.4</td>
<td>1.8</td>
</tr>
<tr>
<td>2003</td>
<td>37.9</td>
<td>-1</td>
<td>75.2</td>
<td>1.2</td>
</tr>
<tr>
<td>2004</td>
<td>35.6</td>
<td>0</td>
<td>81.4</td>
<td>-0.4</td>
</tr>
<tr>
<td>2005</td>
<td>38.4</td>
<td>0.2</td>
<td>85.9</td>
<td>0.5</td>
</tr>
<tr>
<td>2006</td>
<td>32</td>
<td>-0.5</td>
<td>92.7</td>
<td>3.2</td>
</tr>
<tr>
<td>2007</td>
<td>24</td>
<td>0.6</td>
<td>103.2</td>
<td>2.3</td>
</tr>
<tr>
<td>2008</td>
<td>20.6</td>
<td>-0.9</td>
<td>107.3</td>
<td>8.3</td>
</tr>
<tr>
<td>2009</td>
<td>23.8</td>
<td>-2.7</td>
<td>81.3</td>
<td>-0.8</td>
</tr>
<tr>
<td>2010</td>
<td>24.2</td>
<td>-2.4</td>
<td>92.1</td>
<td>1.6</td>
</tr>
<tr>
<td>2011</td>
<td>27.8</td>
<td>-2.5</td>
<td>107.2</td>
<td>3.9</td>
</tr>
<tr>
<td>2012</td>
<td>34</td>
<td>-3</td>
<td>78</td>
<td>-1</td>
</tr>
<tr>
<td>2013</td>
<td>35.9</td>
<td>-4.1</td>
<td>87</td>
<td>2.8</td>
</tr>
<tr>
<td>2014</td>
<td>38.1</td>
<td>-3.5</td>
<td>113.9</td>
<td>-0.3</td>
</tr>
<tr>
<td>2015</td>
<td>38.1</td>
<td>-3</td>
<td>121.9</td>
<td>-0.3</td>
</tr>
<tr>
<td>2016</td>
<td>39.1</td>
<td>-0.3</td>
<td>114.3</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Notes: amounts are given in % of GDP (excluding inflation)
Table 1 lists data on public debt of the central Government in Macedonia and the factors that affect it. The analysis of the model will be conducted using the econometric software EViews.

It is well known that for a model to be qualified as relevant and in order to be used for forecasting, it should be examined following its features:

1. Is there a problem of multi-collinearity between individual variables or whether there is a linear function between the independent variables.
2. Whether the model is well specified;
3. Is there a correlation between residual standard sizes (autocorrelation);
4. Whether there is a problem of heteroskedasticity.

Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>107.88</td>
<td>21.14</td>
<td>5.10</td>
<td>0.0005</td>
</tr>
<tr>
<td>BUDGET_BALANCE</td>
<td>0.51</td>
<td>0.19</td>
<td>2.69</td>
<td>0.0224</td>
</tr>
<tr>
<td>INFLATION_RATE</td>
<td>2.45</td>
<td>0.91</td>
<td>2.69</td>
<td>0.0224</td>
</tr>
<tr>
<td>TRADE_OPENNESS</td>
<td>-0.88</td>
<td>0.24</td>
<td>-3.62</td>
<td>0.0047</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations with the program EViews.

After inserting the data, the model receives the following form:

Public debt = 107.88 + 0.51 x budget – 0.88 x trade openness + 2.45 x inflation.

One of the assumptions of multiple regression model is that none of the independent variables is a linear function of other independent variables i.e. that there is no problem of multi-collinearity. This means that there should be a linear relationship between the budget, inflation, external debt and trade openness of the country.

If t-statistics of the resulting model is greater than the selected critical value then the estimated coefficient is said to be statistically significant i.e. it is a proof that the coefficient is different from zero (Bucevska, 2009, p. 83).

The greater the P-value is the less significant independent variables are, or more precisely if the probabilities are greater than 0.05 (5%) then the variables are insignificant (Hansen, 2016, p. 72).

Observing the new probabilities of independent variables it can be concluded that two out of three variables have value less than 0.05, and that they are
significant i.e. they have significant impact on public debt. If implemented in practice, this means that inflation and trade openness have the greatest impact on the public debt in the Republic of Macedonia.

Having in mind the previously mentioned, it can be concluded that there is a strange and ambiguous situation where the budget balance does not have a significant impact on the public debt of the Republic of Macedonia. Namely, the budget deficit has less influence on the debt compared to the two other factors. However, in this context it should be emphasized that the political factor has played a dominant role in the observed period on one hand, and the borrowing from the Government for the same period was not strictly determined by the amount of the budget deficit, on the other hand.

5.1. Specification of the Model

The coefficient of determination (R-squared) in the model was 58.3%, which is close to the normal limit of 60%. This is a basic signal that the model is well specified.

When talking about the specification of the models, it is very important to choose the right number of variables. For this purpose, in our case there will be used Akaike (AIC) and Schwarz (SC) criteria. When applying these criteria, more specifications or versions of the model should be tested with a different number of degrees of freedom. The main goal is to choose the best variant. Best version of the model will be one that has minimum value under both criteria. The lower the value of these two criteria in the model is, the model will be more accurate and the results arising from it will be more reliable (Nikoloski, 2013, p. 18).

For this purpose, testing of the model with one, two and three independent variables was performed. The first version of the model tested the impact of the budget on public debt. In the second option, the impact of inflation on the public debt was included, and the third model further included foreign trade openness of the country.

Table 3

<table>
<thead>
<tr>
<th>Model</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Include</td>
<td>Budget</td>
<td>Budget and Inflation</td>
<td>Budget, Inflation and Trade openness</td>
</tr>
<tr>
<td>AIC</td>
<td>7,420</td>
<td>7,556</td>
<td>6,86</td>
</tr>
<tr>
<td>SC</td>
<td>7,512</td>
<td>7,693</td>
<td>7,043</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations with the program EViews.

Looking at the three variants of the model, it can be concluded that the third variant which includes three factors has the lowest value under both criteria. Therefore, this model is the best i.e. the most precise one and its results would be relevant. In other words, the best would be our ideal model to include three independent variables: inflation, budget deficit/surplus and trade openness of the country.
Based on the analysis of the final model we can point out that budget balance and inflation are directly correlated to the public debt, whereas the trade openness is inversely correlated to public debt.

In empirical literature there is considerable number of studies that has offered supporting evidence for the positive relationship between trade openness and foreign debt. For instance, Lane (2000, p. 56) empirically examined the determinants of external debt for 87 developing countries using data for the 1970-1995 period, and the results indicated that trade openness had a positive effect on external debt.

According to Combes and Sedic (2002, p. 12) trade openness increases country’s exposure to external shocks (even if it is due to ‘natural’ openness or to trade policy). This enforces the negative impacts of the instability of terms of trade on budget balance. In addition, trade openness affects budget balance through many others channels. In this case, the additional effects on budget position of natural openness and trade policy are opposed. Trade policy seems to enhance budget surpluses. In the opposite case, natural openness seems to deteriorate budget deficits.

Bearing in mind all the previously mentioned the situation in the Republic of Macedonia regarding the observed period of time and under given preconditions could be seen as an inverse relationship between trade openness and the budget deficit. This is controversial to the knowledge acquired from most empirical researches in this field. In order to find the reasons for this, we need further investigation of the factors that affect trade openness of our economy.

Bildirici and Ersin (2007, p. 34) studied the relationship between inflation and domestic debt of nine countries for the period 1980-2004 using MOLS (Fully Modified OLS estimation) and VEC model. The results show that in countries that experience high inflation, inflationary process, in fact fed on increasing costs of domestic debt. As a result, the increasing debt to GDP ratios led these countries to borrow at higher interest rates and with lower maturity rates.

Lopes (2014, p. 123) analyzed the implications of public debt on economic growth and inflation in a group of 52 African economies between 1950 and 2012. By using time series of historical data for that period (1950-2012), he got results that indicate public debt has a positive impact on inflation. It means that high public debt leads to high inflation.

Based on the results obtained from the regression model, we can highlight the following conclusions:

1. If the budget grows by Euro 1 million, the public debt will rise to 513,639 Euros.
2. If trade openness decreased by Euro 1 million, the public debt would rise to 888,704 Euro.
3. If inflation increases by 1 percentage point public debt will increase by 2,454,139 Euro.

Of course, these conclusions were based on theoretical results of the econometric model. Their accuracy and relevance in practice remains to be tested by further research in this area.
**Autocorrelation**

When it comes to residuals, it is essential to examine whether there is serial correlation between them, or whether there is a problem of autocorrelation. Autocorrelation is a correlation between stochastic members of the model (Wooldridge, 2002, p. 455). For its examination Breusch-Godfrey serial correlation LM test was used.

**Table 4**

<table>
<thead>
<tr>
<th>LM-test for Serial Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breusch-Godfrey Serial Correlation LM Test:</td>
</tr>
<tr>
<td>F-statistic</td>
</tr>
<tr>
<td>Obs*R-squared</td>
</tr>
</tbody>
</table>

**Test Equation:**
Dependent Variable: RESID
Method: Least Squares

Source: Authors’ calculations with the program EViews.

The value of this test is 0.299. Since the resulting value is less than the critical value of $\chi^2 (0.05) (2) = 5.991$, it can be concluded that there is no autocorrelation in the model.

**Heteroskedasticity**

Another prerequisite for the relevance of the classical regression model refers to random errors in the regression equation. Namely, they should have the same variance. When this assumption is violated i.e. when random errors have different variances then the problem of heteroskedasticity arises. To test this issue the Breusch-Pagan-Godfrey test was used.

**Table 5**

<table>
<thead>
<tr>
<th>Testing Heteroskedasticity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heteroskedasticity Test: Breusch-Pagan-Godfrey</td>
</tr>
<tr>
<td>F-statistic</td>
</tr>
<tr>
<td>Obs*R-squared</td>
</tr>
<tr>
<td>Scaled explained SS</td>
</tr>
</tbody>
</table>

**Test Equation:**
Dependent Variable: RESID^2
Method: Least Squares

Source: Authors’ calculations with the program EViews.

The statistics of this test is 1.552. Because the resulting value of the test is less than the critical value (5.991), the conclusion is that the model has no heteroskedasticity or random errors in the regression equation have the same variance.
5.2. Forecasting

One model has no significant value if it cannot be used for forecasting future developments of different economic variables. In this context, the next step in the research was to analyze the possibility for forecasting the dynamics of public debt in the future by means of the resulting model.

Given the fact that the economic environment is very complex and dynamic, it is very difficult to predict the movement of an economic variable. Hence, economic theory uses various models in order to obtain initial estimates on the dynamics and development of such variables. Of course, these estimates remain subject to practical and theoretical conclusion in order to obtain more accurate and more relevant results.

In our case, in order to check the model, there was acceded to the so-called ex-post forecasting using time series data from 2000-2016. Namely, based on movements of public debt in a time interval of the mentioned period, attempt was made to predict the dynamics of the public debt in the next time interval, again within the past period. In other words, based on the movement of debt from 2000-2013, a forecasting for the movement of public debt for the period 2014-2016 was made.

Firstly, the model for the period 2000-2013 was considered.

<table>
<thead>
<tr>
<th>Table 6</th>
</tr>
</thead>
</table>

Model of public debt with the factors that affect it (2000-2013)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>107.8881</td>
<td>21.14197</td>
<td>5.103028</td>
<td>0.0005</td>
</tr>
<tr>
<td>BUDGET_BALANCE</td>
<td>0.513639</td>
<td>0.819946</td>
<td>0.626430</td>
<td>0.5451</td>
</tr>
<tr>
<td>INFLATION_RATE</td>
<td>2.454139</td>
<td>0.910061</td>
<td>2.686676</td>
<td>0.0224</td>
</tr>
<tr>
<td>TRADE_OPENNESS</td>
<td>-0.888704</td>
<td>0.245244</td>
<td>-3.623754</td>
<td>0.0047</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.593152</td>
<td>Mean dependent var</td>
<td>33.95714</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.466097</td>
<td>S.D. dependent var</td>
<td>9.028137</td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>6.645975</td>
<td>Akaike info criterion</td>
<td>6.680956</td>
<td></td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>441.6699</td>
<td>Schwarz criterion</td>
<td>7.043444</td>
<td></td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-44.02599</td>
<td>Hannan-Quinn criter.</td>
<td>6.843954</td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>4.663194</td>
<td>Durbin-Watson stat</td>
<td>1.450474</td>
<td></td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.027498</td>
<td>Source: Authors’ calculations with the program EViews.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Since the major problem in case of the Republic of Macedonia is the availability of reliable economic data, we limited our analysis to a total of 14 observations. Namely, we did not have data for all the observed parameters before 2000 as well as semi-annual or quarterly data for the observed period of time.

If the new model has neither serial correlation nor heteroskedasticity and if the residuals are normally distributed then it can be used for forecasting.
future trends of public debt. Two of the three independent variables (inflation and trade openness) are significant because their probabilities are less than 5%. Also F-statistic model is good because it is less than 5%. Also it is good that the value of R-squared is close to 60%, i.e. it amounts to 58.31%. It remains to investigate further whether there is serial correlation in the model.

Table 7

<table>
<thead>
<tr>
<th>Breusch-Godfrey Serial Correlation LM Test:</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
</tr>
<tr>
<td>Obs*R-squared</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations with the program EViews.

From Breusch-Godfrey LM test a conclusion can be drawn that the value of the F-statistic is 0.29 and it is lower than the critical value $\chi^2$ timetable (5,991). Consequently, there is no serial correlation in the model. The new model is relevant because there is no problem of heteroskedasticity and it can be used for forecasting.

Based on the new model, assumption can be made about the level of public debt for the period 2014-2016.

Figure 2 Forecasting of public debt (2014- 2016)

Source: Authors’ calculations with the program EViews.

The blue line on the Figure 2 represents the estimated value of public debt for the reporting period of three years (2014-2016) while the red dotted lines represent the confidence interval of 95% (this means that the predicted values will be accurate to within 95%).

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The blue line passes in the middle between the two red lines (i.e. two standard deviations) suggesting that the resulting model is satisfactory for forecasting or the power of the regression model to predict is very good.

The Root mean squared error is 5.208. Because this value is not very high, it can be concluded that the ability to forecast with a help of the model is satisfactory.

With the help of the previous analysis, forecasted values for public debt were obtained. The next step was to observe only real values of public debt and its forecast values. If the values for the particular variable and its estimation have approximate amounts, then the model is suitable for forecasting (Greene, 2012, p. 325).

Table 8

Public debt observations and its predicted values (2000 – 2016)

<table>
<thead>
<tr>
<th>Observations</th>
<th>Public debt</th>
<th>Public debt f</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>48.1</td>
<td>NA</td>
</tr>
<tr>
<td>2001</td>
<td>48.8</td>
<td>NA</td>
</tr>
<tr>
<td>2002</td>
<td>42.9</td>
<td>NA</td>
</tr>
<tr>
<td>2003</td>
<td>37.9</td>
<td>NA</td>
</tr>
<tr>
<td>2004</td>
<td>35.6</td>
<td>NA</td>
</tr>
<tr>
<td>2005</td>
<td>38.4</td>
<td>NA</td>
</tr>
<tr>
<td>2006</td>
<td>32</td>
<td>NA</td>
</tr>
<tr>
<td>2007</td>
<td>24</td>
<td>NA</td>
</tr>
<tr>
<td>2008</td>
<td>20.6</td>
<td>NA</td>
</tr>
<tr>
<td>2009</td>
<td>23.8</td>
<td>NA</td>
</tr>
<tr>
<td>2010</td>
<td>24.2</td>
<td>NA</td>
</tr>
<tr>
<td>2011</td>
<td>27.8</td>
<td>NA</td>
</tr>
<tr>
<td>2012</td>
<td>34</td>
<td>NA</td>
</tr>
<tr>
<td>2013</td>
<td>35.9</td>
<td>NA</td>
</tr>
<tr>
<td>2014</td>
<td>38.1</td>
<td>38.9458</td>
</tr>
<tr>
<td>2015</td>
<td>38.1</td>
<td>37.9324</td>
</tr>
<tr>
<td>2016</td>
<td>39.1</td>
<td>38.9562</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations with the program EViews.

The analysis shows that over the last three years of the analyzed period (2000-2016), the real values of public debt and their estimation (forecast public debt) are very close. This is yet another signal that the resulting model is good for forecasting.

Our prediction analysis could be further developed. Based on the forecasted values of factors affecting public debt (budget balance, trade openness and inflation), the dynamics of public debt in the forthcoming years could be predicted, or on the basis of the current movement of public debt, its trends in the near future could be forecasted. Of course, this will be subject to processing in our next economic analysis and research.
6. CONCLUSION

During economic recession, Government usually tries to borrow finance in order to stimulate realization of investment projects that will positively affect the national economy. However, if the limits in borrowing are exceeded or if those funds are used irrationally and unproductively, then the consequences would be devastating for the domestic economy and for the future generations too (Fiti, 2008, p. 18).

Our model proved good opportunities for forecasting the future movements of public debt. Of course, with the help of further research, it is needed to address and study the impact of other potential factors on public debt in order to comprehensively test the relevance and accuracy of the conclusions reached.

Considering the current situation and the impact of a range of political and socio-economic factors in the country, our estimate of the level of public debt of the central Government in 2017 is approximately 40% of GDP. Of course, the analysis of the level of public debt must not overlook the fact that the process of borrowing should be economically justified i.e. the borrowed funds should be used for productive purposes with potential positive economic effects on the economy. Otherwise, borrowing for unproductive purposes will push the economy into a dangerous zone which is fatal not only for the present, but for future generations too.

Excessive spending of modern governments is a threat to the welfare of future generations, with increasing pressure on fiscal policy in a globalized world. Therefore the governments must reasonably plan the structure and volume of public debt and the reasons for its occurrence.

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ECONOMIC AND SOCIAL IMPACT OF
ALCOHOL TAXATION IN THE BALTIC COUNTRIES

Original scientific paper
UDK: 336.226.331:663.5
JEL classification: H21, H30, F13

Abstract

This paper is focusing on alcohol taxation in the Baltic countries. The purpose of the study is to demonstrate alcohol taxes regressive characteristics across various income groups. Alcohol taxation is rather sensitive issue in the Baltic countries – alcohol consumption level is relatively high and public sector revenue depends significantly from alcohol related taxes. Therefore, a system of alcohol taxation in the Baltic countries should consider multiple aspects, such as taxation’s social impact, public sector revenue and other theoretical foundations for allocating alcohol taxes over different income groups. Paper’s statistical analyses is conducted on the basis of a consumer survey, carried out in all three Baltic countries during 2015-2016. As the study results demonstrate, alcohol taxation is regressive in the Baltic countries and the future tax policy should consider the above-mentioned taxation principles.

Keywords: alcohol taxation, tax burden, tax progressivity
1. INTRODUCTION

Alcohol related issues are emotional matters in most of societies. There are many different layers related with alcohol consumption – cultural, healthcare, anti-social behavior, and many other.

This paper analyses alcohol related taxation in the Baltic countries. Namely, the study focuses on alcohol excises and VAT burden allocation over different income groups in the Baltic societies. Expectedly, the alcohol taxes are regressive - lower income earners spend relatively more on their income on alcohol and accordingly, pay relatively more alcohol taxes. Differently, alcohol taxes cover slighter share in the higher income earners’ budgets.

Why is regressive nature of alcohol taxation an important issue for societies? It is important because the tax allocation has an impact on consumption structure, consumer’s behavior, social fairness, public budget revenue and society’s wellbeing.

Generally, there are several type of taxes levied on alcohol production and consumption. In large, a system of alcohol taxation combines per unit and ad valorem taxation principles. In the first case, a tax is imposed on a specific amount for each unit of product (e.g. per hectoliter). In the second case, the tax is levied based on the value (price) of the product.

In this paper, we study alcohol excise duties and value added tax (VAT) burden in the Baltic societies. Alcohol excise duties are used in all European Union countries; even more, alcohol excise duties are harmonized by rate and calculation methods over the EU. Same applies to the VAT – the EU has established minimum levels and other aspects related with that tax.

Alcohol taxation is a sensitive and important issue in the Baltic countries. To design efficient alcohol taxation system should be considered different taxation effects on consumption, social behavior and fiscal situation. This paper evaluates alcohol related taxes regressivity to understand what is tax policy impact on economy and society.

The paper is structured in a following manner. In the first part will be given a short theoretical overview of the excise taxation. Then will be given an overview of alcohol consumption and markets in the Baltic countries. In the second part of the paper will be carried out statistical analyses to estimate alcohol taxes regressivity.

The statistical data and correlation analyses relies on ICAP(IARD) survey results, which was carried on in the Baltic countries during 2015-2016. The US based institution ICAP (International Centre for Alcohol Policy, now renamed IARD (International Association for Responsible Drinking), conducted a survey of alcohol consumption pattern in the Baltic countries. There was altogether 3777 respondents, distributed over all three Baltic countries. The survey sample represents the Baltic societies social and demographic structure (by age groups, nationality, income, other).
2. ALCOHOL MARKETS AND TAXATION IN THE BALTIC COUNTRIES

2.1. Alcohol Excise Duties: Some Theoretical Aspects

There are several important issues, why alcohol consumption is heavily taxed in most of countries. By alcohol taxes here are considered excise duties as specific form of alcohol taxation and value added tax (VAT).

Three important components related with alcohol taxes could be emphasized. First, alcohol excise duty is a kind of compensation, which partly covers the cost caused by excessive alcohol consumption. Alcohol excise duty is a kind of Pigouvian tax, levied on the activity, which generates negative externalities and is harmful for the society. For example, negative externalities related with alcohol consumption are various accidents, health problems, anti-social behavior and decrease of economic productivity.

Second, alcohol excise duty is considered an instrument, which shapes consumer behavior and attitudes. High excise duty and, accordingly, higher alcohol price, limits consumers’ accessibility to alcohol and harmful over-consumption. Therefore, alcohol excise duties are an instrument to correct and direct social behavior. Too heavy alcohol taxation may force consumers to look for cheaper alternatives, mainly alcohol consisting surrogates. Such a behavior may cause even more damage to persons’ health and society’s wellbeing.

Third, alcohol excise duties are efficient fiscal instrument to collect public tax revenues. They are simple to administer, products are easy to identify, there are few producers and the product is relatively price inelastic (Cnossen, p. 279). Also, in tax theory well-known Ramsey rule applies rather directly here.

However, there are also important complicated issues associated with alcohol taxation. One of them is alcohol taxes’ regressivity. Lower income persons pay relatively bigger share out of their income in case of purchasing alcohol than comparatively wealthier consumers do. Regressively distributed alcohol taxation burden “may bear disproportionately heavily on poorer households” (Crawford, 2010, p. 327). Low-income earners’ spending shift towards alcohol products, on the expense of other socially beneficial goods, may cause harm on that social group. A low-income consumer allocates its limited consumer budget over a bundle of goods, which might be not socially optimal. Individual consumers’ choices may be in conflict with societal preferences.

Alcohol duties regressivity aspects have been studied by different researchers (e.g. Lowry, 2014, Lyon and Schwab, 1995, Levell, O'Connell and Smith, 2016). Those authors point out, that by their analyses alcohol taxes are generally regressive. Usually authors consider income deciles and share of alcohol consumption over income earners’ groups. In accordance with alcohol consumption pattern and levels are calculated alcohol tax obligations over income groups.

However, “studies for the US have found that alcohol taxes appear substantially less regressive when a longer time frame is used for analysis than
when analysed on the basis of current income (Crawford, 2010, p. 328, Potreba 1989, p.12). Similarly, alcohol excise duties are more regressive in comparison with income, but less regressive in comparison with actual spending (Levell, O’Connell and Smith, 2016). Therefore, it is rather important to describe the conditions, under which regressivity of alcohol taxes is estimated. In the current study, alcohol tax burden distribution across the income groups covers the same period in all three Baltic countries.

2.2. Overview of Baltic States alcohol market and consumption pattern

Alcohol consumption and taxation has some particularities in the Baltic countries. First, alcohol consumption is relatively intensive and massive in the Baltic countries. By the WHO data, the Baltic nations are drinking heavily; both in the European and global context (see Table 1). Such a situation, with all its negative consequences, is definitely a troubling issue for the societies. Therefore, the alcohol taxation system should be designed in a way, which limits harmful over-consumption and supports compensation of social cost, caused by the excessive alcohol consumption.

Second, the healthcare situation, traffic accidents and anti-social behavior are strongly related with alcohol consumption in the Baltic countries.

Table 1

<table>
<thead>
<tr>
<th>Recorded alcohol consumption, liters per capita (age+15)</th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
<th>Finland</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.3</td>
<td>10.8</td>
<td>14.0</td>
<td>8.5</td>
<td>7.2</td>
</tr>
<tr>
<td>Share of alcohol excise duties revenue in general government total revenue, %</td>
<td>2.5</td>
<td>2.0</td>
<td>1.8</td>
<td>1.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Total government alcohol revenue per capita, EUR</td>
<td>158</td>
<td>78</td>
<td>90</td>
<td>249</td>
<td>152</td>
</tr>
<tr>
<td>Total number of registered retail shops selling alcohol, per 100000 habitants</td>
<td>218</td>
<td>442</td>
<td>n/a</td>
<td>105</td>
<td>76</td>
</tr>
<tr>
<td>Opening hours of alcohol shops, per week</td>
<td>84</td>
<td>98</td>
<td>98</td>
<td>64</td>
<td>55</td>
</tr>
<tr>
<td>Alcohol beverages imported by travelers</td>
<td>About 10% (Latvia, Russia)</td>
<td>Not available</td>
<td>Not available</td>
<td>1.8 litres*</td>
<td>1.2 litres**</td>
</tr>
</tbody>
</table>

Notes:
* in pure alcohol content (mainly from Estonia and Russia)
** in pure alcohol content (Baltic countries, Denmark, Germany)

Source: Alcohol Market, consumption and harms in Estonia Yearbook (2016).
Third, alcohol production and alcohol-related economic activities cover relatively large part of the countries’ economy. Alcohol price differences generate an intensive “vodka tourism” from affluent Nordic countries’ to the Baltic States. For example, in Estonia about a half of the total strong alcohol (spirits) sales has been made by foreign tourists (Alcohol market, 2016, p. 37). Therefore, alcohol taxation has a direct impact on the Baltic economy and state budget.

Fourth, Baltic countries public budgets’ are depending considerably on alcohol taxes revenue. Alcohol excise revenues in the state budgets’ are the highest in the European Union (Table 1). In Estonia, the general government collects about 3 % of all budget revenues from alcohol excise duties. On average, the same ratio in the EU countries is considerably lower.

Fifth, there are significantly more alcohol-selling shops in the Baltic states, if compared with the Nordic countries. The shops are opened during the long hours and easily accessible every single day of a week. High dependency of the state budget from alcohol taxes actually limits the governments “degree of freedom” on alcohol policy.

2.3. Alcohol tax rates and consumption pattern

Alcohol excise duties and VAT rates in the Baltic States are significantly lower than in the neighboring Nordic countries. The excise duties in the Nordic countries are 4-5 times higher than in the Baltic countries (Table 2). Also, VAT rates are higher in the Nordic countries.

Table 2

<table>
<thead>
<tr>
<th>Alcohol excise duties, EUR</th>
<th>Beer, per hl/degree of alcohol</th>
<th>Wine, per hectoliter</th>
<th>Ethyl alcohol, per hectoliter of pure alcohol</th>
<th>Standardized VAT rate, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>8.3</td>
<td>111</td>
<td>2172</td>
<td>20</td>
</tr>
<tr>
<td>Latvia</td>
<td>4.2</td>
<td>74</td>
<td>1400</td>
<td>21</td>
</tr>
<tr>
<td>Lithuania</td>
<td>3.4</td>
<td>78</td>
<td>1353</td>
<td>21</td>
</tr>
<tr>
<td>Finland</td>
<td>32.0</td>
<td>339</td>
<td>4555</td>
<td>24</td>
</tr>
<tr>
<td>Sweden</td>
<td>20.7</td>
<td>269</td>
<td>5456</td>
<td>25</td>
</tr>
<tr>
<td>EU minimal level</td>
<td>1.87</td>
<td>0</td>
<td>550</td>
<td>15</td>
</tr>
</tbody>
</table>


However, there is considerably high amplitude among Baltic states excise taxes as well – e.g. Estonian excise rates are substantially higher than in neighboring Latvia and Lithuania. Lower excise duties are accordingly correlating with lower retail prices. Such a situation generates foundations for intensive “vodka tourism” from Nordic countries to the Baltic. Particularly large-scale alcohol shopping flow takes place from Finland to Estonia.
Table 3 depicts general drinking pattern in the Baltic countries, based on consumption intensity. The drinking intensity is measured by frequency of drinking days. In the Table 3, the drinkers have distributed into 3 categories as explained in the notes’ section.

Table 3
Distribution of consumers by drinking intensity, during last 12 months, %

<table>
<thead>
<tr>
<th></th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intense</td>
<td>10.9</td>
<td>10.2</td>
<td>11.9</td>
</tr>
<tr>
<td>Moderate</td>
<td>42.8</td>
<td>43.9</td>
<td>43.0</td>
</tr>
<tr>
<td>Rare</td>
<td>46.3</td>
<td>45.8</td>
<td>45.2</td>
</tr>
<tr>
<td>Share of alcohol consumers in adult population</td>
<td>84.5</td>
<td>83.1</td>
<td>89.1</td>
</tr>
</tbody>
</table>

Notes: intense - every day; moderate - at least once a week; rare - once a month or less

*Source: author’s calculations*

As Table 3 depicts, over 83% of all Baltic adult population has consumed alcohol during the year. However, alcohol consumption intensity is uneven over the population. About 10% of all drinkers consume alcohol every day. Consumers, defined as moderate drinkers (consumption intensity several times a week), are covering 43% of Baltic population. Once a month or less consume alcohol about 45% of consumers. Otherwise, about 60% of population drinks alcohol rather infrequently.

Following two tables characterize alcohol consumption structure by types of alcohol.

Table 4
Most consumed alcohol during last 12 month, percentage of consumers

<table>
<thead>
<tr>
<th></th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genuine, branded beer</td>
<td>37.7</td>
<td>41.0</td>
<td>40.2</td>
</tr>
<tr>
<td>Genuine, branded wine</td>
<td>37.1</td>
<td>30.9</td>
<td>26.7</td>
</tr>
<tr>
<td>Genuine, branded spirits</td>
<td>23.6</td>
<td>26.7</td>
<td>32.4</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1.6</td>
<td>1.4</td>
<td>0.7</td>
</tr>
<tr>
<td>Total*</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note: *alcohol consumers only; non-consumers are excluded

*Source: authors calculations*

As Table 4 depicts, the most consumed alcohol drink in the Baltic countries is beer, which is mostly consumed by 40% of all drinkers. Estonians and Latvians drink after that more wine than strong alcohol; Lithuanians drink
more strong alcohol than wine.

Table 5 explains alcohol consumption structure from another angle. The respondents were asked to assess their usual daily drinking by type of alcohol, container size and amount of containers. The table depicts amount of so-called first drink (another type of drink follows only in 12% of cases); what the respondent consumes in a typical day of alcohol consumption. On that basis is assessed annual alcohol consumption level in all three Baltic countries.

Table 5
Structure of alcohol consumption by type of alcohol, percent of total drinkers

<table>
<thead>
<tr>
<th></th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beer</td>
<td>42.4</td>
<td>39.5</td>
<td>35.0</td>
</tr>
<tr>
<td>Wine</td>
<td>37.1</td>
<td>31.5</td>
<td>31.5</td>
</tr>
<tr>
<td>Spirit</td>
<td>18.2</td>
<td>27.1</td>
<td>30.9</td>
</tr>
<tr>
<td>Cocktails</td>
<td>2.2</td>
<td>1.5</td>
<td>2.6</td>
</tr>
<tr>
<td>Surrogate alcohol</td>
<td>0.2</td>
<td>0.5</td>
<td>0.1</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: author’s calculations

The structure of drinks is more detailed in the Table 5 (e.g. includes also surrogate liquids). Similarly, the first type of drink consumed is beer; the second is wine and strong alcohol follow. In Lithuania, all main types of drinks (defined as first drink) distributed about evenly; in Estonia and Latvia drinking starts in most cases with beer (40-42% of cases) and only in 18% with strong alcohol (Estonia). In Lithuania, about 31% of consumer cases the first drink is strong alcohol, e.g. vodka. A small part of alcohol consumption in the Baltic countries is presented by various other liquids (so-called surrogates), which consists certain amount of drinkable ethyl.

2.4. Income and alcohol consumption

How are the drinking behavior and person’s income related in the Baltic countries? Table 6 relates society’s income level with consumption pattern. Consumer groups’ structure is described in the Table 6 note’s section.

As Table 6 depicts, across all income levels, heavily drinking respondents are in minor position – cover about 10% of all consumers only. However, the various income groups demonstrate different consumption intensity patterns. Respondents, who belong to the lowest income group in all countries, drink mostly rarely. In accordance with income growth, intensity of drinking increases in middle-income group of consumers. In the highest income group, intensity of drinking is significantly higher than in low income group; in Lithuania even up to 19% of richest people drinks every day.
### Table 6

Intensity of drinking and income level, %

<table>
<thead>
<tr>
<th>Income level, EUR**</th>
<th>Drinking intensity*</th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intense</td>
<td>10.0</td>
<td>11.5</td>
<td>9.2</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>37.9</td>
<td>40.9</td>
<td>41.0</td>
</tr>
<tr>
<td></td>
<td>Rare</td>
<td>52.2</td>
<td>47.6</td>
<td>49.8</td>
</tr>
<tr>
<td>Low (up to 800 EUR)</td>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>Intense</td>
<td>9.8</td>
<td>6.2</td>
<td>14.5</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>44.9</td>
<td>50.2</td>
<td>42.9</td>
</tr>
<tr>
<td></td>
<td>Rare</td>
<td>45.3</td>
<td>43.6</td>
<td>42.6</td>
</tr>
<tr>
<td>Middle (800-1200 EUR)</td>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>Intense</td>
<td>14.7</td>
<td>8.6</td>
<td>18.9</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>49.1</td>
<td>51.6</td>
<td>52.2</td>
</tr>
<tr>
<td></td>
<td>Rare</td>
<td>36.2</td>
<td>39.8</td>
<td>28.9</td>
</tr>
<tr>
<td>High (up from 1200 EUR)</td>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Notes:

*Drinking intensity: intense - every day; moderate - at least once a week; rare - once a month or less

**Disposable income level (after income taxes and social transfers): low income – up to 800 EUR per month; middle income – 801-1200 EUR per month; high – 1201 and up EUR per month

Sources: authors’ calculations

How much different income groups’ consumers spend on alcohol? Table 7 provides overview of income groups’ spending levels in euros.

### Table 7

Alcohol purchase by income groups, percent of total

<table>
<thead>
<tr>
<th>Income level, EUR*</th>
<th>Monthly spending on alcohol, EUR</th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-20 EUR</td>
<td>72.2</td>
<td>74.5</td>
<td>67.0</td>
</tr>
<tr>
<td></td>
<td>21-50 EUR</td>
<td>17.7</td>
<td>18.2</td>
<td>26.1</td>
</tr>
<tr>
<td></td>
<td>51-1000 EUR</td>
<td>10.0</td>
<td>7.2</td>
<td>6.9</td>
</tr>
<tr>
<td>Low</td>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>0-20 EUR</td>
<td>60.1</td>
<td>73.1</td>
<td>56.4</td>
</tr>
<tr>
<td></td>
<td>21-50 EUR</td>
<td>24.1</td>
<td>18.9</td>
<td>28.8</td>
</tr>
<tr>
<td></td>
<td>51-1000 EUR</td>
<td>15.8</td>
<td>8.0</td>
<td>14.8</td>
</tr>
<tr>
<td>Middle</td>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>0-20 EUR</td>
<td>47.8</td>
<td>66.7</td>
<td>41.7</td>
</tr>
<tr>
<td></td>
<td>21-50 EUR</td>
<td>31.6</td>
<td>26.7</td>
<td>38.4</td>
</tr>
<tr>
<td></td>
<td>51-1000 EUR</td>
<td>20.6</td>
<td>6.7</td>
<td>19.9</td>
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<tr>
<td>High</td>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note:

*Disposable income level (after income taxes and social transfers): low income – up to 800 EUR per month; middle income – 801-1200 EUR per month; high – 1201 and up EUR per month

Source: authors’ calculations
As Table 7 presents, highest share of persons from all income groups spend on alcohol less than 20 EUR per month. 67-75% persons in lower income group spend less than 20 euros. Expectedly, with higher income correlates average higher spending on alcohol. One fifth of Estonian and Lithuanian consumers, belonging to the highest income group, spend 51-1000 euros on alcohol per month.

Do the different income groups consume different alcoholic drinks? Table 8 gives information about consumption structure by income groups.

### Table 8

<table>
<thead>
<tr>
<th>Income*</th>
<th>Alcohol type</th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Beer</td>
<td>37.8</td>
<td>40.7</td>
<td>32.1</td>
</tr>
<tr>
<td></td>
<td>Wine</td>
<td>37.1</td>
<td>30.1</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>Spirits</td>
<td>21.6</td>
<td>27.1</td>
<td>32.1</td>
</tr>
<tr>
<td>Middle</td>
<td>Beer</td>
<td>44.3</td>
<td>39.3</td>
<td>36.6</td>
</tr>
<tr>
<td></td>
<td>Wine</td>
<td>37.4</td>
<td>30.4</td>
<td>28.6</td>
</tr>
<tr>
<td></td>
<td>Spirits</td>
<td>17.8</td>
<td>28.6</td>
<td>32.4</td>
</tr>
<tr>
<td>High</td>
<td>Beer</td>
<td>47.6</td>
<td>29.0</td>
<td>40.9</td>
</tr>
<tr>
<td></td>
<td>Wine</td>
<td>37.4</td>
<td>47.3</td>
<td>30.2</td>
</tr>
<tr>
<td></td>
<td>Spirits</td>
<td>13.0</td>
<td>23.7</td>
<td>26.4</td>
</tr>
</tbody>
</table>

Notes: Disposable income level (after income taxes and social transfers): low income – up to 800 EUR per month; middle income – 801-1200 EUR per month; high – 1201 and up EUR per month

Source: author’s calculations

As Table 8 depicts, alcohol consumption structure over different income groups is rather similar. In all income groups in Estonia and Lithuania, the most consumed drink is beer, followed by wine and spirits. Beer drinkers share increases and ethyl alcohol (spirits) decreases accordingly to the rise of income. In Latvia, high-income earners drink more wine than beer.

### 3. CORRELATION BETWEEN TAX BURDEN AND INCOME

Are alcohol taxes actually regressive in the Baltic countries? Do low-income people pay relatively more on alcohol compared with richer persons?

There are two types of taxes, which are related with alcohol consumption. The excise duty is *per unit* tax, which levied on volume and strength of particular alcohol. The actual price for the specific alcohol item (e.g. price of expensive wine or cognac) does not play any role of defining excise
duty on a unit of alcohol. Differently, actual retail price is a basis for defining level of value added tax, which is *ad valorem* tax. In below, both of those taxes burden allocation over consumer groups’ is assessed.

We summarize respondents’ total alcohol consumption by quantity and type of alcohol, based on survey data in all Baltic countries. Considering this, we calculated a sum alcohol excise duties, which has imputed to that amount of alcohol in case of retail sale. Excise duties depend on a standardized volume and alcohol content and are irrelevant to actual sale price. In subsequent, the sum of imputed excised duties will be compared with person’s annual income level. Such a method is different from techniques used previously by different researchers (see Section 1.1). Earlier studies have compared spending on alcohol over different income groups or proportion of alcohol expenditures in income. In the current study, a different approach is used. There is assessed (calculated) excise tax amount directly, based on volume of consumed alcohol and associated excise burden to that specific alcohol quantity. By our understanding that is more precise method to evaluate tax burden level over different income groups.

Calculation of VAT, related with alcohol consumption has done differently from excise duties calculation. VAT is an *ad valorem* tax and therefore, not the quantity, but consumer price (value) is the integer that defines the amount of tax. To assess the VAT expenditure, consumer spending on alcohol (in euros) was taken as base for tax calculations. The expenditure includes VAT component, which allows distinguishing the amount of value added tax, attributed to that particular spending item. Based on calculated excise duties and VAT, we assessed alcohol tax burden on consumer’s annual income.

Table 9 presents alcohol taxes share compared to consumers’ income groups.

### Table 9

<table>
<thead>
<tr>
<th></th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>1.96</td>
<td>1.60</td>
<td>1.03</td>
</tr>
<tr>
<td>Middle</td>
<td>1.07</td>
<td>0.57</td>
<td>0.85</td>
</tr>
<tr>
<td>High</td>
<td>0.72</td>
<td>0.48</td>
<td>0.70</td>
</tr>
<tr>
<td>Total</td>
<td>1.40</td>
<td>1.26</td>
<td>0.93</td>
</tr>
</tbody>
</table>

Notes: Disposable income level (after income taxes and social transfers): low income – up to 800 EUR *per* month; middle income – 801-1200 EUR *per* month; high – 1201 and up EUR *per* month

*Source: authors’ calculations*

As Table 9 presents, in Estonia low-income earners spend about 2% of their net income on alcohol related taxes (sum of excise duties and VAT). High-income earners spend on alcohol taxes about 0.7% on their income. Therefore, alcohol taxes are regressive and lower income person bears relatively higher tax burden in comparison with higher income earner. Such a result fully corresponds
with earlier studies mentioned in Subsection 1.1. In absolute terms, the alcohol taxes are not high burden for low-income earners – average monthly spending on alcohol taxes is not more than 15 euros – however, in relative terms their spending is significantly higher than in higher income groups.

In Latvia and Lithuania, the alcohol excise duties are lower and VAT rates are slightly higher than in Estonia. However, also in those countries alcohol taxes regressive burden over income groups is clearly visible.

In the following, we have drawn correlations between respondents’ income and imputed alcohol related taxes (Table 10-11). The correlation applies only to those respondents who have actually consumed alcohol during the year (83-89% of all respondents in the Baltic states).

The Table 10 demonstrates that there is statistically significant (negative) correlation between tax burden and consumers’ income in all three Baltic countries. That means – lower the income of the person is, than relatively more that person pays alcohol related taxes to compare with its annual income. Once again, such a result confirms earlier studies about excise duties regressive nature.

We calculated correlation between income and different taxes also separately (excise duties and VAT is compared with income level). As Table 10 demonstrates, VAT is more strongly (negatively) correlated with income than excise duties. In Lithuania, the excise duties burden is not statistically related with consumers’ income level. If VAT burden is negatively correlated with income, then alcohol taxes regressive nature comes mainly from VAT and not so much from specific alcohol excise duties.

Share of VAT in the unit of sold alcohol is always bigger than excise duty share in retail price. As was demonstrated above – person’s alcohol tax burden is a combination of drinking intensity (drinking days), consumed amount (milliliters) and spending (euros). As correlation coefficient demonstrates, increase in income does not increase alcohol expenditure on the same pace.
Other words, lower income people spend relatively more on alcohol drinks in comparison with their income.

Table 11 provides correlation coefficients between income and share of alcohol excise duties on income, calculated by different types of alcohol drinks.

<table>
<thead>
<tr>
<th></th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beer excise duty</td>
<td>-0.285**</td>
<td>-0.328**</td>
<td>-0.164**</td>
</tr>
<tr>
<td>Wine excise duty</td>
<td>-0.193**</td>
<td>-0.153**</td>
<td>-0.034</td>
</tr>
<tr>
<td>Spirit excise duty</td>
<td>-0.149*</td>
<td>-0.243**</td>
<td>-0.001</td>
</tr>
</tbody>
</table>

Notes:
* Correlation is significant at the 0.05 level (2 tailed)
** Correlation is significant at the 0.01 level (2 tailed)

Source: author’s calculations

Table 11 demonstrates that beer related excise duties burden correlates negatively with income level in the all three Baltic countries. Beer is the most consumed drink over the countries; however, there is unclear relationship between increase of income and quantity of beer consumed.

In Estonia and Latvia, also other alcoholic drinks’ excise duties are negatively correlated with income level. In Lithuania, wine and spirit excise duties’ correlations with income are not statistically significant. As Table 8 depicts, in Lithuania increase in income leads to the shift from beer towards more wine and spirits drinking. Differently in Estonia and Latvia, increase of income does not change the structure of alcohol consumption.

3. CONCLUSIONS

Theoretical and empirical studies are supporting understanding that alcohol taxes (excise duties) are regressive by their nature. In purchasing alcohol, lower income groups bear relatively higher alcohol tax burden to compare with their income than richer income groups. Such a situation may generate distortions on consumption and spending structure and ultimately reduce social welfare. However, the alcohol taxes are more regressive if we compare income rather than actual spending. In addition, alcohol taxes are less regressive when a lengthier time span is considered rather if a single time point is followed.

The current paper brings out three moments to expose particularities of alcohol taxation in the Baltic countries.
First, the authors have calculated amount of alcohol related taxes, based on the quantity of alcohol consumed and actual spending on alcohol. The calculated tax amount was compared with consumers’ income, to assess distribution of alcohol tax burden over income earners’ groups. The current analyses confirms the general assumption – the tax burden of VAT and excise duties is regressive! Than lower the income of the person is, than relatively more the person pays alcohol related taxes to compare with his or her annual income. Uniquely, there is also done a correlation analyses between alcohol taxation and income. The results demonstrate statistically significant (negative) correlation between tax burden and consumers’ income in the Baltic countries (except Lithuania, there certain correlation coefficients are statistically not significant).

Second, another interesting conclusion is that the value added tax is more strongly (negatively) correlated with its share in income than excise duties. The VAT covers larger share in alcohol retail price than excise duties. There are not existing comparable studies over VAT in alcohol products and its distribution over income groups. Therefore, our study provides an additional aspect to understand consequences of alcohol taxation and its impact on various income groups.

Third, Baltic nations alcohol consumption is relatively high in international context. In addition, their public budgets’ rely rather significantly on alcohol taxes. In case of regressive nature of alcohol taxes, optimal alcohol policy and tax system should consider impact of alcohol tax burden on various income groups in the society. Study of the Baltic countries alcohol consumption pattern and related tax burden allocation confirms such a position.

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TOURISM
Abstract

Tourism demand, as a set of goods and services people consume during their travels, greatly affects tourism development in a destination. Hence, forecasting tourism demand is the subject of numerous studies in the field of tourism. Many of these studies use a time series analysis approach to examine tourism demand, foremost through tourist arrivals but also through the number of overnights and tourist expenditure. The purpose of this paper is twofold: to examine trends in tourist arrivals in the city of Rijeka, Croatia over the last ten-year period and to forecast tourist arrivals in the near future. The time series analysis method is applied to this end, with tourism demand being measured by the overall number of tourist arrivals. The research findings provide deeper insights into, and a better understanding of, tourism demand forecasting as a factor of efficient tourism planning.

Keywords: tourism demand, forecasting, destination, tourism development
1. INTRODUCTION

After deindustrialization, the city of Rijeka, Croatia was faced with the momentous question of how to define, and in which direction to focus, its development strategy. Given the city’s tangible resources and exceptional historical and architectural heritage, the logical perspective that arose referred to the development of tourism. However, since gaining competitive advantage no longer relies merely on natural resources, tourism forecasting plays a crucial role in Rijeka’s tourism planning. Such rationale led to the objective of this study, which was to find a quantitative solution to the number of tourists that could constitute tourism demand for Rijeka’s tourism facilities, services and programmes which are the result of the experience and knowledge of Rijeka Tourist Board which serves the role of destination management organization (DMO). Following this objective, the study employs the Holt-Winters triple exponential smoothing as a forecasting technique to predict tourism demand. The model estimation is based on the quarterly data of the realized number of tourist arrivals in the city of Rijeka in the period from the first quarter of 2006 to the last quarter of 2015 and was used to forecast values for the period from the first quarter of 2016 to the last quarter of 2020.

The remainder of this study is organized as follows. The next section considers the fundamental precepts and theoretical determinants of tourism demand and forecasting methods in tourism demand forecasting, followed by an extensive description of research methodology. The research results are discussed in the fourth section. The final part summarizes conclusions and implications of the study.

2. LITERATURE REVIEW

2.1. Conceptualisation of tourism demand

Tourism is seen as a highly-sophisticated integrated system within a national economy; its scope and structure exceeds the economic categories of activities, branches, industries and sectors, and it is composed of interrelated, heterogeneous, interdependent and complementary fragments of diverse economic branches and activities that together form a logical, functional and evenly balanced whole (Kesar, 2006, p. 86).

The development of a tourist destination is foremost determined and characterised by tourism demand. Notwithstanding the numerous definitions that exist, tourism demand is most often defined, for the purposes of tourism statistics, as the total number of persons participating in tourism traffic, or wishing to participate in tourism traffic, to consume various tourism services in places away from their usual places of residence and/or work (Cooper, Fletcher, Gilbert and Wanhill, 1998, p. 24). From an economic perspective, tourism demand can be defined as the quantity of goods and services that can be sold on the tourism market under specific conditions and at specific prices, that is, the quantity of goods and services for which potential tourism consumers show a realistic and objective interest (Vukonić and Čavleki, 2001, p. 329).
Understanding tourism demand is an exceptionally complex process that is based on the following knowledge: a) demand is affected by an entire array of factors, in addition to prices; b) demand includes not only persons taking part in tourism traffic, but also those persons who wish to take part but are not able to for certain reasons; and c) tourism demand conditions relations in the tourism market. The first assumption implies that the creation of tourism demand is affected not only by people/tourists, but also by society, the state, the environment, suppliers and the entire economy. The second statement points to the conclusion that in addition to there being several types of demand – ideal, potential, real and effective – there is also suppressed demand. Finally, the last assumption indicates that potential tourism demand is the major determinant of tourism supply. Namely, the tourism market is based on the preferences of potential tourism demand that is willing to spend on products and services under specific conditions. In addition, tourism demand is dislocated (demand is physically separated from tourism supply), heterogeneous (the diversity of needs and motivations), elastic (in relation to the income of tourists), dynamic (mobility) and seasonal (due to climate constraints and free time available to tourists) (Čavlek et al., 2011, p. 57).

The characteristics of tourism demand and the many factors that affect it make it very difficult to forecast the scale of tourism demand. However, relevant research studies are nowadays focusing on investigating tourism demand trends to help transform potential demand into actual demand as the primary precondition to tourism development.

2.2. Forecasting tourism demand

The distinctly competitive tourism market of today, where tourism supply exceeds tourism demand (Čavlek et al., 2011, p. 57), is driving the need for the effective planning of tourism development in destinations, with tourism demand forecasting playing a crucial role (Burger, Dohnal, Kathrada and Law, 2001, p. 404). Tourism forecasts are valuable for both the private and public sector. Namely, they enable avoiding shortages or surpluses in goods and services, calculating tourism’s contribution to GDP and examining its impact on resources.

With regard to quantitative research methods, two basic groups of methods can be used to forecast tourism demand (Song and Li, 2008, p. 204): time series models and causal econometric approaches. Based on the assumption that historical data regarding an observed phenomenon are the key to predicting the future, time series methods use data patterns from the past to forecast future values of a given phenomenon. These methods include the naïve method, the moving average method, the exponential smoothing method and autoregressive integrated moving average models. On the other hand, causal methods mathematically simulate a cause-effect link between variables by using an array of explanatory variables that affect tourism demand. Causal methods include regression analysis and structural econometric models.
In the quantitative forecasting literature, many studies regarding tourism demand forecasting and modelling employ time series analysis. More precisely, the results of comprehensive research (Song and Li, 2008) that reviewed 121 studies dealing with tourism demand forecasting and modelling show that the majority of studies (72) applied time series methods. Most of these studies were focused on investigating historical trends and seasonality to forecast the future values of series.

3. RESEARCH METHODOLOGY

In line with the objectives of this paper, the methodological approach to forecasting tourism demand is based on classical time series analysis (the method of statistical time series analysis), which is focused on analysing the basic characteristics of individual time series and forecasting their future value based on values for the past and present periods (Dragutinović Mitrović and Bošković, 2013, p.28). A time series is defined as a “chronologically arranged set of values of a variable that represents a given phenomenon or statistical process in time” (Šošić, 2004, p. 549). Biljan-August, Pivac and Stambuk (2009, 97) maintain that a time series is a “set of values of a phenomenon, arranged in chronological order”. The values of the observed variable of a time series are called frequencies and are designated as:

\[ \{Y_t\}, t = 1,2,\ldots N \]

The time series of economic phenomena can be written as follows:

\[ Y_t = f(t) + u_t \]

where:

- \( f(t) \) = deterministic component, which represents the systematic part of the series
- \( u_t \) = random variable, which represents the stochastic part of the series.

The systemic part \( f(t) \) is affected by three components: the trend component (long-term course of development of a phenomenon over time), the cyclical component (a phenomenon repeats itself over a period of two or more years) and the seasonal component (a phenomenon repeats itself over a one-year period) (Bahovec and Erjavec, 2009, p. 190). Understanding these components is essential to analysing and interpreting research results.

This paper focuses on tourist arrivals, the most commonly used measure of tourism demand (Song, Witt and Li, 2012, p. 2) of the city of Rijeka in the period from 2007 to 2016. The Croatian Bureau of Statistics (2015) defines a tourist as a person spending at least one night in a hospitality facility or other tourist accommodation facility, away from their place of residence, for the purpose of undertaking activities pertaining to leisure or recreation, health-care, education, sport, religion, family, public missions or gatherings. The term tourist does not refer to migrants, cross-border workers, diplomats, members of armed forces on regular duty, displaced persons or nomads.
Data on the number of tourist arrivals in Rijeka were collected from the publications of the Croatian Bureau of Statistics. The sources of data on tourist arrivals in Rijeka at the annual level were the publications First Release – Tourist Arrivals and Overnights for 2015 and 2016, while the source of data on tourist arrivals in Rijeka by month were the publications First Release – Tourism, for the period January 2006 – December 2016. Following the recommendations of similar studies, the collected data are presented on a quarterly basis.

The time horizon of analysis covers the period from the 1st quarter of 2006 to the 4th quarter of 2020. A model was built based on data for the period from the 1st quarter of 2006 to the 4th quarter of 2015 and was used to forecast values for the period from the 1st quarter of 2016 to the last quarter of 2020.

Time series modelling is based on decomposition, that is, on separating the time series into trend, seasonal and cyclical components to identify their influences. To this end, the Hodrick-Prescott filter was used to detrend the time series.

The Hodrick-Prescott filter is based on the resolution of the following minimisation problem:

$$\min \sum_{t=1}^{N} (y_t - \tau_t)^2 + \lambda \sum_{t=2}^{N-1} \left[ (\tau_{t+1} - \tau_t) - (\tau_t - \tau_{t-1}) \right]^2$$

where $y_t$ is the time series, $\tau_t$ is the trend component, and $\lambda$ is the smoothing parameter (Kožić and Gatti, 2012, p. 489). Given the quarterly presentation of data, and as recommended by Hodrick and Prescott (1997), $\lambda = 1600$ is used in this study.

In accordance with the attributes of tourism demand in Rijeka in the observed period, the Holt-Winters model was used for the short-term forecasting of tourist arrivals. The Holt-Winters multiplier model involves triple exponential smoothing (overall smoothing, trend smoothing and seasonal smoothing) and is suitable for data that display a trend component and a seasonal component. After the values of level, trend and seasonality were calculated, the following equation was used for forecasting:

$$\hat{Y}_{t+h} = (L_t + hb_t)S_{t-s+h}$$

where:

$\hat{Y}$ – forecast value of a phenomenon

$L$ – level of the series

$S$ – seasonal component

$b$ – trend of the series

$h$ – number of periods of forecasting

$s$ – number of seasonal periods in one year

$t$ – time period

Triple exponential smoothing is based on the estimation of three smoothing constants – alpha, beta and gamma. In this paper, smoothing constants were chosen whose forecast values gave the lowest absolute percentage error.
To test the forecasting accuracy of the Holt-Winters model, the mean absolute percentage error (MAPE) was calculated. The mean absolute percentage error is expressed in generic percentage terms and it is computed by the following formula:

$$MAPE = \frac{1}{n} \sum_{t=1}^{n} \left| \frac{A_t - F_t}{A_t} \right| \times 100$$

where:
- $A_t$ – actual value
- $F_t$ – forecast value
- $t$ – some time period

Forecasting accuracy was established according to the following MAPE values (Baggio and Klobas, 2011, p. 151):
- Lower than 10% - highly accurate;
- 11%-20% - good;
- 20-50% - reasonable;
- Higher than 50% - inaccurate.

Data detrending was carried out using the Hodrick-Prescott filter (Add-in) in Microsoft Excel (version 2016), while the R GUI programme (version 3.3.1) was applied for forecasting, using the Holt-Winters model of triple exponential smoothing.

4. RESEARCH RESULTS

4.1. Attributes of tourism demand in Rijeka

Understanding the basic attributes of tourism demand is essential because the economic effects of tourism development are most often expressed through a variety of tourism demand parameters such as the number of tourist arrivals, the length of stay in a destination/accommodation facility, and the amount of tourist expenditure. Presented below are the basic characteristics of tourism demand in Rijeka in 2016 - a period for which the latest statistical data at the annual level are available, followed by an extensive analysis of Rijeka’s tourism demand in the period from 2007 to 2016.

In 2016 a total of 205,485 tourist arrivals were recorded in Rijeka, of which 40,929 were domestic and 164,556 were foreign. According to the available statistical data at the county level, the town of Rijeka accounted for 7.65% of all tourist arrivals in Primorje-Gorski Kotar County in 2016 (CBS, 2017). Data in Table 1 indicate that foreign tourist arrivals accounted for more than three-quarters of all tourist arrivals, thus confirming the prevalence of foreign tourism demand. A comparison of these indicators for 2016 and 2015 reveals that while the number of foreign tourist arrivals is dropping (-9.40%), the number of domestic tourist arrivals is noticeably rising (+20.00%).
The seasonal character of tourism at the national level (MINT, 2013) is also evident in changes in tourism demand in Rijeka, as demonstrated in Figure 1. In 2016, the months of July and August saw the largest number of tourist arrivals (37.258 and 42.684, respectively), while January and December the lowest (5.546 and 6.115, respectively). In the pre-season and post-season, the number of tourist arrivals in Rijeka plummets. Additionally, it should be pointed out that seasonality in Rijeka’s tourism demand in the observed period results from changes in foreign tourist arrivals, with the lowest number being in January (2.753) and the highest in August (38.113). Similar oscillations were not recorded for domestic guests, as the lowest number of domestic arrivals was 2.502 (recorded in December), and the highest 4.571 (recorded in August).

Figure 2 illustrates the total number of tourist arrivals in Rijeka in the period from 1st quarter of 2007 to 4th quarter of 2016, together with the trend component and seasonal component. In the observed ten-year period, the largest number of arrivals (142.301) was recorded in the 3rd quarter of 2011, and the smallest (14.650) in the 1st quarter of 2013. The most frequent number of tourist arrivals per quarter is 14.650, while the average number is 55.763.

Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Arrivals</th>
<th>Number</th>
<th>Share (%)</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Domestic</td>
<td>40.929</td>
<td>19.92</td>
<td>120.00</td>
</tr>
<tr>
<td>2016</td>
<td>Foreign</td>
<td>164.556</td>
<td>80.08</td>
<td>90.60</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>205.485</td>
<td>100.00</td>
<td>95.20</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>34.203</td>
<td>15.84</td>
<td>96.08</td>
</tr>
<tr>
<td>2015</td>
<td>Foreign</td>
<td>181.681</td>
<td>84.16</td>
<td>86.98</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>215.884</td>
<td>100.00</td>
<td>88.30</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>35.598</td>
<td>14.56</td>
<td>131.04</td>
</tr>
<tr>
<td>2014</td>
<td>Foreign</td>
<td>208.868</td>
<td>85.44</td>
<td>116.65</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>244.466</td>
<td>100.00</td>
<td>116.80</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>27.165</td>
<td>12.98</td>
<td>79.91</td>
</tr>
<tr>
<td>2013</td>
<td>Foreign</td>
<td>179.062</td>
<td>87.02</td>
<td>86.73</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>209.301</td>
<td>100.00</td>
<td>87.05</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>33.993</td>
<td>14.14</td>
<td>110.43</td>
</tr>
<tr>
<td>2012</td>
<td>Foreign</td>
<td>206.458</td>
<td>85.86</td>
<td>89.88</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>240.451</td>
<td>100.00</td>
<td>92.30</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>30.783</td>
<td>11.81</td>
<td>67.07</td>
</tr>
<tr>
<td>2011</td>
<td>Foreign</td>
<td>229.706</td>
<td>88.19</td>
<td>136.56</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>260.489</td>
<td>100.00</td>
<td>121.66</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>45.896</td>
<td>21.44</td>
<td>131.40</td>
</tr>
<tr>
<td>2010</td>
<td>Foreign</td>
<td>168.207</td>
<td>78.56</td>
<td>99.03</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>214.103</td>
<td>100.00</td>
<td>104.55</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>34.926</td>
<td>17.06</td>
<td>56.06</td>
</tr>
<tr>
<td>2009</td>
<td>Foreign</td>
<td>169.853</td>
<td>82.94</td>
<td>115.03</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>204.779</td>
<td>100.00</td>
<td>97.99</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>61.316</td>
<td>29.34</td>
<td>69.28</td>
</tr>
<tr>
<td>2008</td>
<td>Foreign</td>
<td>147.652</td>
<td>70.66</td>
<td>106.93</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>208.968</td>
<td>100.00</td>
<td>92.22</td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td>88.495</td>
<td>39.06</td>
<td>/</td>
</tr>
<tr>
<td>2007</td>
<td>Foreign</td>
<td>138.087</td>
<td>60.94</td>
<td>/</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>226.582</td>
<td>100.00</td>
<td>/</td>
</tr>
</tbody>
</table>

The following figure clearly demonstrates the seasonal effect on total tourist-arrival numbers in Rijeka in the observed period and indicates a gentle downward trend in tourist arrivals from 2011. Given the fact that the seasonality of Rijeka’s tourism demand is the result of foreign tourist flows, the upcoming section separately examines domestic and foreign tourist arrivals. Therefore, figure 3 and 4 present the number of domestic and foreign tourist arrivals in Rijeka in the period from 1st quarter of 2007 to 4th quarter of 2016, together with the trend component and seasonal component.

Figure 1 Tourist arrivals in Rijeka in 2016, by month


Figure 2 Total tourist arrivals in Rijeka from 1st Q 2007 to 4th Q 2016 - Hodrick-Prescott filter, $\lambda = 1600$.

The smallest number of domestic tourist arrivals (4.982) was recorded in the 2nd quarter of 2010, and the largest (33.802) in the 2nd quarter of 2007. The number of foreign tourist arrivals was the lowest (4.709) in the 1st quarter of 2007 and the highest (134.370) in the 3rd quarter of 2010.

A downward trend in tourist arrivals is evident in the case of domestic tourists in the observed period, while foreign tourist arrival numbers are characterised by an upward trend. However, foreign tourism demand in Rijeka displays pronounced seasonality in comparison with domestic tourism demand.
4.2. Forecasting tourism demand in Rijeka

The study generated forecasts of the total number of tourist arrivals in Rijeka, as well as separate forecasts of domestic and foreign tourist arrivals for the period between 2016 to 2020. Forecasted values are presented in Table 2.

Table 2
Forecasted tourist arrivals in Rijeka from 2016 to 2020

<table>
<thead>
<tr>
<th>Year</th>
<th>Arrivals</th>
<th>Number</th>
<th>Share (%)</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>Domestic</td>
<td>37,564</td>
<td>20,96</td>
<td>101,87</td>
</tr>
<tr>
<td></td>
<td>Foreign</td>
<td>141,627</td>
<td>79,04</td>
<td>93,86</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>179,191</td>
<td>100,00</td>
<td>95,43</td>
</tr>
<tr>
<td>2019</td>
<td>Domestic</td>
<td>36,875</td>
<td>19,64</td>
<td>101,90</td>
</tr>
<tr>
<td></td>
<td>Foreign</td>
<td>150,892</td>
<td>80,36</td>
<td>95,35</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>187,767</td>
<td>100,00</td>
<td>96,57</td>
</tr>
<tr>
<td>2018</td>
<td>Domestic</td>
<td>36,187</td>
<td>18,61</td>
<td>101,94</td>
</tr>
<tr>
<td></td>
<td>Foreign</td>
<td>158,255</td>
<td>81,39</td>
<td>93,41</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>194,442</td>
<td>100,00</td>
<td>94,88</td>
</tr>
<tr>
<td>2017</td>
<td>Domestic</td>
<td>35,498</td>
<td>17,32</td>
<td>101,98</td>
</tr>
<tr>
<td></td>
<td>Foreign</td>
<td>169,419</td>
<td>82,68</td>
<td>94,82</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>204,917</td>
<td>100,00</td>
<td>95,98</td>
</tr>
<tr>
<td>2016</td>
<td>Domestic</td>
<td>34,810</td>
<td>16,30</td>
<td>/</td>
</tr>
<tr>
<td></td>
<td>Foreign</td>
<td>178,682</td>
<td>83,70</td>
<td>/</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>213,492</td>
<td>100,00</td>
<td>/</td>
</tr>
</tbody>
</table>

*Source: authors’ research*

Figure 5 shows the forecast of the overall number of tourist arrivals. The results indicate a continuous downward trend in total tourist arrivals in the period from 2016 to 2020. More specifically, in comparison to the actual data for 2016, predicted tourist arrivals in 2020 will decrease by 12.80%. Also, the prevalence of foreign tourism demand, together with the powerful effect of the seasonal component, continue to be present in the forecasting period.

As evident from Figure 6, which displays the forecasted values for domestic and foreign tourist arrivals, the predicted fall in total tourist arrivals is largely driven by a significant drop in foreign tourist arrivals. Namely, in comparison to the actual data for 2016, predicted foreign tourist arrivals in 2020 will decrease by 13.93%.

On the other side, domestic tourist arrivals indicate a continuous upward trend in the entire forecasted period. As in the previous period, future foreign tourist flow will continue to be affected by seasonality, unlike domestic tourist flow.
After modelling and forecasting the number of tourist arrivals, the forecast values were compared with the actual number of tourist arrivals in Rijeka for the year 2016 - a period for which the latest statistical data at the annual level are available.
The above figures demonstrate that tourism demand forecasts are in line with the trend of time series; in other words, the forecasts are in alignment with the actual data. This is also confirmed by MAPE values:

- Total arrivals forecast - MAPE 15.03322
- Domestic tourist arrivals forecast – MAPE 15.31565
- Foreign tourist arrivals forecast – MAPE 15.25278.
Given the MAPE values calculated, the forecast of future tourist flows is considered to be good (<20).

5. CONCLUSION

The study attempted to examine the trend in tourist arrivals in Rijeka over the last ten-year period and to forecast tourist arrivals in the near future. The time series analysis method was used to this end. The Hodrick-Prescott filter was applied to detrend the time series in the modelling process. Based on the identified characteristics of tourism demand in Rijeka over the observed period, the Holt-Winters triple exponential smoothing model was used for the short-term forecasting of tourist arrivals.

Research results indicate a significant prevalence of foreign tourism demand as well as a strong seasonal influence on the total number of tourist arrivals in Rijeka in the period from 2007 to 2016. A separate analysis of domestic and foreign tourist arrivals showed a considerable downward trend in domestic tourist arrivals in the observed period, contrary to an upward growth trend in the number of foreign tourist arrivals. Also, unlike domestic tourism demand in Rijeka, foreign tourism demand is especially affected by seasonality.

Forecasting analysis indicate a continuous downward trend in total tourist arrivals in the period from 2016 to 2020. More specifically, in comparison to the actual data for 2016, predicted tourist arrivals in 2020 will decrease by 12.80%. The predicted fall in total tourist arrivals is largely driven by a significant drop in foreign tourist arrivals. Namely, in comparison to the actual data for 2016, the predicted foreign tourist arrivals in 2020 will decrease by 13.93%. On the other side, domestic tourist arrivals are characterised by a continuous upward trend in the entire forecasted period.

The forecasted values of tourism demand from the first to the last quarter of 2016 - a period for which the latest statistical data at the annual level are available, match the time series trend, that is, they are in alignment with actual data. The MAPE values obtained indicate that the forecasting accuracy of the proposed model is good.

The study findings enable researchers to better understand tourism demand forecasting as a factor of efficient tourism planning. In this sense, the study also provides practical implications for destination management organisations and other tourism forecasters or policy makers.

REFERENCES


ASSESSMENT OF TOURIST GROUPS VISITING A REMARKABLE INTERNATIONAL SKI TOURISTIC CENTRE

Review
UDK: 338.48:796.9(436)
JEL classification: L83

Abstract

My essay is the third part of the survey which analyses the tourism of Austria and are systematically based on each other. My present survey is the result of the research and market research which was conducted at the beginning of February 2014. Timing and the ski region Obertauern made us possible to study the operation of the sub-branche in weather conditions which are characteristic of the main season in an internationally recognised ski resort. First of all, I wanted to find out the size of the area is that is affected by the demand of the destination, how long tourists stay in Obertauern, which accommodation they choose and what inspires them to opt for this ski centre. In addition, I analysed the basic difference between the possibilities offered to domestic and foreign tourists. As a final conclusion I was interested in the issue if there are any differences between the Austrian destinations which were analysed before and the currently studied destination.

Keywords: ski, Austria, destinations

1. INTRODUCTION, HYPOTHESIS

My essay is the third part of a survey which analyzes the tourism of Austria. The parts are systematically linked to each other. Based on my experience and some secondary data, I compared the development of the tourism in Hungary and Austria as well as the features of demand and supply in both countries in 2011. At the beginning of the winter saison (middle of December 2012), I was given the opportunity to study and analyse the Austrian ski region called Koralpe in person. My present survey shows the findings of this (market) research which was conducted on the spot at the beginning of February 2014.
Timing and the ski region Obertauern enabled us to study the operation of the sub-branch in weather conditions which are characteristic of the internationally recognised ski-resort in the main season. First of all, I wanted to find out the size of the area that is affected by the offer that the destination in question can provide. I analyzed how long tourist stay in Obertauern, which accommodation they choose and what inspires them to opt for Obertauern. In addition, I analysed the basic difference between the possibilities offered to domestic and foreign tourists. I was interested in the issue if regarding supply and demand there are any differences between Austrian destinations analysed before and the destination being subject to the present survey. “In many cases, people take advantage of the natural attractions of the spots that enable to carry out physical activities.” says Michalkó Gábor in his essay “Tourismology” (MICHALKÓ Gábor 2012:103).

In my essay, I briefly assess the primary attractions of the province Salzburg and ski-region Obertauern, their special services based on the above-mentioned features of the centre. The assessment is embedded in the corresponding references of the professional literature. In the second part of my essay, I evaluate the primary market research. After conducting the analysis, I focus on the main connections-conclusions and I confirm or deny some hypothesis, which are partly based on the research conducted by BRANDON M.J.Finn.

Related to my primary survey, I made the following hypothesis:
A: This destination is mainly visited by Austrian tourists.
B: Most of the tourists come from a distance of 500-800m km.
C: The vast majority of the tourists spend at least a week in the area of this destination.
D: The interviewees usually ski for pleasure.
E: The majority of the interviewees choose a hotel as accommodation.
F: Expenditures made by Hungarian tourists during their holidays don’t reach the average level.
G: 2/3 of the interviewees use other special services.
H: More than 50 % of the ski tourists visit Salzburg. Therefore, Obertauern is a touristic centre that is primarily based on its own attractions. Programs offered by this touristic centre are linked to important cultural elements.
I: Weather and natural features considerably influence the nationality structure and the holiday habits of the tourists.
2. **ASSESSMENT OF THE SKI-TOURISTIC FEATURES OF THE PROVINCE SALZBURG AND OBERTAUERN**

According to Gyuricza L., the province Salzburg has a complex touristic offer. “In addition to its world famous ski centers (Zell am See, Bischofshofen, Kaprun), sommer natural tourism is also remarkable (Kriml-waterfalls, Upper-Tauern national park, clifvalleys and Europe’s largest ice-cave called Eisriesenwelt, etc.” (GYURICZA László 2008:121). Besides health tourism and lakes located in the province Salzburg, it is an international cultural centre due to Mozart. In addition to German tourists, László Gyuricza mentions target groups from the overseas (American and Japanese tourists) as main market segments of the region. „Winter tourism is of great economic importance for the eastern Alpine regions of Europe” (MATZLER Kurt, FÜLLER Johann, FAULLANT Rita 2007:409).

We can see that there are several attractions on province level alongside with branches based on the height and the mountain climate which can be derived from the above mentioned features. On one hand, these attractions (thermal water, culture, etc.) may principally serve as complementary supply elements. On the other hand, services offered in Obertauern have “to cope with strong rivals”. It raises the question if complementary offer constitutes a competitive advantage for a village or another success key should be found. In general, we can raise the question if ski tourists only look for ski-related experience, complementary offer doesn’t play an important role in decision-making (Hypothesis H).

Based on Google map and my studies at university, I can say that the province Salzburg borders on Upper-Austria in the north, Tirol in the west, Steiermark in the east and Kärnten (which was analysed in my previous essay) in the south. However, in northwest, it has a common border with Germany. This location implies a considerable potential as far as the offer is concerned. As a part of the Eurasian Mountain system called Eastern-Alps, central areas lye between the Northern-and Southern-Alps which is a young chain mountain compressed from crystal stones. The Low-Tauern with its peak of 2862 meters called “Hochgolling” forms a part of it. The Radstädter-Tauern situated between the upper section Enns and Mur belongs to the large geographical group called Low-Tauern. The holiday resort Obertauern lies at a distance of about 15 457 km from the peak located at a sea-level of 1740 m. The sub river of the Danube called Enns comes north of the destination, in the region Radstadt. Obertauern lies at a distance of 395 km west of Győr. You can easily get there on the highway S6 from Semmering. The ski region called Obertauern Bergbahnen is divided into 2 ski areas: Obertauern and Grosseck which can be visited using 1 ticket. In the next part, I will analyse the touristic features of Obertauern in due consideration of its higher turnover. Obertauern is a ski area situated between the 2 peaks Gamsleitenspitz (2357 m) and Seekarspitz (2350 m). These peaks are 200 m higher than the areas in the Koralps since snow supply is provided from natural sources. It isn’t necessary to use snow canones. The 100 km long slope system operated from the end of November until the beginning of May.
goes up to a height of 2310 m. There are blue slopes with a length of 61 km, red slopes with a length of 35 km and black slopes in an area of 4 km. The red and green circle-shaped slopes can be considered as specialties of the ski region “Tauernmunde” which was mentioned by the tourists and can be visited in 2 directions: clockwise and counter-clockwise. The slope system called “Superseven” has an infrastructure linking the 7 highest peaks with the central circus valley where 7 elevators are used. On Mondays and Sundays, tourist can ski on illuminated slopes in the evenings. A snowboard park, electrical speed measuring points and 10 restaurants (so called Hütten) such as “Treffpunkt 2000” offer fantastic services to the tourists. In the vicinity of the slopes, there are 7 parking lots marked with signs P1-P7. There are constantly free parking spaces, tourists don’t have to wait. They can take buses free of charge that come from the holiday resort Radstadt and are never late. Tourists are informed about the next stop by an electrical display installed on the buses. At the ski elevators, tourists don’t have to queue since 6 stick lifts, 18 ski lifts, 1 cabin lift, 1 combined elevator are available to carry 49 208 people every hour. The elevators have fancy names such as “Grünwaldkopfbahn, Panoramabahn”. Some of them are suitable for carrying 6-10 persons. Some elevators are equipped with heated seats and protective windows that can be pulled down. Just to compare: 4 elevators are used next to 12 slopes in the Koralps. The daily ticket costs 8000 Ft compared to the corresponding price of 6000 Ft or in special cases 4000 Ft in the Koralps (when prices are reduced due to bad weather). As far as price-value relation is concerned, this difference seems to be reasonable. In Eplény, you have to pay 5000 Ft for a ticket which is valid for 8 hours. This isn’t too high in terms of price-value relation. We mustn’t forget that slopes in Eplény are shorter, so operators are expected to give a discount of 1000 Ft. Another price reduction granted on weekdays could improve the situation.

3. RESEARCH METHODOLOGY

We used questionnaires to get insight into winter holiday habits of tourists coming to Obertauern. The printed questionnaires were drafted in German and Hungarian language. In case of tourists having a good command of English, questions were asked in a translated version. The answers were recorded. The primary research was primarily conducted in elevators, huts and at accommodations. The questionnaires consisted of 20 questions, each question had a certain number. 9 of them were multiple-choice questions, one of them included an assessment scale, 1 question had an open end. I used a Microsoft Professional Plus Excel 2010 software and diagram-wizzard for compiling the answers. The questionnaires have been filled in by 146 tourists. The quantity of the sample is not to big, but well segmented. Besides basic data, questions referred to the motivation of the tourists, the infrastructure which was used, the expenditures made by the tourists, the effects of the economic crisis and the additional offer.
4. EVALUATION OF THE QUESTIONNAIRE MADE ABOUT WINTER HOLIDAY HABITS OF TOURISTS COMING TO OBERTAUERN WHICH IS KNOWN AS AN IMPORTANT INTERNATIONAL SKI TOURISTIC CENTRE

The first diagram shows the national diversity of the 146 interviewees. When analysing the answers given to the first question, there is a contrast compared to the survey conducted in the Koralps in 2012 (DARABOS Ferenc. 2014:4). The largest group of tourists amounting to 62 % come from Austria followed by Hungarians. The group of German tourists ranked on the fifth place with 6 %. Basically, the current research brought another result. The number of German tourists ranking first accounted for more than 50 % of the interviewees (56%) they were followed by Austrian tourists with 10,9 %. Hungarian tourists took the third place (8,2 %). In addition, it was interesting to see that tourists coming from the Benelux and Scandinavian countries play a more and more important role in tourism and remote destinations are getting more and more popular. My hypothesis “A” based on the experiences gained in the Koralps is as follows: “This destination is mainly visited by Austrian tourists. It turned out to be false.” Based on the questionnaires, we can say that tourists coming from the neighbouring Germany are provided good opportunities due to good traffic conditions and geographical location. German tourists like going to Austria to pursue their favourite sports there. Prices of services exceeding the average level are less reasonable for local tourists living nearby. According to the answers given to the first question of the questionnaire, neighbouring countries with less opportunities have a crucial part among the sending countries.
My second question focussed on the place of living which will be analysed in details together with the travel distance later. The 3rd question referred to the age of the interviewees (Figure 2). They have been divided into 4 age groups. Young (10-20 years), youngsters (20-30 years), middle-aged tourists (30- 50 years), old tourists (50-70 years).

![Figure 2 The structure of the interviewees according to the age person/ group](image)

*Source: own data collection Obertauern 2014*

Compared to the survey conducted in the Koralps interviewees were about 10 % younger. According to age distribution, interviewees were similar to those ones analyzed in the previous survey made in the Koralps: 8 % were junior, 42 % young, 32 % middle-aged, and 15 % elderly. The sport is very popular among people between 20 and 30 as well as with middle-aged tourists. My 4th question was about the gender structure of the interviewees: 56,2 % of the interviewees were male and 43,8% female (Figure 3)

![Figure 3 Structure of the interviewees according to their gender / % n=146](image)

*Source: own data collection Obertauern 2014*
Question 4 referred to the travel distance which had to be covered by the interviewees (Figure 4). The second part of the question was about the duration of stay. After compiling the data, I divided the travel distance into 4 categories: 0-200 km, 200-500 km, 500-800 km and more than 800 km.

![Figure 4 Travel distance covered by the interviewees / person](image)

*Source: own data collection Obertauern 2014*

The results were very informative. In my hypothesis, I assumed that most of the tourists come from a medium distance (500-800 km). However, there were large groups coming from the region of Berlin and the area north and west of this region (Mönchengladbach). Dutch (Rotterdam), Danish (Copenhagen), Scottish (Scotland), Estonian and Litvanian and Roumanian (Bucharest) spots (even the Australian sending town Perth) were also indicated in the answers.

Therefore, my hypothesis “B” according to which: “**Most of the tourists come from a distance of 500-800 km**” was not confirmed. **More than a half of the interviewees, i. e. 52 % came from regions lying at a distance of more than 800 km from Obertauern.** Ski tourists coming from the areas located south of Berlin or Eastern-Middle Europe and covering a distance of 500-800 km have nearly the same proportion with 24,6 %. The same applies to the tourists coming from a distance of 200-500 km (19 % Munich or Győr). There is only a small number of tourists who came from regions situated nearby (4 %). We can say that Obertauern is a really well-functioning touristic centre. The attractive power of the region reaches the northern and eastern European countries, even overseas. Because of the great distances public roads are irrelevant way of travelling. Flying by plane is the most common option.
Replies given to the second part of the question have confirmed my hypothesis “C” according to which: “The vast majority of the tourists spend at least a week in the area of the chosen destination”. Nearly half of the interviewees spend one week or more in Obertauern (Figure 5). Because of longer travel distances, it is absolutely reasonable that so many tourists opt for a longer duration of stay. There is a tiny group of tourists who spend only 1 day at their destination. This is controversial to the results of the survey where this group prevailed. The difference can be derived from the difference in the quality of the slopes and the corresponding price level as well as from the different time of interviewing tourists in the Koralps.

Figure 5 Location of the interviewees / % n=146
Source: own data collection Obertauern 2014

Question 6 was asked about the frequency of ski holidays in the winter season. 65.7% of the interviewees told to make winter holiday only once a year. After a huge gap, 12.3% of the interviewees make winter holiday twice or 3 times a year. 9.6% of the interviewees go on ski holiday 4 times in the season. Two thirds of the interviewees make winter holiday only once a year visiting Obertauern what enhances the prestige and reputation of this ski centre.

Question 7 focused on the issue why the interviewees chose this destination. More answers were acceptable at the same time. Altogether 200 votes have been casted. The highest number of the votes (exactly 46 votes) was given for the simple slope system, 34 votes were casted for big variety of slopes and 28 votes have been given for snow supply in the region. 16 votes were given for the recommendation, 12 for good location, and the vicinity of the airport of Salzburg. Many people considered their routine and the natural beauty to be important (10 votes) and the possibility to ski on the slope in a circle (8 votes), 2 votes were given to the origin, to huts, the ranking among the top 5 Austrian resorts, the price value relation, the education and the company. Primarily, the
decision of the tourists to make holiday in Obertauern wasn’t only determined by prestige issues, but also by practical aspects and practicability. Many people considered promotion as really important and the rumours have been one of the best ways of promotion until now. Question 8 was about other ski centres which had been chosen by the tourists. Most of them are famous Austrian ski regions such as Schladming, Salbach, Zauchensee, Kittssteinhorn. Koralpe wasn’t indicated among the answers, but Eplény was named in the answers 6 times due to the fact that Hungarians were also interviewed.

Question 9 was about the types of motivation determining the decision about ski holiday (Figure 6). The tourists were given the opportunity to choose more answers. About 2/3 of the answerers said that skiing was only hobby and was done just for fun. Active relaxation was only indicated in 15 % of the answers, but it ranked 2. Enhancement of the adrenalin level was the 3rd most important motivation factor with 14 votes. My hypothesis “D” proved to be true: “The interviewees usually ski for pleasure”.

![Figure 6 Proportion of the innovation factors of the interviewees according to their type / % n=172](source: own data collection Obertauern 2014)

Question 10 was about the types of accommodation which were chosen by the tourists (Figure 7). Question 11 referred to the distance between the accommodation and the ski slopes (Figure 8). As a result of the compilation, my hypothesis “E” according to which “The majority of the interviewees choose a hotel as accommodation” proved to be true.

60 % of the 146 interviewees stayed at a hotel. Nearly 60 % of the interviewees had an accommodation next to the slope. (further 22 % chose an accommodation located at a distance of 10-20 km from the slope, 11 % of the tourists stayed at an accommodation situated at a distance of 10 km). Private apartments ranking on the 2.place were chosen in 22 % of the answers. In case of the Koralps, this proportion was contradictive, because of the reasons
described in question 5. Pensions aren’t popular types of accommodation in the ski tourism for 2 seasons: on one hand because of the lack of practical utilisation, on the other hand due to slope quality. The hotel as a high quality type of accommodation can satisfy the needs of well-off tourists coming from further regions.

![Figure 7: Type of accommodation chosen by the interviewees / person](Source: own data collection Obertauern 2014)

![Figure 8: Distance of the accommodation chosen by the interviewees from the slope / person](Source: own data collection Obertauern 2014)

By asking question 12, we wanted to enquire about the expenditures made by the tourists during their holiday. Only 100 interviewees gave reasonable answers to this question. Based on Figure 9, a top category can be established where tourists spend 1000-4000 EUR during their holiday. This group accounts for 34 % of the interviewees. After that I made a bottom category including
tourists with an expenditure of 700-800 EUR, 12 % of the interviewees could be divided into this category. At the top of the middle category, there are tourists making an expenditure of 600 EUR and accounting for 28 % of the interviewees. I have established a middle category. Interviewees (6%) making expenditures of 5000 EUR belong to this category. Expenditures less than 500 EUR belong to the lowest category with a proportion of 10 %. Incentive guests sponsored by their company and ski teachers also account for 10 %. Tourists coming from German sending areas, Austrians and guests coming from further located areas belong to the top category. Hungarian tourists represent the same proportion in the under middle and bottom category. On average, interviewees spend 1071 EUR. According to the findings of the survey conducted in the Koralps, the average expenditure was 585 EUR. The nearly double difference confirms the remarkable difference between the living standards of tourists visiting these 2 destinations which was analyzed before and the difference between the price level of the 2 destinations which was described in the introduction. The average expenditures made by Hungarian tourists were 300 EUR. As for the expenditures, we don’t reach the average level. The social layer consisting of entrepreneurs approaches the middle category. Tourists working as employees are “condemned” to the lowest category. My hypothesis “F” according to which “Expenditures made by Hungarian tourists during their holidays don’t reach the average level” proved to be absolutely right.

![Figure 9 Planned expenditures of interviewees made during their holiday / person](source: own data collection Obertauern 2014)

Question 13-16 referred to the reactions given to the economic crisis such as reduction of expenditures and the number of travels. Figure 10 clearly shows that 90 % of the interviewees making holiday in Obertauern didn’t react to the crisis by reducing their expenditures in connection with winter holidays. The group reducing the expenditures and accounting for 10 % consisted of Hungarians and Slowakians. As far as reduction of the number of trips is concerned, the
above-mentioned proportion was 96 %. Austrian, Slowakian and Hungarian interviewees decided to reduce their expenditures by decreasing the duration of stay by 2 days and choosing only one holiday a year. Some German guests told us not to understand the question because they didn’t even notice the crisis.

Figure 10 Reactions of the interviewees given to the economic crisis / person
Source: own data collection Obertauern 2014

Question 17-18 referred to the intention of tourists to make use of other services as well as to their names.

Figure 11 Intention of the interviewees to make use of other services / person
Source: own data collection Obertauern 2014
As shown in the figures 11-12, a bit more than the half of the interviewees (54.7%) made use of other services. The vast majority of the tourists coming to Obertauern chose this destination because of the skiing facilities. My hypothesis “G” according to which “2/3 of the interviewees use other special services” didn’t prove to be right. The question 12 could be answered in several ways. Of the 128 answers, the frequency of wellness was very high (50 answers) due to the weather conditions. In addition, sauna and gastronomy could also be highlighted. As far as sports are concerned, cross country skiing, hiking and rock climbing played an important role. Hungarian tourists showed interest towards the culture as well. Questions 19-20 referred to the visit of Salzburg lying at a distance of 100 km north of Obertauern. With these questions, we also aimed to find out the reasons of a visit in Salzburg. Based on Figure 13, we can say that 80.8% of the interviewees didn’t visit the hometown of Mozart. 64% of the interviewees claimed that activities resulting from skiing constituted the main reason for their choice. Lack of time and earlier visits were also indicated among the reasons. Interviewees answering the question with “yes” mentioned the regional attractive power, the central location alongside with the airport, shopping facilities and business relations among the advantages of the ski resort. My hypothesis “H” according to which “more than 50% of the ski tourists visit Salzburg and therefore Obertauern is a touristic centre due to its own attractions, programs and some important cultural elements” was partly proved to be right (Figure 13.). Particularly, the second part of the hypothesis couldn’t be confirmed. The sortiment is completed by cultural elements which are shown in the Figure 12. But these elements are
only complementary and marginal. Brandon F. also shares this view: There was minimal evidence supporting the influence of culture on the choice of ski destination (BRANDON M.J.Finn 2012:64).

As a result of my survey, I can say that my hypothesis “I” according to which “weather and natural features considerably influence the nationality structure and holiday habits of the tourists” has been confirmed. This can be proved by the survey conducted in the Koralps and the experiences of the present research and its above-mentioned differences as well.

**CONCLUSIONS**

Figures of the survey made in the Koralps result from the smaller slope size, the poorer variety of infrastructure, the partly stormy weather and the different timing. It is supported by the statement made by Klenosky (1993) which says: “skiers want to be challenged and to have a variety of choices and thus are concerned with the difficulty of the trails. However, it was also found that skiers had a concern for their well-being and safety, which were clustered with grooming and snow conditions” (BRANDON M.J.Finn 2012:16). We can say that Obertauern is an internationally recognized and industrially operated touristic centre with excellent performance. It has a Transeuropean and a global attractive power. The above-mentioned statements can be confirmed by the figures about the travelling habits of tourists, the duration of their stay and their spendings. Prosperity of the destination considerably depends on the intensity of tourism generated by the German sending market and the economic performance of the sending area. As for the Hungarian sending market, we can say that types of accommodation chosen by Hungarian tourists belong to the cheaper categories and spending (expenditures) made by Hungarian tourists fall behind the average.
In general, tourists make reasonable and calculable decisions which are determined by attraction elements called hard factors such as followability of the slope system and quality, snow security and accessibility. It is supported by the statement made by Richards (1996) which says: „In terms of factors affecting ski destination choice, snow conditions was the most important.” In addition, tourists put a great emphasis on their accommodation and the opinion of their acquaintances besides their own experiences. Certain amenities of the ski resort that skiers found important also affected their perception of the resort’s economic value (BRANDON M.J.Finn 2012:60). The vast majority of the tourists don’t feel the economy crisis and they constitute tourists groups that are ready to spend much money and primarily focus on skiing. Brandon F. also shares this view: “The participants were willing to pay a little more if they felt it were to be getting a better value for their money” (BRANDON M.J.Finn 2012:60).

In case of the above-mentioned target group, other leisure activities play only a marginal role in terms of demand. According to the sample, tourists visiting ski resorts with a quality like Obertauern can provide are guests who can easily be targeted and have a great spending potential and are ready to travel.

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Abstract

The main aim of the article is to present the results of the analysis concerning the role of territorial cooperation in the development of nautical tourism in the Southern Baltic rim. The Member States of the European Union have the opportunity to obtain financial support for the implementation of various types of projects. Many projects are realized in the cross-border, transnational and inter-regional cooperation. Examples of such projects include activities aimed at popularizing cross-border water areas, building new yacht ports and modernizing and developing existing port infrastructure. The aim is to increase the competitiveness, cohesion and sustainable development of the South Baltic Sea Region, as well as strengthening the integration of people and institutions. The analysis presents two international projects: MARRIAGE and South Coast Baltic implemented by states located in the Southern Baltic rim to develop nautical tourism in this area. The article also highlights the selected aspects of managing European programs and projects.

Keywords: territorial cooperation, nautical tourism, management
1. INTRODUCTION

This region is very heterogeneous in terms of the state of nautical tourism. This heterogeneity results primarily from historical conditions. After the Second World War, the development of sailing in Poland and Lithuania (belonging to the USSR) was suppressed. This applied in particular to sailing on cross-border waters. There were restrictions on movement in these areas due to the inability to freely cross national borders (Urbańczyk, 2013, p. 364). The existing sailing infrastructure has declined and new investments have not been realized for decades. As far as Poland is concerned, it was also significant that, as a result of territorial changes after 1945, areas with conditions favouring the development of sailing were predominantly inhabited by displaced people from typical land areas. Among new residents there was no sailing tradition. The implemented policy, as well as the mutual reluctance resulting from war experiences, was also not conducive to the cooperation of existing sailing communities.

Isolation and long-term lack of investment have contributed to deepening the differences in opportunities for sailing in these areas. At that time in Germany, Denmark and other Baltic states belonging to the West Bloc, the policy focused on the use of natural assets and the development of sailing. Their actions focused on cultivating the traditions associated with it, emphasizing the marine character of individual towns, modernizing and building new infrastructure of ports and marinas. Due to the limited availability of Polish and Lithuanian yacht ports for foreign sailors and their poor technical condition, they have disappeared for years from the sailing map of Europe.

It was only a change of regime, and then the accession of Poland and Lithuania to the European Union, which took place on 1 May 2004, that brought a chance to change the existing situation. It has become possible to raise funds for the modernization of the existing ports and to build a new nautical base. The accession of these two states to the Schengen zone on 21 December 2007 and since 30 March 2008 the free movement of boats and crossing borders without the need for border checks gave the opportunity to increase the number of sailing people across the cross-border waters such as the Szczecin Lagoon and the Baltic Sea.

These changes are not beneficial only to countries where sailing was less popular. The new destinations have contributed to the increase of the attractiveness of the whole Baltic Sea. In addition, the development of ports and marinas in Poland and Lithuania, as well as the richness of the local societies, has created a growing interest in sailing. The freedom of crossing borders makes it possible for sailors to visit the ports of Germany, Denmark and Sweden.

The possibility of crossing borders in a free manner, however, applies not only to the countries closest to these borders. Nautical tourism is also developing in other European regions. Sailors can use offers from Croatia,
Greece, Italy, Spain and the United Kingdom. According to the Polski Rynek Żeglarski 2016 report, the Baltic countries are only in the fifth position among Polish tourists sailing abroad. The areas with warmer climates are much more popular (Polski Rynek…, 2016, p. 84).

Similar situation can be found in other Baltic States. Therefore, these countries are undertaking cooperation, which can be considered in two ways: narrow and broad.

Narrow cooperation means stimulating demand in the region (in this case in the Southern Baltic rim). This activity is realized by undertaking intensive promotional and educational activities aimed at encouraging people to sailing. As a consequence, it is expected to lead to an increase in the number of tourists, mainly from the cooperating countries.

Broad cooperation is targeted at attracting tourists from non-cooperating countries. This aims to create and strengthen the image of the region as an attractive sailing destination, competing with other popular European destinations. Competitiveness in this case is understood as the ability to acquire higher ranking positions than other regions in attractiveness and attract more tourists (Bristow, 2011, pp. 344-345).

International cooperation can be realized through, for example, meetings and conferences, the development of common visions and strategies, the conclusion of agreements and the implementation of international cross-border projects (Kizielewicz, 2012, p. 29). And this form of cooperation is the subject of this article.

In order to establish cooperation for the purpose of intensifying tourism, first it is necessary to prepare the region to welcome tourists. This is a complex action, consisting in ensuring the ability to reach the region and meet the various needs of tourists (Niezgoda, 2012, p. 237). In this case the appropriate sailing infrastructure should be considered as the basis for such actions.

As mentioned earlier, sailing traditions in the countries of the described region are different, as well as the degree of infrastructure development. In Poland and Lithuania, funds for the construction and modernization of yachting ports came only after accession to the European Union.

In Poland, the two most important projects for the development of the sailing base were the West Pomeranian Sailing Route and the Żuławy Loop.

The West Pomeranian Sailing Route is one of the flagship tourist products of the West Pomeranian Voivodship and undoubtedly the biggest investment for the development of sailing in Poland. Nautical tourism in Germany and Denmark is more popular and the marinas are usually better equipped in terms of infrastructure than in Poland and Lithuania. In spite of all, there is still a need for development in this area (Biedenkapp, A., & Stührmann, E., 2004, p. 8).
It is a network of forty ports and marinas of West Pomeranian along the Oder River, Szczecin Lagoon and the Baltic Sea. Its length is estimated at 380 km. It connects the largest waters of north-western Poland and the adjacent towns (marinapogon.pl, accessed 30.01.2017).

It was created within the framework of the West Pomeranian Sailing Route project *Zachodniopomorski Szlak Żeglarski – sieć portów turystycznych Pomorza Zachodniego*, which was partially financed from the funds from the Operational Program Innovative Economy 2007-2013, Measure 6.4. *Investments in tourism products of supra-regional importance*. In addition, the development of the infrastructure was implemented from the funds of the Regional Operational Program of the West Pomeranian Voivodship, and some local governments also benefited from the INTERREG IVA programs supporting cross-border activities. The total value of the Project has been estimated at PLN 93 255 875.97 with PLN 35 280 000.00 of funds from the grant (www.zrot.pl, accessed 30.01.2017).

As part of its implementation, the existing infrastructure of yacht ports has been modernized and new ports have been built. It was assumed that the distance between facilities belonging to the network should not exceed 20-30 nautical miles. Such a distance was considered to be a viable in a few hours of calm sailing (Locja..., p. 7).

The basic aim of the project was the development of sailing tourism in the West Pomeranian Voivodship. The idea was to make Polish sailors and those from other European countries aware of this sailing region (Owczarski, 2011, p. 46).

The second mentioned project is Żuławy Loop. It includes 34 harbours and marinas of the Vistula Delta and the Vistula Lagoon. The Loop is part of the E70 International Waterway running from Rotterdam, through the Berlin waterway junction, north Poland, to Kaliningrad, and further by the Neman Waterway (Prego and Dejmu to Klaipeda). The construction and renovation of the ports was also carried out using EU funds. They came from the Operational Program Innovative Economy 2007–2013 Measure 6.4 *Investments in tourism products of supra-regional importance* (www.petla-zulawska.pl, accessed 3.05.2017).

These projects undoubtedly contributed to the popularization of sailing tourism in Poland. In addition, the port infrastructure that has been built and modernized has become the basis for international cooperation. Owing to the investments made, Poland may be a partner in undertaking activities for the development of sailing in the Baltic Sea region.

The main aim of the article is to present selected projects with a cross-border dimension aimed at the development of nautical tourism in the Southern Baltic rim. The research hypothesis is that the differences between the cooperating countries regarding the development of infrastructure and the sailing traditions do not constitute an obstacle for cooperation. Each country can become a beneficiary as the goal of joint efforts is to build a competitive
advantage for the whole region, resulting in an increasing number of sailors visiting ports in all countries.

This research is based on the method of documentary research, participant observation, expert methodology and in-depth interview method.

2. MARRIAGE AND SOUTH COAST BALTIC PROJECTS AS EXAMPLE OF EUROPEAN TERRITORIAL COOPERATION FOR TOURISM DEVELOPMENT

Examples of cross-border, transnational and interregional cooperation undertaken in recent years and oriented towards the development of sailing tourism in the Baltic Sea Region (both broad and narrow) may be MARRIAGE and South Coast Baltic projects.

MARRIAGE (better marina management, harbour network consolidation and water tourism marketing in the southern Baltic rim) was implemented in 2011-2015. Although there are still large infrastructure disparities between the countries involved in the project, it has focused on improving yacht port management and joint promotion (Forkiewicz, 2015, p. 289).

South Coast Baltic (Establishing durable cross-border boating destination management on the basis of the MARRIAGE cooperation network) project is a continuation of the MARRIAGE project. It began in October 2016 and will be completed September 30, 2019. (southbaltic.eu, accessed 2.05.2017).

The basic information for both projects is presented in Table 1.

According to the information presented in Table 1, the South Coast Baltic (SCB) project not only continues but also extends the MARRIAGE project. Target group was expanded for motor boaters. In addition, the scope of marketing activities was also expanded, including Scandinavian countries, apart from Poland, Germany, Lithuania and Russia. In addition, emphasis is placed on issues related to the standard of services. It is worth noting that the South Coast Baltic project is planning to invest in pilot investments that will provide facilities for the elderly and environmentally friendly solutions at selected marinas. The need to pay attention to the needs of tourists belonging to this segment results from changes in the age structure of the population observed in all European countries. The growing share of sailing seniors has been confirmed by research conducted in Germany in 2013 (Wasserturismus ..., p. 19).

In both projects, emphasis is placed on building the image of the region. The implementation of this objective is subject to the measures shown in Figure 2.
### Table 1

Comparison of MARRIAGE and South Coast Baltic projects

<table>
<thead>
<tr>
<th>Details</th>
<th>MARRIAGE</th>
<th>SOUTH COAST BALTIC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Budget</strong></td>
<td>EUR 1.24 million (ERDF co-financing EUR 1.06 million)</td>
<td>EUR 2.52 million (ERDF co-financing EUR 2.13 million)</td>
</tr>
<tr>
<td><strong>Number of countries participating in the project</strong></td>
<td>4 (Germany, Poland, Russia, Lithuania)</td>
<td>4 (Germany, Poland, Denmark, Lithuania)</td>
</tr>
<tr>
<td><strong>Number of entities participating in the project</strong></td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td><strong>Target groups</strong></td>
<td>- sailors on yachts sailing from Poland, Germany, Russia and Lithuania, - yacht owners seeking berths for their craft, - organizers of sailing regattas and cruises in the Baltic Sea, - charter companies.</td>
<td>- sailors on yachts and motor boaters sailing from Poland, Germany, Russia, Lithuania, and in addition from Sweden, Denmark, Finland and the Netherlands - yacht owners seeking berths for their craft, - organizers of sailing regattas and cruises in the Baltic Sea, - charter companies.</td>
</tr>
<tr>
<td><strong>Main goal</strong></td>
<td>- cooperation and exchange in water tourism marketing, marina management and operation - consolidation of the marina network in the southern Baltic rim - increase the incomes from water tourism in the participating regions.</td>
<td>- deepening the destination building process - extending the joint marketing (accessing new target markets) - establishing higher and more unify quality standards for marina facilities and services across the region -pilot investments (the elderly and eco-friendly marinas) - establishing a permanent DMO (Destination Management Organization).</td>
</tr>
</tbody>
</table>

*Source: own study based on www.project-marriage.net, accessed 25.05.2017, southcoastbaltic.eu, accessed 25.05.2017*
Marketing of tourist destinations is part of the so-called territorial marketing, which should not be understood only as the creation of a promotional message to “sell” a given area (Zawistowska, Dębski, Górsk-Warszewicz, 2014, p.139). The product must be so prepared to meet the needs of the travellers by making them satisfied. As indicated by N. Šerić and T. Luković, marketing strategies for the tourist destination with a special ambience value need to be unified on the tourist market (N. Šerić, T. Luković, 2009). For both projects, marketing efforts will strengthen the image of the Southern Baltic rim as a regional, supraregional tourist product that is competitive to other European destinations attractive for sailors. As part of the marketing activities undertaken, there is also participation in sailing fairs and promotion of brands, joint promotional materials and port guides.

Marina staff training is intended to increase the level of customer satisfaction. Consequently, boaters might want to visit these facilities again. Tourist demand may be restructured and it should be the goal.

Adaptation of infrastructure and port offer to the various tourist segments (including the elderly and the disabled) will increase the number of potential customers.

The SCB project is designed to provide educational activities not only for marina staff, but also for students. In the future they may work in tourism-related institutions, and the acquired knowledge during the studies should
translate into initiation of activities for the development of nautical tourism.

A prerequisite for the proper conduct of the assumed activities is to accurately identify the needs of potential consumers. Therefore, it is necessary to carry out market research. Such research was planned within the SCB project.

As mentioned earlier, the MARRIAGE project has already been completed. It is therefore possible to determine the effects achieved, among others (Papers of the SCB project partners, 2017):

1. Long-term cooperation agreement signed with projects partners, associated organizations and third parties.
2. 57 500 EUR of private investments.
3. 34% increase of foreign guests from Germany, Poland, Russia and Latvia.
4. 435 760 potential customers reached via the fair visits.
5. 20 marinas with improved management and operation schemes.
6. 67 trained staff members of marinas in the southern Baltic rim.
7. 10 new PPPs agreed between infrastructure owners and operator/developer.

Although the achieved effects of the MARRIAGE project may seem impressive, there is still much to be done. This is confirmed by the results of a study conducted by experts during the first working meeting of SCB project partners. Experts are managers of the port networks in the German state of Vorpommern, on the Danish island of Bornholm, in Poland in the West Pomeranian and Pomeranian voivodships, in the Russian Kaliningrad District and in Lithuanian Klaipeda.

All experts were asked to rate on a scale from 1 to 5 (where 1 is the least and 5 is the most) selected areas of nautical tourism in their regions. Their responses were clarified using the in-depth interview method used by the authors of the article.

The analysis of information in Table 2 allows drawing conclusions about the degree of satisfaction expressed by country experts in four different areas related to nautical tourism. The highest overall rating was obtained with respect to the marina infrastructure and services. Definitely the lowest in terms of number of boaters. Experts’ opinions differ among themselves in each of the analysed areas. The highest degree of satisfaction was given by the representative of Bornholm who expressed moderate satisfaction in terms of the number of sailors. However, this was one of the higher ratings in this area. A representative of the West Pomeranian had a similar position, where nautical tourism has no such traditions as Bornholm. The most critical opinion was presented by an expert from Kaliningrad. A more favourable assessment was also proposed by the Pomeranian representative.
Selected areas of nautical tourism according to expert opinion

<table>
<thead>
<tr>
<th>Region</th>
<th>Cooperation with tourist boards</th>
<th>Guest boaters volumes</th>
<th>Harbour network</th>
<th>Marina infrastructure and services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Vorpommern (Germany)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Bornholm (Denmark)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>West Pomerania (Poland)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Pomerania (Poland)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Kaliningrad * (Russia)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Klaipeda (Lithuania)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Total score 14 11 19 20
Percentage share in the possible number of points 14/30=47% 11/30=37% 19/30=63% 20/30=67%

Note: *Russia is not a partner in the SCB project, but an expert from this country was invited to participate in the MARRIAGE project.

Source: Own study based on the expert opinions presented at the working meeting of SCB project partners (16.05.2017)

The research showed that despite cross-border cooperation lasting for several years e.g. in MARRIAGE project, there are still significant differences between the various regions in terms of different areas of nautical tourism. Full satisfaction, but concerning only two of the four areas assessed, was declared only by expert from Bornholm. Other respondents in all assessed areas indicated (to varying degrees) the need for their improvement. This demonstrates that the continuation of MARRIAGE activities is needed and the SCB Project is justified.

3. FINANCIAL INSTRUMENTS SUPPORTING EUROPEAN TERRITORIAL COOPERATION

According to information on project financing, the main sources are the European Territorial Cooperation Programs. In principle, cooperation is required to use these instruments. Undertaking such activities, involving public and private entities, i.e. tourism companies, local government units and tourist organizations, seem to be the basis for a comprehensive development of touristic offer (Panasiuk, 2014, p. 299).

Cross-border, transnational and interregional cooperation was and is being implemented within the framework of a separate objective of the European Union’s cohesion policy - European territorial cooperation 2007–2013 and 2014–
2020. A separate objective of cohesion policy points to the importance of joint ventures undertaken by several partners. Taking into account territorial cohesion, in addition to economic and social ones, was an important moment in shaping the European Union’s development policy. The EU documents mention, inter alia, the importance of territorial integration of cross-border and transnational functional regions, securing global competitiveness of regions based on strong local economies and improving territorial accessibility for individuals, communities and businesses (Zaucha, Brodzicki, Ciołek, Komornicki, Mogiła, Szlachta, Zaleski, 2015, p. 285).

There are many programs under this initiative. For example, these are South Baltic Cross-border Co-operation Programme 2007–2013 and its continuation of the Interreg South Baltic Programme 2014–2020. The purpose of these programs is to strengthen the sustainable development of the Southern Baltic rim by joint actions enhancing its competitiveness and strengthening integration between people and institutions. The total budget of the 2007-2013 programs was approximately EUR 75 million, including around EUR 61 million from the European Regional Development Fund. For the 2014-2020 period, more than EUR 83 million (from the European Regional Development Fund) is planned. The area of support is the coastal regions of the five member states of the European Union: Denmark, Lithuania, Germany, Poland and Sweden.

In the documents of the current financial perspective, the main objective is: ‘to increase the potential of the Baltic Sea region through cross-border cooperation’. There are blue and green growth definitions that have been properly defined. Green growth is a term to describe a path of economic growth that utilises natural resources in a sustainable manner. It implies fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which the well-being of the current and future generations relies. Blue Growth is part of the Europe 2020 strategy and addresses the economic potential of the oceans, seas and coasts for sustainable growth and jobs. It is to be developed in harmony with the marine environment and through cooperation between public and private partners. (Interreg South Baltic…, 2016, pp. 4–5) Moreover, tourism has been included in the green economy as a sustainable (green/eco) tourism as well as in the blue economy - coastal and cruise tourism.

According to data of 25.05.2017, up to now under specific objective 2.1. “Sustainable tourism” funding for 9 projects was awarded, among all 22 so-called regular projects. Poland is participating in all of them, and is a leader in three. One such project is the SCB project mentioned earlier.

It should be added that three further projects have also been co-financed as Seed Money, i.e. financial support for project proposal preparation in the next competition (southbaltic.eu, accessed 25.05.2017).

The selection of projects for funding takes place by means of a competition procedure. The program website publishes information on the number of applications submitted, and then lists the projects that have won the
competition. Each application passes formal assessment and eligibility. The administrative criteria relate mainly to complex documents, i.e. their proper fulfilment and compliance with all formal requirements. Eligibility criteria are, in particular, the fulfilment of minimum partnership requirements (at least 2 partners from two program member states), compliance with program priorities and co-financing. At the next stage a qualitative assessment is carried out, referring to the strategic and operational characteristics of the project. The strategic assessment is mainly about determining the scope of the project’s contribution to achieving the program’s objectives. It also tries to answer the question whether its implementation is justified in terms of common European territorial challenges, i.e. sustainable development, equal opportunities, non-discrimination, gender equality and environmental impact. It is important at this stage to identify the added value that cooperation brings and to what extent the composition of the project partnership will address the issues of territorial challenges. The operational assessment determines the viability and feasibility of the proposed projects and covers the following issues: management, promotion, work plan and budget. The management area defines the adequacy of the proposed management structure to the size and needs of the project, and evaluates the experience of the lead partner in the management of international projects. Under the promotion criterion, appropriate marketing measures are applied in the context of reaching target groups and stakeholders. The work plan and budget are assessed in terms of their feasibility, consistency and the right price/performance ratio. In addition, applications are subject to state aid assessment. (Interreg South Baltic…, 2016, pp. 85–91)

4. CONCLUSIONS

The waters of the South Baltic are very attractive to boaters. Due to historical circumstances, however, it is differentiated in the extent of the development of navigational infrastructure and the level and availability of nautical tourism services. The ability to freely cross borders and wide availability of information on various European sailing destinations means that in the case of cross-border water, it is insufficient to attract tourists only at the level of one region or state. It is essential to combine activities and create a common image and branding of the whole water area. The article presents two international projects implemented by states located in the Southern Baltic rim. The MARRIAGE project was completed in 2015, which allowed presenting its effects. Although these effects are very measurable, it is clearly necessary to continue the cooperation. This is done in the SCB project, the basic assumptions of which have also been presented in the article. The project is attended by countries such as Germany, Poland, Denmark and Lithuania, which are characterized by varying degrees of development of nautical tourism and related infrastructure. However, they all perceive the potential benefits of implementing projects.

The article also presents selected financial instruments of the European Union, which largely determine the undertaking of international cooperation.
Nautical tourism is part of the green economy – as sustainable (green/eco) tourism and the blue economy – coastal and cruise tourism, part of the Europe 2020 strategy.

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GENERATION INVESTIGATIONS IN THE
WELLNESS TOURISM IN HUNGARY

Original scientific paper
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JEL classification: L83, I10

Abstract

In the initial phase of our research we investigated the spectrum of health tourism. We reviewed the related international reference literature and its conceptual development. We conducted a large sample survey based on Ardell’s model for the analysis of the Hungarian wellness tourism. Our research results showed significant differences in the wellness habits of the different generations. Due to this we paid special attention to Generation Y. Using our primary and secondary research work we investigate that to which extent does the wellness philosophy apply to Generation Y of the Hungarian wellness tourists. The results of our questionnaire survey may contribute, as a guide, to the deeper knowledge of the relation of the inland tourists from the Hungarian Generation Y to the wellness and their needs. We model our empirical research results in an innovative way using the five love languages, which may be a practical guide for the providers to raise the interest of and address Generation Y in wellness facilities. According to our observation this may contribute to the reinforcement of the individuality of the wellness providers. Due to this the service is coupled with such a unique function which makes the provider unique and its service can appear on the market as a Unique Selling Product.

Keywords: wellness models, Generation Y, five love languages
1. INTRODUCTION

Tourism is one of the key branches of today’s economy. Europe is the most visited region of the world with its arrival rate of 620 million a year and the future prospects are also promising a growth rate of approximately 2.5% per year until 2030 according to UNWTO Tourism Highlights, 2016 (http://www.e-unwto.org/doi/pdf/10.18111/9789284418145).

This is especially true to the health tourism which is, according to the 2008 study of Institut für Freizeitwirtschaft (Árpási, 2014), will have expanded with 40% by 2020.

In our times, due to civilization hazards, rushing lifestyle and the health trends, the role of wellness tourism is being appreciated. The satisfaction of the multi-generational tourists poses a permanent challenge for the wellness providers. (Pendergast, 2010)

According to this special attention was paid to the Y Generation in our research. The theoretical overview of our study focuses on two areas, partly on the wellness tourism spectrum and partly on the general characteristics of the Y Generation. In our primary research, the emphasis is also on the investigated generation and as a result of the questionnaire survey we make a proposal for them to plan the offers and marketing communications of the service.

2. LITERATURE REVIEW

The two constituents of the health tourism are the wellness tourism and the medicinal tourism. (Müller, Kaufmann 2000; Rátz 2004; Albel, Tokaji 2006; Ruszinkó 2006; Aquaprofit 2007; Smith, Puczkó 2010; Molnár 2011; Resiak-Urbanowicz, Printz-Markó 2011; Michalkó 2012). Based on the processing of the related Hungarian and international literature it can be stated that every nation incorporates their own characteristics into the definition of health tourism. As a result of the synthesis of the various approaches Printz-Markó (2016) defines the spectrum of the health tourism in the following (Figure 1).
The novelty of Printz-Markó’s (2016) approach is the modelling of the body-mind-soul dimension in the spectrum of health tourism. The human centered approach is a feedback for the view of ‘wellness godfathers’ Dunn (1961), Travis (1975) and Ardell (1977). Furthermore it gives a new aspect to the conceptional system of the health tourism from an intellectual, mental and physical point of view. Besides, it takes the demand and supply trends into consideration.

Our present research covers a pillars of the health tourism, the wellness tourism.

The formation of the word wellness and its content definition is related to Dunn’s name. (Nahrstedt 2002) The word wellness came into being with the fusion of the words ‘well being’ (that is ‘to be well (healthy), feel good’) and the ‘wholeness’ (completeness). Dunn established the concept of ‘high-level-wellness’, the high level practice of the healthy lifestyle.

Therefore the wellness tourism can be regarded to be the part of the health market, about which Jakopánecz and Töröcsik (2015) wrote that it highlights its economic and social significance and also projects that according to some experts this area can be characterized as such a base innovation which brings about a new era in the social and economical life. Nefiodow (1999) considers the health industry to be a potential motivation of the 6th Kondratyev-
However, in order for the members of the supply side of the wellness to be able to serve the participants of the health tourism, we need to know the ‘wellness consumers’, their behaviour and their relation to wellness.

The consumer behaviour of the tourists are influenced by many factors, such as age, gender, education, income, etc. Whichever is used for the investigation of the wellness tourism, we would find significant differences in the travel motivations, used services and the tourist behaviour during travel. Along the age we can investigate the consumer habits of the individual generations. In Töröcsik’s (n.y.) definition the generations are linked through their shared experiences, life adventures and the common values in all. ‘The connection is loose but definitive. Loose because so many lifelines, consumer-customer decisions show themselves in case of a generation that it is extremely difficult to regard these as a unit. Yet there is a decisive trait along the values, which opens the possibility to connect these decisions and to state that there are differences between the generations and the likenesses found within generations drive the decisions of the people belonging to them’. (Töröcsik in: trendinspiracio.hu/ generacios-kutatas/2016)

In certain ages the emphasis in relation to health is put elsewhere as this is shown in the figure of Töröcsik (n.y.) (Figure 2).

![Figure 2 Relation to health in the individual ages](source: Own edition based on Töröcsik (n.y.))

The investigation of the sectors of health tourism and the analysis of the spa guests’ behaviour may assist other tourism-related providers in developing their services. This way, for example, in the establishment of services for spa guests of wellness hotels. (Happ 2008)
This should be considered when establishing wellness programmes and service packs for the various generation. However, it should be considered that the new trend of the tourism is the multi-generation travel. This is a travel in which multiple generations take part; a group of travellers which contains at least one under 18 and one over 60; a travel done by an expanded (large) family and friends. (Magyar Turizmus ZRt 2015.) The trend can be well seen in Europe but can be detected also in Hungary and especially typical to the wellness travels where grandparents travel together with their grandchildren.

According to McCrindle and Wolfinger (2009) the generations for the sociology researchers are like the artifacts for the archaeologists because the generations provide a good image on a nation’s values and lifestyles of the given time interval. The reason of this is that they have lived in the same age and under the same social influences.

The labelling of the generation is different for each author. In our present research the labels of McCrindle are used. According to this we define Builders (Veterans) (born before 1946), Baby Boomers (1946-1964), the Xs (1965-1979) and mainly the Ys (1980-1995) and the succeeding Generation Z (1996-2010). McCrindle labels the youngests, born after 2010, the Alpha Generation. The proportion of the individual generations in the Hungarian society is shown in Table 1.

<table>
<thead>
<tr>
<th>Description</th>
<th>Birth Date</th>
<th>Proportion to the Entire Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Builders or Veterans</td>
<td>-1946</td>
<td>13.38%</td>
</tr>
<tr>
<td>Baby Boomers</td>
<td>1947-1964</td>
<td>23.68%</td>
</tr>
<tr>
<td>X Generation</td>
<td>1965-1979</td>
<td>22.99%</td>
</tr>
<tr>
<td>Y Generation</td>
<td>1980-1995</td>
<td>20.33%</td>
</tr>
<tr>
<td>Z Generation</td>
<td>1996-2010</td>
<td>15.00%</td>
</tr>
<tr>
<td>Alpha Generation</td>
<td>2011-</td>
<td>4.63%</td>
</tr>
</tbody>
</table>


2.1. The role of the individual generations in the wellness tourism

According to Smith and Puczkó (2014) the age, gender, income, lifecycle, residence, religion or education plays role in the segmentation of wellness tourists but the wellness industry attaches more and more importance to the psychographic characteristics such as lifestyle, values, occupation, personality and the hobby. The segmentation based on lifestyle is used more and more frequently in tourism-related researches and the service management and its popularity increases in the wellness customer behaviour research (Nalobina 2015).

The 2007 Wellness Lifestyle Insights study of Hartman Group defined the major life stages of the Americans when they are most interested and motivated towards the wellness. According to this, years of secondary school,
university years then the period of pregnancy and maternity, the major birthdays and the health experience which is either personal of experienced instead of someone other. (Smith, Puczkó 2010)

Researches have shown that there is a strong connection between how people behave in everyday life and in their chosen leisure time activity (Sandy, Gosling, Durant 2013). This enables the analysis of the possible wellness markets based on life style patterns.

According to McCrindle és Wolfinger (2010) the age determines the behaviour and conduct. The culture of our childhood, the social markers and the decisive events of the years of growing up have greater impact on us. This phenomenon is reflected in the old saying that ‘People resemble more to their age than to their parents’.

In our research we investigated the relation of the Y Generation to the wellness.

In the 1950’s the Baby Boom generation relived the health clubs and the ‘fitness industry’ in the USA (Hritz, Sidman, D’Abundo 2014), however, the attention of the wellness facility leaders slowly shifted to the Y Generation. They were very young then, 12-34 years old, however, there were three times as many as the X Generation (Jang et al 2011) and their discretionary income, despite their young age, was higher than that of any other generation in the history (Morton 2002). According to Jang and his colleagues (2011), the members of this generation like to spend the money rather than save it. Farris and his colleagues (2002) considered them the most important consumer group.

The Ys are considered to be the key target groups of our days in several fields. Due to their innovativity, flexible adaptation to trends and technical talents better than that of the older generation they use the decisive resource of the knowledge based economy, the online information efficiently. Due to all this they are more and more conscious consumers and have become the opinion shapers of the consumer society.

3. METHODOLOGY OF THE RESEARCH

Our primary research was done with questionnaire survey between May 2014 and November 2015. Our questionnaire sheet containing 22 questions was filled in by 547 persons. The questionnaire was conducted primarily in the multiple-generation spas – Hajdúszoboszló, Lipót, Kehidakustány, Bükfürdő and the Annagora Aquapark in Balatonfüred – since we presumed that we could access higher number of those who participate in journey, journeys combined with or expressly aimed to wellness. Unfortunately, the willingness to answer was quite low.

The questions of the questionnaire were built on Ardell’s (in: E−AWR 2012) five-dimension wellness model and Lee’s European health and wellness model (2004), this was the basis of our investigation of the relation of the various
generations Veterans (70+ years), the Baby Boomers (52-70 years), the X (37-51 years), the Y (22-36 years) and the Z Generation (6-21 years) to the wellness as philosophy of life. From among the generations above we focused on the Y Generation in our research. In the research, two and multiple output closed and five-stage Likert-scale questions were used to examine the respondents’ participation in wellness tourism, motivation, services used, their approach to nutritional awareness, environmental sensitivity, stress management, physical fitness and self-responsibility.

The questionnaire was analysed with the SPSS program. The data were analysed with frequency and cross-table analysis, chi-square test was applied where the level of significance was defined at 95%.

4. CHARACTERISTICS OF SAMPLE

Women were more willing to fill in the questionnaire, thus their proportion in the sample is significantly higher, 67 %. The age of respondents were asked for with open question then transcoded based on the age of the respective generations. Budai and Székács (2001) were the first to segment the participants of the Hungarian health tourism based on age (18-35 years, 35-55 years, 55+ years) and the services used (fitness, adventure bath, wellness, medicinal bath).

According to this the age distribution of our respondents is as follows.

![Table 2](image)

<table>
<thead>
<tr>
<th>Name of generation</th>
<th>Age</th>
<th>Proportion in sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Builders/Veterans</td>
<td>70 -</td>
<td>2.4%</td>
</tr>
<tr>
<td>Baby Boomers</td>
<td>51 - 70 years</td>
<td>14.3%</td>
</tr>
<tr>
<td>X Generation</td>
<td>37 - 50 years</td>
<td>23.9%</td>
</tr>
<tr>
<td>Y Generation</td>
<td>21 - 36 years</td>
<td>23.9%</td>
</tr>
<tr>
<td>Z Generation</td>
<td>-20 év</td>
<td>33.1%</td>
</tr>
</tbody>
</table>

Source: Own edition based on KSH (2016) data, 2017

In the questionnaire the respondents’ income positions were also examined. 45% of the questioned have outlined that they can make a living and can save some. 40%, though they can get by but cannot save. 10% of the questioned have difficulties to get by and 5%, by their own admission, cannot cover their monthly needs. This fact has a great influence on the demand side of tourism, since besides free time and motivation, one of the most important factors is the discrentional income. This is particularly true to the wellness tourism where rather expensive services are used and the healthy nutrition is commonly known to cost much more.
5. **KEY RESULTS OF THE RESEARCH**

The wellness can be interpreted not only as a part of health tourism but as a base concept as a philosophy of life. This is the base of the five dimensions of the Ardell’s model (1977). This is why it is important to examine the lifestyle of the participants of the tourism. According to our research results the members of the Y Generation marked the active and rushing category rather than the stressful (Figure 3). This serves a guideline for the wellness providers because they have to construct packages that emphasize the active relaxation.

![Figure 3 How do Y Generation see their lifestyle](source: Own edition based on own research)

During the evaluation of the questionnaires it was confirmed that although the X Generation, based on their age and income status achieved, could afford to participate in wellness tourism, according to earlier researches – Jang et al. 2011. – it is much more characteristic to the Y Generation that they participate in wellness relaxation more than once a year. Overall, it is the X Generation besides the Y in Hungary that is decisive for the wellness providers.
The wellness visit frequency has shown significant relation to the income ($\chi^2=38,194, \ p=0,000$) and the lifestyle ($\chi^2=41,571, \ p=0,000$).

That is also apparent from Figure 5., that the Y Generation considers wellness a passive relaxation in the first place rather than a philosophy of life.

According to this the services used are experience-oriented (Fig. 6) and less related either to the health check, disease prevention or the need for healthy lifestyle. The majority of the experience-based services can be found in a conventional bath facility as well.
It is important that a wellness provider can provide a unique product range, much more attention is to be paid for the threefold dimension formulated in the wellness, the mind and soul factors besides the body. These dimensions are emphasized also in Printz-Markó’s (2016) view.

In our opinion, a special communication belongs to the characteristics of the individual generations and life stages, milestones. For the optimal communication it is important to learn each other’s ‘mother tongue’. In this, the 5 love languages can assist us. This is a concept of couple- and psychotherapy. The concept was conceived by Chapman - American Christian writer, relationship expert and marriage counsellor - in 1992. We think that the utilization of the 5 love languages in the planning of the wellness service offers is novel, reinforcing the material side with a modicum of mental and spiritual filling described earlier, which has a special significance related to the wellness philosophy since today’s disaffected, love-deprived, virtual relationships are calling for help and attention. Furthermore (in our opinion) it is important to be able to follow the trends with ‘emotional means’. Because we think that the ancient Indian saying gets more and more sense: ‘now I stop and wait for my soul to catch up’.

Chapman (2015), based on his counselling experience, defined 5 types of love language. These are the words of affirmation, the quality time, giving gifts, acts of service and the physical touch. To sum up briefly the words of affirmation mean honest encouragement, compliment, reassurance. By the quality time we mean not the physical presence but an experience which can be achieved during the time spent together with undivided attention towards our

Figure 6 Mention frequency of services used

Source: Own edition based on own research

<table>
<thead>
<tr>
<th>Service</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adventure bath</td>
<td>70</td>
</tr>
<tr>
<td>Sauna</td>
<td>65</td>
</tr>
<tr>
<td>Steam bath</td>
<td>55</td>
</tr>
<tr>
<td>Massage</td>
<td>40</td>
</tr>
<tr>
<td>Fitness</td>
<td>35</td>
</tr>
<tr>
<td>Solarium</td>
<td>30</td>
</tr>
<tr>
<td>Salt therapy</td>
<td>25</td>
</tr>
<tr>
<td>Physiotherapy, motion exerc.</td>
<td>20</td>
</tr>
<tr>
<td>Kneipp-cure</td>
<td>15</td>
</tr>
<tr>
<td>Therapy treatments</td>
<td>10</td>
</tr>
<tr>
<td>Condition assessments</td>
<td>5</td>
</tr>
<tr>
<td>Stress management</td>
<td>5</td>
</tr>
<tr>
<td>Acupuncture</td>
<td>2</td>
</tr>
<tr>
<td>Natural medicine</td>
<td>1</td>
</tr>
</tbody>
</table>

Chapman’s five love languages include:

1. Words of Affirmation
2. Quality Time
3. Acts of Service
4. Physical Touch
5. Giving Gifts

Chapman defined these as:

1. Words of Affirmation: Honest encouragement, compliment, reassurance.
2. Quality Time: Not physical presence, but an experience during undivided attention.
4. Physical Touch: Physical contact or touch for comfort.
5. Giving Gifts: Both material and symbolic gifts that demonstrate love.

These concepts are used in the planning of wellness services to enhance the emotional and mental aspects, reinforcing the material side.
companion and with joint activity. Giving gifts is the symbol of thinking of the other person. So it is not the material value of the gift which is important. The acts of service means to perform activities happily, without being asked. The physical touch stokes and feeds our soul. It is proven that the children who have been embraced by their parents a lot are much healthier in their souls.

As the interest towards wellness raises in the individual life stages (Hartman Group 2007 In: Smith, Puczkó 2010), the communication is attached to milestones of the life with different emphasis. Attached to the milestones of life, Chapman also advanced the concept of the 5 love languages. In his further books he deals with the relation of the parent and child (Chapman, Campbell 1997), the parent and the adolescent (Chapman, 2010), the parent and the adult child (Chapman, Campbell 2011), and the workplace (Chapman, White 2011).

The modelling of supply elements of wellness based on the concepts of the 5 love languages can be considered a new result of our literature research (Fig. 7).

![Figure 7 The concept of 5 love languages in wellness tourism](image)

*Source: own edition based on own research*

The element of the words of affirmation can be for example the perpetual calendars placed in the wellness hotel rooms with thoughts in terms of love. Furthermore colorful aphorism cards drawable at the bath cashiers or motivational messages printed on the admission tickets. Furthermore, by offering such structured discussions as wellbeing, the lifestyle alteration and health development coaching ([http://www.wellbeingcoaching.hu/708-2/szolgaltatasok/coaching/](http://www.wellbeingcoaching.hu/708-2/szolgaltatasok/coaching/), 2016.10.26.) the wellness can be reinforced as lifestyle, philosophy of life which contributes to the balance of body-mind-soul.

The quality time can be made up of programmes for couples or families. It is important to realize the careless, common playtime.

Giving gifts provides possibility for the wellness providers to appreciate the loyalty of their guests with further discounts. Furthermore they can be nice
with the so-called destination souvenir which is a gift peculiar to the given location. These can be considered an important means of marketing.

By the application of favours we mean that the wellness hotels may make various preparations for their guests or even offer free animation for children to provide the parents with time for each other.

The physical touch include the various massages, beauty care procedures, prevention treatments or even the handshake upon saying goodbye to the guests.

The model illustrates well that the individual elements are closely connected, complement each other. To sum up we think that our model covers and can be connected to the offerings of the wellness. Therefore applicable on the part of the providers.

Knowing the theoretical framework and the trends, and from the results of the questionnaire survey we came to the conclusion that the ‘Y-wellness’ is none other than satisfying the needs of the body-mind-soul and is possible by learning and using the 5 love languages.

Taking the characteristics of certain subgroups of the Y-tourists into consideration and applying the concept of the 5 love languages, we recommend to establish the following services for the wellness providers (Fig. 8).

<table>
<thead>
<tr>
<th>Target group</th>
<th>Sparing Adventure</th>
<th>Born E-travellers</th>
<th>Authenticity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service</td>
<td>Adventure cooking</td>
<td>Wellness application and</td>
<td>Services based on local</td>
</tr>
<tr>
<td></td>
<td>Pedifish</td>
<td>wellness community</td>
<td>products</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wellness blog</td>
<td>Destination souvenir</td>
</tr>
</tbody>
</table>

Figure 8 Y wellness tourism

*Source: own edition based on own research*

For those seeking a sparing adventure, the adventure cooking as food and lifestyle and pedifish treatment can be suggested as a Unique Selling Product. This is a chiropody treatment performed by small fish.

For the born E-travellers it can be exciting to have a wellness application in the area of the hotel or blogs related to the field. Additional applications may assist in formulating the diet or the workout plan. The participation in active exercising is assisted by the various Fitness-wellness watches such as the Misfit Trecker.

For the authentic groups it can be a lifelong experience to try the services based on local products. For example consuming foods made from local stocks or drinking tea made from locally grown herbs, or massage with a local thermal water based massage lotion. It is important that these be able to be bought and taken home.
CONCLUSIONS

Our research proved that for the wellness tourism in Hungary the X and Y generations are the two most determining ones. The number of wellness hotels in Hungary is increasing but wellness without the wellness philosophy merely means a high level spa tourism combined with relaxation, where healthy lifestyle does not really appear. Respondents used most frequently the experience-based services. The Y generation, as we have presented in our research, defined its lifestyle to be mostly active, they are the most open to follow the health megatrend present today. We think that in a rushing, increasingly empty world, they also consider mental wellness important which can be conveyed by wellness hotels through the five love languages.

By learning and applying the 5 love languages we can recognize what it is that makes our fellows happy, thus the human goal to make our loved ones happy can be achieved. In the field of tourism the main goal of the providers is to provide the tourists with experience, elicit satisfaction and joy. Therefore, connecting to our research, the 5 love languages are justifiable because the tourism, especially the wellness tourism means a confidential service. During providing wellness service the provider almost enters the service user’s aura, private area. In our opinion the sorting of the wellness supply elements based on the concept of the 5 love languages contributes to the balance of the body-mind-soul dimension. The providers can establish optimal communication, conflict management means which contributes the genuine experience provision, guarantees the recharging of the service users. Due to this the services are associated with such unique functions which make the provider special and its service can be entered into market as a Unique Selling Product. Furthermore we think that the application of the 5 love languages may help the embedding of the wellness philosophy of life.

Due to our complex view we came to the conclusion that Chapman’s 5 love languages (1992) can be connected to Maslow’s hierarchy of needs. It is not only the requirement level of love and belonging to which we have to think. If, for example, we think about the self-fulfillment placed on the top of the pyramid, we can see that the words of appreciation make a great contribution for realizing our talent, strengthening our self-esteem.

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REDESIGN OF SEAPORTS MANAGEMENT MODEL FOR THEIR TRANSFORMATION INTO PROFITABLE CENTERS

Review
UDK: 656.615:005
JEL classification: L92, M10

Abstract
Seaports and port systems have become the center of modern transport systems nowadays. For each country, including the Republic of Croatia, the development of ports and port areas is determined by the growth of economic activities with multiplier effects on the whole economy. The port authority is a public institution that is responsible for port management. The question is how to transform the seaport model management into a profitable entity and maximize its benefits for all stakeholders in a particular port area. Thereby, the financial capacity of the port authority is one of the major keys of the management factors that determine how the port authority can achieve its own goals and optimally perform their function. It follows that the profitable operation of the port authority is one of the fundamental elements for the optimal functioning of the whole port system.

Keywords: seaport, management, profitable
1. INTRODUCTION

Sea transport is one of the cheapest modes of transport where four fifths of the world’s goods are being transported. Seaports, therefore, have a particular significance in being the primary source for the development of the maritime economy. They represent enormous economic strength and play an important role in national economy and international exchange. Their role is to benefit the development of the entire economy by providing complete transportation services, at the lowest cost possible. They are also a significant factor in the development of other activities such as trade, manufacturing, tourism and etc. For that reason, everyone who has either direct or indirect benefits from their business is interested.

Seaport as being the crucial subsystem of the maritime and transport system is also the accelerator for traffic flows and for the development of numerous economic activities. It should not be seen as separate, it should be seen as an essential component of a port system that is part of a country’s transport system and has a high multiplying effect on the development of the state’s overall economy. Therefore, seaports management is of national importance.

The main of this article is to define a sea port management model that, on the one hand, allows the use of ports with the maximization of social benefits as well as the benefits of all interest groups, and on the other hand, it allows ports to develop from their own resources and operate as profitable centers or companies. In accordance with the objective, the subject of this paper is to determine the criteria for optimizing the maritime port model to operate as a profitable center and to meet the principles of business efficiency.

2. LITERATURE REVIEW

Discussion about the appropriate port management model has encouraged the interest of the academic community (Brooks, Pallis, 2012). The Spanish port system is one of the most researched ports in the last two decades (Castillo-Manzano, Asencio-Flores, 2012; Castillo-Manzano et al., 2008; Gonzalez and Trujillo, 2008), thanks to the frequent changes in legislation related to the port management model (Gray, 2005). Van Langen and van der Lugt (2007) have been researching how changes in the port environment influence the changes in the strategy and management model of seaports in the Netherlands.

The study of the financial sustainability of the new model of management using the sample of 12 seaports in Greece (Pallis, Syriopolos, 2007) has shown that there is still room for modernization and reconstruction, with a new role of port authorities and the public sector (Pallis, Vaggelas, 2005). ESPO’s Report on Managing European Maritime Ports (2011) is based on a new conceptual framework that takes into account the evolution of the port concept and the new role of port. In this way ports have been placed more in the center of the attention than before. In the report it is discussed about the goals and
functions of port systems, compared to institutional frames and the financial potential of the ports is also analyzed.

During the last two to three decades, the port authorities have gone through organizational reform in a way that they have become more independent and more commercial (Brooks & Cullinane, 2007; Debrie et al., 2013). Due to the high competition and the transfer of authorities, port administrations have developed from the “Landlord” form of a public institution into autonomous organizations with emphasized needs for profitable business.

The parallel between the ports of Latin America and Southern Europe, have been researched by Gonzalez Laxe et al. (2016) and he has established that the process of changes in port management is more significant in southern Europe in response to changes in the environment, unlike the ports of Latin America where the changes were triggered by the institutional framework (public policies).

3. THE INSTITUTIONAL FRAMEWORK FOR THE DEVELOPMENT OF THE SEAPORTS IN THE REPUBLIC OF CROATIA

3.1. Strategic framework of the seaport policy in Croatia

Croatian seaports have a huge economic potential that is primarily based on a favorable geographic position. The main comparative advantage of Croatian seaports in relation to the other ports of the European Union is reflected in the deep penetration of the Adriatic Sea into the continent, which allows the shortest and most affordable traffic connections between the Croatian hinterland and the eastern Mediterranean and through the Suez Canal, between the countries of Asia and the East Africa. In this sense, multimodal TEN-T corridors extending across the Croatian territory confirm the fact that the territorial position of the Republic of Croatia is not only its advantage but also the obligation towards the European Union. The Mediterranean corridor, the Baltic - Adriatic corridor, the Rhine – Danube corridor like the future Adriatic - Ionian route undoubtedly integrate the Republic of Croatia into the European transport and economic system of the European Union.

Strategic goals of the development of the Croatian port system are part of the overall maritime and thus the traffic or economic strategy of the Republic of Croatia. In order to improve the implementation of maritime policy, the Government of the Republic of Croatia in July 2014 has adopted the Strategy for Maritime Development and Integral Maritime Policy of the Republic of Croatia for the period 2014-2020 (hereafter: the Strategy for Maritime Development), for whose implementation, the Ministry of Maritime Affairs Transport and infrastructure is in charge, in cooperation with other sectors of the state and public authorities with jurisdiction in maritime affairs. Based on the above mentioned potential, and with the vision of Croatia as a developed
and recognizable maritime state, the Strategy sets two fundamental strategic goals: sustainable growth and competitiveness of the maritime economy and safe, environmentally sustainable maritime transport, maritime infrastructure and the maritime space of the Republic of Croatia.

The foundation for achieving the positive effects of the Strategy consists of economic and efficient public services provided to the citizens and businesses, as well as the continuous development of knowledge on sea and maritime affairs and the values of maritime heritage. In this segment, the goals of the strategy are very ambitious, and they anticipate:

− an increase in revenue from the basis of the concession on the maritime domain from the current 80 million to 160 million through the establishment of an integrated maritime management system,

− an increase in the number of individual public services provided per employee by 10 percent,

− an increase in the number of public electronic services by the maritime administration by 100 percent,

− a multiple increase in the engagement of the Republic of Croatia in the work of international maritime institutions and organizations and significant improvements in scientific field of maritime affairs.

With regard to these strategic goals of the development of the Croatian Port System, it would be realized through:

− establishment of a consistent port policy, based on legal solutions with realistic and clearly defined goals, as well as port system financing models.

− modernization of technologically outdated port facilities by attracting new investors to the port, which would enable port terminals for a more competitive approach to maritime services market.

− improvement of the port management system through the establishment of modern management and marketing in the maritime market.

− establishment of a coordinated approach for all participants in the realization of traffic services in the traffic directions with the goal of raising the provided service quality and achieving competitive prices.

− improvement of the port work processes and incensement of the port efficiency

− establishment of the priority investments for transport infrastructure and improvement of traffic links with the hinterland.

Looking at the big European picture there have been significant changes in the port system development that can be divided into three main groups (Dundović et al., 2006):
– legislative changes,
– changes in financing mode and
– traffic changes.

Considering these crucial changes in the management of port systems in developed European countries, as well as the following basic principles for port operations according to the recommendations of the European Union (Communication on European Ports Policy, SEC, 2007, An Integrated Maritime Policy for the European Union):

– availability and modernization of port facilities,
– free and fair competition,
– port integration based on common port and general traffic policy,
– social acceptability (development in accordance with the needs of environmental protection),

a port management model needs to be chosen which will enable the maximum valorization of existing capacities, the development of new capacity in line with the potential of the port area, with the intensive development of the port’s traffic function and the maximization of the business efficiency which means covering the expenditures with their own revenues without relying on financial support from the state budget.

It follows that the basic function of the port is to stimulate the economic growth of the port and its environment, but also of the whole region, with the task of providing quality services at lower cost possible, supporting the development of traffic, trade and other economic activities. Therefore, when developing a seaport management model, it should not be considered separate as an independent economic entity but as an integral part of the national economy with extremely high economic multiplier effects (World Bank, 2007).

3.2. Harmonization of the Maritime Policy of the Republic of Croatia with the Maritime Policy of the European Union

In terms of the integration of the economy of the Republic of Croatia into the EU transport processes, it is important to harmonize Croatia and European maritime and transport policies with each other and integrally, not with the necessity of adaptation and integration with the world’s transport and maritime processes. Violić, Debelić (2014) have prepared a SWOT analysis of the harmonization of maritime and transport policies of the Republic of Croatia with maritime and transport policies of the EU, as shown in Table 1.
Table 1

SWOT analysis of the harmonization of maritime and transport policy of the Republic Croatia with maritime and transport policy of the European Union

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<th>Strengths (S)</th>
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<td>• reduction of external costs</td>
<td>• until now, the abandoned system with indented coastline represents rich natural resource seeking for knowledge and great financial tools for a new start</td>
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<td>• modernization of work processes</td>
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<td>Opportunity (O)</td>
<td>Threats (T)</td>
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<td>• propulsion of the market</td>
<td>• increase of port and maritime regulation</td>
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<td>• geographic location within the most active micro-region</td>
<td>• strong EU competition for the entrepreneurship attractiveness of the micro-region</td>
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<td>• the ability to absorb financial resources from EU funds</td>
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Source: Violić, A., & Debelić, B. (2014). Uloga pomorske i prometne politike u funkciji održivog razvitka prometa i pomorstva

The development of seaports in line with the recommendations of the European Union should be focused in the direction of the Short Sea shipping and the Motorways of the Sea. This implies maximum use of the sea as a traffic route and redirecting passenger and freight traffic from land to sea to a greater extent. Thus, in the port area under the jurisdiction of the port authority, more activities can be performed (Maritime Domain and Seaports Act, 2003):

- mooring and rowing boats, yachts, fishing boats and other boats and floats facilities,
- boarding, unloading, transshipment, transfer and storage of goods and other materials,
- boarding and disembarking of passengers and vehicles,
- other economic activities which are related to these activities in the immediate economic, transport or technological context.

Legal or physical persons may perform these activities only on the basis of a concession granted by the port authority tender. Concession is the right to exclude part of the maritime property from general use and to be for special use or economic use for legal or physical person that is registered for the purpose of carrying out crafts (Maritime Domain and Seaports Act, 2003)

In the long run, the development of ports should be, for the most part, left to the market. The state should certainly keep the control of the ports, the development of maritime affairs and their related economic activities, in order to achieve the strategic goals.
4. MANAGEMENT MODEL OF THE SEA PORTS

4.1. Review of the management model regard to different measurements

Port system management and individual seaports within this system are unthinkable without knowing the theory and basic features of the system and management system. Various criteria can be considered when selecting a management model. The most commonly used measure is the form of ownership, so the following bow management model differs (Jugović, 2012):

- nationally operated ports,
- a port under the management of a city or region,
- autonomous authority of ports,
- public-private partnership and
- private ports.

From the organizational structure’s viewpoint, we can talk about the decentralized and uncoordinated type of organization and also about the centralized or coordinated type of organization.

Over time, four basic port management models have been developed (World Bank, 2007):

- service port,
- tool port,
- landlord port
- fully privatized port or private service port.

Service and Tool port are mainly directed towards the realization of public interests. Landlord ports have a mixed character and their goal is to create a balance between public (port authority) and private (port industry) interests. Fully privatized ports focus on private (stakeholder) interests.

The results of the research are based on the ‘renaissance’ of port management, with the revision of traditional functions (Landlord - businessman function, Regulator - regulator functions, and Operator - the role of port operator) and the development of a new function Community Manager which is closely related to changes in nature of the Port communities and interest groups. Depending on the degree of development of these functions and the way of their operationalization, we get three basic hypothetical types of port authorities:

- conservator,
- facilitator and
- entrepreneur.

The “Conservator” type of the port authority represents the lowest developmental form and is characterized by a passive attitude toward the realization of the traditional functions of the businessmen, regulators and
port facility operators while the function of the Community Manager is not represented.

The “Facilitator” type of the port authority is characterized by a much more active attitude towards the management of the port area in terms of maintenance and development in accordance with the development plans. The functions of the regulator and the operator are represented through independent design, application and control of the application of the regulatory basis for managing the assortment of services according to the requirements.

The function of Community Manager has also been developed through the coordination of port development with local and regional development plans with emphasized sustainability and taking into account the demands of all stakeholders. The type of port management of an “Entrepreneur” besides the activities inherent in the “moderator“ develops new forms of entrepreneurship in terms of commercialization and sales of expert expertise in the field of management and regulation of the port system. The function of Community Manager is accomplished by solving narrow holes in the hinterland, creating partnerships, lobbying, marketing management and applying corporate governance principles. This type of organization is also promoted, through the role of consultant for individual port management areas, globally (ESPO, 2011).

The organizational structure of the port authority, including the way of managing and investing in the development of the port will be crucial in making a long-term, completed and designed port policy of the Republic of Croatia and the business policy of the sea port. The reversal effect that will make this modern port harmoniously embedded in the maritime port system will be reflected in the promotion of hinterland economic growth and the development of the entire country’s traffic and economic activities. Figure 1 shows the organization of port authority as corporate organizational structure.
4.2. Selection of the management model – selecting a port authority organization

The method of port management, organization and structure of the port authorities, in other words the hierarchical structure in which they are included, depends on the classification of the ports considering their importance in the traffic and port system of the Republic of Croatia, depending on the size and type of port traffic, the condition and the size of port capacity and also depending on the connection of the port with hinterland. Through the management of ports, strategic goals of maritime development should be achieved, which is also the main reason for the establishment of state port authorities, while the economic functions have been taken over by numerous concessionaires, in the means of private capital, regarding the best practices of maritime countries.

Successful managing of the seaports of the Republic of Croatia states the definition of:

− How to finance and invest in port infrastructure.
− The construction of roads towards the land hinterland.
− Method of determining the port area and appropriation of concessions in means of improving the economic activity.

Figure 1 Organization of port authorities

Source: Authors
Managing ports for the international interest of the Republic of Croatia, within the Croatian port system, which means defining an optimal model for managing seaports.

From the above, it follows that the optimum number of port authorities will be found in the optimum management maritime port model, especially the ones that are financially sustainable.

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**Figure 2. The procedure for systematic selection of the organizational port model**

*Source: Jugović, A. (2012) Upravljanje morskom lukom (modified)*
4.3. Redesign of seaports management model for their transformation into profitable centers

In Croatia, port administrations are established as non-profit legal entities in which institution and non-profit accountings regulations are applied. The question is how to set up a port management model in terms of their organization, in a way that they do business as a profitable center, taking into the consideration of cost reduction and revenue growth, in other words creating more efficiency in business operations.

Some of the port authorities because of their passivity and dependency on state budget may become redundant, which could lead to an optimal number of these governing entities which should in future be self-sustaining, efficient and ultimately profitable. This would create the conditions for greater investment and support for the concessionaires, which would eventually lead to increased revenues. In addition to profitability, important determinants are responsible as the ethical behavior of managers is (and management structures: governing council, executive director) as is the case with supervisory boards and management of companies, so basically management models of port management should put the already mentioned corporate governance principles (Tipurić et al., 2008):

- Disclosure and transparency
- The responsibilities of the management structures
- Avoid conflict of interest of relevant persons (members of the governing council, management)
- Establish effective internal controls and
- Effective system of accountability

Corporate governance has developed on the basis of so-called agency problem that occurs when the owner-agent (state, port authority) handles management of another person - principal (concessionaire). The relationship between the port authority (the owners of social interests) and the concessionaire (private interest manager) should be the basis for developing a management model that will protect the interests of both sides and contribute to the development of the port and the port area. The current surveys of port management models (Verhoeven, 2006, World Bank, 2007, De Langen, Heij, 2014) goes hand in hand with the incorporation of port administrations, putting into focus the profitable business characteristically to corporations or companies.

Port administrations should definitely be more transparent about their business and it should also apply international accounting standards when preparing financial statements. The research carried out by PriceWaterhouseCoopers and Pantheia for the needs of the European Commission, the Mobility and Traffic Management Board (PWC, Pantheia 2013) found that the application of accounting standards is going to vary depending on the geographic position and the structure of the port ownership:
approximately half of the port authorities that were involved in the research have adopted International Financial Reporting Standards (IFRS) or International Public Sector Accounting Standards (IPSAS), while the other half uses national accounting standards or other standards based on IFRSs or IPSAS;

one third of the port authorities did not have their financial report publicly available or provided as part of the survey.

Recent literature explores new functions of port administration, primarily its role in the society, but based on its traditional functions such as infrastructure management, regulatory function and operator functions (Verhoeven, 2010). Port authorities are organizations with public and private characteristics (Parola et al., 2013). Ports have an important social role, because in some countries they contribute to their economy and employment. In total, about three million people are employed in ports in 22 maritime EU countries. The data also shows how nearly as 75% of the trade between EU and the rest of the world takes place across the ports (ESPO, 2011).

Port authorities are the key factors responsible for the development and management of ports and the port area. Rapid changes in the environment of the port, whether it is about ecological, economic, social or technological, places emphasize on the management of port administrations. All this leads to institutional change and acceptance of profitable behavior and the search for an optimal strategy and port management organization (Peeters et al., 2015). The importance of securing port efficiency is linked to the ability of the EU to be competitive on an international level (PWC, Pantheia, 2013).

The function of a port is usually observed in two ways: First, they perform public function in a way that contributes to social benefits and the economic development of the whole environment and the state as a whole. Second, it also performs a private function by creating a business environment for private entrepreneurs in the port area. Therefore, port management has two basic goals (Van der Lugt, De Langen, 2007):

- to encourage a competitive, sustainable and secure economic development of the port as a whole;
- become an efficient and effective organization that generates revenue for covering costs and investments, and in some cases, return the investments to the owner or shareholder.

By having tendency for greater efficiency in operations and increasing port authority revenue, it turn to commercialization and more transparent financial operations (such as Spanish ports), corporatization, although they remain state-owned (such as ports in the Netherlands, Australia, South Korea), and some fully privatized ports (as ports in the UK). Notteboom and Winkelmans (2001) have put out the hypothesis that the port (port authority), in order to be successful, must be ready for constantly adopting new roles that bring changes in the market environment. In the last few decades, port management has
experienced significant reforms in the sense of its organization. They are based on public institutions, which are transforming into independent, financially sustainable organizations.

Finally, all interested parties: port authorities, users, employees, service providers, shipping and concessionaires (operators) should have their representatives in the management structures - management and supervisory boards, in order to have a fair representation of their interests. This would also lead to the corporatization of the port authorities.

5. CONCLUSIONS

The formation or establishment of port administrations is a process determined by a series of conditions with respect to the complex function of the port in the traffic and economic system. Each of these conditions has a greater or lesser impact on the port management model:

− Port authorities are ‘hybrids’ in the sense of having public and private goals and taking an action in a competitive environment, but often (partly) depending on a state funding. Over the last decades, general movement has been in the commercialization, corporatization and even in privatization of some port authorities (Verhoeven, 2006).

− All interested parties: port authorities, users, employees, service providers, shipowners and concessionaires (operators) should have their representatives in the management structures - the Governing Council and management of the port authority in order to have an even representation of their interests. This would also lead to the corporatization of the port administration.

− Involvement of all stakeholders in management is often referred to as one of the basic functions of port authorities. On the other hand, maximizing profits is not the only and/or key goal for the public function it performs. Port management therefore needs to take an account for the needs of all stakeholders, by doing socially responsible business as one of the principles of corporate behavior.

By changing the management model, taking into account the principles of corporate governance, actions should be taken to remove the disadvantages in order to achieve maximum social and economic benefits for each function of the port authority as a seaport operator.

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Zakon o pomorskom dobru i morskim lukama, NN br. 158/03, 100/04, 141/06, 38/09 i 123/11.
Abstract

The last two decades experienced an explosive development in health tourism in Hungary, which also implied the rapid transformation of the offers of the wellness services. After the overview of the theoretical and conceptual background of the health tourism and wellness we conducted a questionnaire survey based on Ardell’s model, which showed significant differences between the different generations, particularly in case of Generation Y. This result induced us to pay special attention to the young. Several American researches investigated the health conscious lifestyle of the youth along the wellness philosophy. Based on these we established our models aligning to the Central European peculiarities then we conducted questionnaire surveys at college institutions of some Central European countries. In our work we present the results of the research, that is the general well-being feeling of the young along the holistic wellness philosophy. The practical applicability of the research lies in that it provides a guideline for the examined age group with regard to what areas of the wellness lifestyle have any deficiencies and where does one need to change in the lifestyle for a healthier life. This leads to a kind of balance which provides the fulfilment of the ‘body-soul-spirit holistic model’ in the individual’s professional and private life.

Keywords: wellness, holistic model, Generation Y
1. INTRODUCTION

In the 21st century, life expectancy at birth significantly increased in the European countries. Nowadays, the question is whether longer life in individual countries is spent in good health or with diseases. (EHLEIS, 2013; KSH, 2015)

Health depends on many factors. There are some that we have no influence on (e.g. genetics), but there are many factors that depend on the individual’s decisions. The Central Statistical Office (KSH, 2015) researchers came to the conclusion that health depends not only on the economic wealth and high standard of health care, but also on the lifestyle, or even the appearance of health, as the value of social consciousness of the country.

With the rising discretionary income and increased leisure time for people can pay more and more attention to health preservation. Within tourism the health tourism is gaining bigger ground and within it wellness tourism. However, in our earlier researches (Printz-Markó et al., 2014) we identified that wellness is more likely to appear as wellness patchwork (whether it is a bathing tourism or a set of wellness hotel’s programs) than a true philosophy of life.

In the USA, major programs run for the high school students so they can get acquainted with the wellness philosophy in high school. Participants in the program are evaluated both before and after the program (Stewart, et al., 2000). This type of education is increasingly needed as a result of changed lifestyles worldwide obesity has more than doubled since 1980, and in 2014, 11% of men and 15% of women aged 18 years and older were obese. (WHO, 2014)

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In order to increase the number of years spent in a healthy way or to make significant progress in the quality of life, you need to start a healthy lifestyle ‘education’ at a young age.

In our research, we examine the attitudes of university students related to wellness philosophy through the adaptation of a wellness questionnaire designed for American research and lifestyle counselling. Our current study presents the results of focus group interviews. We focused on four focus groups. Our questionnaire will be developed based on this data source. Opinions and additions of the focus group discussion have a great impact on our research. It will also enable to adapt the interpretation of the wellness dimensions based on American culture for European youth. During the focus group discussions, we could not only collect general information about holistic wellness, but thanks to brain-storming, newer approaches could surface, as well as a better understanding of the needs and attitudes of the target group surveyed could be gained.

2. DETERMINATIVE WELLNESS MODELS, HISTORICAL OVERVIEW OF WELLNESS

The definition of wellness is just over fifty years old. The word wellness comes from the United States, the word ‘well being’ was combined with ‘wholeness’ by Dunn (1961), a US doctor. Dunn (1961) developed the ‘high-level wellness’ concept, which means a high standard of healthy lifestyle. He believes wellness is a conscious health preservation, a balanced and active lifestyle. He has already highlighted the holistic nature of wellness, which is the sum of the human body, soul, and mind (Figure 1), and the environmental factor already appears here.

The establishment of the world’s first wellness center, the Mill Valley Wellness Relaxation Center in the early 1970s (Berg, 2008) and the development of the illness-health continuum model in 1972, and in 2004 the development of 12 elements of the wellness wheel is related to Travis. Travis puts the emphasis on the individual’s responsibility and developed a 8 months programme to assist in the acquisition of the wellness philosophy (Árpási, 2014).

Ardell, the ‘wellness guru’ is related to the wellness newsletter launched in 1984, the Ardell Wellness Report, the establishment of the www.seekwellness.com website and the foundation of a wellness center (Berg, 2008). In his first model of 1977 the individual responsibility was in the centre, then the norms and rules of society were emphasized. Hettler, in 1975, established the American National Wellness Institute, of which he became the president. He is related to the Testwell wellness self-assessment questionnaire which he developed under the health preservation program launched for university students in 1979. It defined the 6 dimensions of wellness.

The first European wellness model is related to Haug’s name. Müller and Lanz Kaufmann expands Ardell’s model with the concept of mental wellness. The novelty of Nahrstedt’s wellness model is the insertion of the health interpretation of the Oriental cultures and their related methods and the emphasis of the social connections and the environmental sensitivity.

Basically each of the models above builds on the individual responsibility.

Lee (2004) constructs the European health and wellness model on the four primal elements such way that they are connected to the therapy procedures and services. In his system the balance among the individual elements is created by the Kneipp-cure.

In his concept and definition, Illing, like Ardell in his endeavour for completeness, set up a wellness model based on five pillars, however, he defines the wellness from the aspect of health tourism. According to Illing (2002) ‘the wellness is the complete endeavour to the bodily, spiritual and psychic well being using vitalizing and means/programmes which are utilized at the special health centers.’ (Illing, 2002) Illing defines 3 grades of the wellness:

1st Grade Wellness: Joy without the considering the consequences on the body and soul.

2nd Grade Wellness: The state of well being is tried to be achieved actively (training, consciousness), while considering the consequences.

3rd Grade Wellness: Sustained change in the behaviour with the objective of permanent achievement of the sustained well being for the body and soul. (Laczkó, 2009)
2.1. The Six Wellness Dimensions of Hettler

In our earlier research (Printz-Markó et al., 2014) we examined the Hungarians’ attitude related to the wellness tourism and wellness philosophy based on the Ardell’s model and we found in the case of generational investigations that besides the X, the Y Generation is also definitive on the market of the wellness tourism. In order for the providers to be able to establish a suitable supply for them, it is important to know exactly their lifestyle, thinking, dietary habits and their relation to the healthy lifestyle. According to our expectations, a future implication of the research may be a life guidance for the European youth, which, embedded into their studies, may assist them to get an insight into the complexity of the healthy lifestyle.

For this research we started with Hettler’s six dimensions model and the questionnaire survey developed for it, which is based on the following factors (Figure 2):

- Physical Dimension - Regular physical activity, proper diet, avoidance of harmful habits
- Spiritual Dimension - To live along our values and beliefs,
- Intellectual Dimension - To identify the potential problems and to act accordingly,
- Social Dimension - To live in harmony with others and our environment,
- Emotional Dimension - To have an optimistic approach to life,
- Occupational Dimension - To find enjoyment in one’s occupation (Árpási, 2014:39).

Social dimension encourages the contribution to our environment and community. It highlights the interdependence of others and nature.

Occupational dimension recognizes personal satisfaction and enrichment in the life through work. The central point of occupational wellness is that occupational development is related to our attitude about our work.

Spiritual dimension highlights our search for the meaning and purpose in the human life. It includes the development of a deep appreciation for the depth and expanse of life and forces of nature existing in the universe.

Physical dimension recognizes the need for regular physical activity. Physical development encourages learning about diet and nutrition while discouraging the use of tobacco, drugs and excessive alcohol consumption.

Intellectual dimension focuses on our creative, stimulating mental activities. A person being well expands their knowledge and skills while discovering the potential for sharing their gifts with others.

Emotional dimension recognizes awareness and acceptance of our feelings. Emotional wellness includes the degree to which one feels positive and enthusiastic about oneself and life. (http://www.testwell.org/index.php?id=1696&id_tier=3430)
3. METHODOLOGY MODEL AND DATA

The primary method of the present research was four focus group discussions. This data source will serve as the basis for our questionnaire. Opinions and additions told during the focus group discussion have a great impact on our research. This will enable to adapt the interpretation of the wellness dimensions based on American culture to European youth. During the focus group discussions, we could not only collect general information in the field of holistic wellness, but due to brain-storming, newer and newer approaches surfaced, and a better understanding of the needs and attitudes of the target group surveyed could be gained as well.

Four focus group discussions were conducted between 10th of March and 10th of April, 2017. All our focus group discussions were aimed at students attending European institutes of higher educations. Three interviews were made at the campus of Széchenyi István University, Győr. Each was conducted within a respective seminar course. The fourth location was an Austrian café in Parndorf. All of the locations enabled the free expression of opinion for the participants in relaxed conditions.

The first focus group discussion in Győr took place at 10th of March, 2017. At the discussion, 6 (5 females and 1 male) students at the age of 22, living in Győr-Moson-Sopron county were present. At the second interview (14.03.2017) 12 (8 females and 4 males) persons were present. In this group with an average age of 20 the joking and use of slang was characteristic. On the third occasion (10.04.2017) the average age of the group of 10 (4 females and 6 males) was 21 years. This group had a prominent number ones doing active, competitive sport. In the second and third group there were students not only from
Győr-Moson-Sopron county but from the counties Vas, Zala, Baranya, Fejér, Borsod-Abaúj-Zemplén and Békés. At the Austrian location the focus group consisted of 3 females (10.04.2017) Their average age was 19. In their cases their residence and location of studies were the same. Thus one of them was an Austrian citizen studying in Wien and two were Slovaks living and studying in Bratislava. They were contacted using our earlier personal relationship. Due to this the participants of this group also enjoyed the joint work.

In our research we used a self-administered questionnaire completed by 360 students attending different European universities. The questionnaires were shared partly online in university groups, they were completed partly by foreign students studying in Hungary and partly by personal interviews conducted on our foreign study trips.

The questionnaire contained questions on general knowledge of the wellness concept and ones related to bathing tourism and a 5-degree Likert scale questions related to 62 wellness attitudes. The questions were created based partly on the TWI (HS) US questionnaire (Stewart et al., 2000) and partly on the focus group interviews. Questions on attitudes were divided into 8 subgroups, which were as follows: 1. physical activity, 2. nutrition, 3. healthcare and safety, 4. environmental wellness, 5. emotional awareness and sexuality, 6. intellectual wellness, 7. occupational and 8. social wellness -values and beliefs. In addition to questions about the wellness we also asked demographic questions.

The aim of this study was to analyze the reliability of our questionnaire and to find out whether the attitudes of European students to the wellness lifestyle show a significant difference on a territorial basis.

To establish the questionnaire survey we examined the applicability of the American questions during a focus group discussion. With the students we examined each topic and also that which actual questions are related to the underlying field and which ones from the American research can be interpreted by the European youth.

### 3.1. The first step of our personal data collection, the focus group research

About the interviews it can be told that the atmosphere was relaxed, the discussion was pleasant since the students have known each other. Due to this they openly expressed their opinions. The participants were patiently listening to each other. A mutual agreement could be observed. Difference was observed only in a few occasions. This division on one hand was gender-based, on the other hand it could be related to the sport intensity of the individuals. This was most apparent between the competitive athletes and the students preferring passive recharging. However, this did not cause tension, rather had a constructive effect on the research work.

The students involved into the focus group interview got into a new situation due to this research method. Overall it can be told that the participants
handled this new kind of situation excellently. There were no debates within the group during the opinion formation. During all four interviews there were dominant and reserved participants. It is important to highlight that though the more reserved group members had fewer additions, their notices, additions had a great impact on the whole group. As the interview was drawing to the end the respondents became more and more open, creative and brave.

The guideline of the interviews were in all cases determined by the main research question, the wellness and the need for the interpretation of wellness dimensions. In our research we considered the Hettler’s model (http://www.nationalwellness.org/?page=Six_Dimensions) to be a basis.

The lead questions posed during the focus group discussions:

− What heading comes to your mind upon hearing the expression wellness?
− What do you mean by physical activity in the field of the wellness?
− What do you mean by nutrition in the field of the wellness?
− What do you mean by health preservation and safety in the field of the wellness?
− What do you mean by environmental wellness in the field of the wellness?
− What do you mean by social awareness in the field of the wellness?
− What do you mean by emotional awareness and sexuality in the field of the wellness?
− What do you mean by emotional management in the field of the wellness?
− What do you mean by intellectual wellness in the field of the wellness?
− What do you mean by occupational wellness in the field of the wellness?
− What do you mean by spirituality and values in the field of the wellness?

The focus group examinations were conducted using note-based analysis. We highlighted the keywords occurring most frequently and the next phase of our research method, the questions of the questionnaire survey were adjusted to them.

Below we highlight the examination group members’ most frequently mentioned keywords which contributed to achieve our research goal, that is the discovery of the body-mind-soul based wellness dimensions for the students of European higher education institutions. Furthermore we marked those areas which the focus groups were least able to interpret as wellness dimensions.

Upon hearing the term wellness, most students associated to passive relaxation and massage. Only one of them mentioned it as a lifestyle. The **Physical Activity** was the first of the wellness dimensions to be discussed. In this regard the keywords were the sport and swimming. We consider important
to mention that one person highlighted the commuting to workplace on foot, by bicycle or roller, one other mentioned the company.

In the case of the second wellness dimension, the Nutrition it was predictable that the healthy diet would be mentioned most frequently. The students highlighted the diversity and regularity. The first association of one person, which we appreciated, was the consumption of the water. One of the participants supplemented the topic with his experiences of his travel to Korea. He told the group members that the Koreans consider their food, the Hansik, a great source of energy. This energy boosts their body, mind and soul simultaneously. (Korea Tourism Organization Offices, 2012)

The third wellness dimension focused on the Health Preservation and Safety. This was the first wellness dimension which was the most difficult to identify with by the respondents. In the first place the nutrition and exercising was mentioned in relation with the topic. After these keywords, the screening test was mentioned by a female participant, then the seat belt by a male. The international students regarded this dimension with a slightly more complexity. They emphasized the spiritual health and the love and acceptance of ourselves.

The Environmental Wellness as the fourth wellness dimension was a bit puzzling for the Hungarian students. Only a few keywords were mentioned such as eco-tourism, eco hotel and open air exercising. The Austrian student associated the environmental awareness and air pollution to the topic.

The fifth wellness dimension is the Social Awareness. This sub-area was contributed by the female members of the groups. They added expressions like solidarity, helpfulness and volunteering. The international students mentioned the volunteering all at once.

The Emotional Awareness and Sexuality as the sixth wellness dimension was contributed to by the male group members first. They highlighted the use of contraceptive and the cheating. The women were the next to speak. They mentioned most frequently the birth control and the permanent partner.

The most frequent association to the seventh wellness dimension, the Emotional Management, was the self control, this was followed by empathy, sport and music as a means for drain tension, and the relaxation techniques.

To the next, eighth wellness dimension, the Intellectual Wellness, the students associated the lifelong learning and reading. In one or other occassions the scholarship and going to library was mentioned.

In the area of the Occupational Wellness as the ninth wellness dimension the students emphasized that it is important to do a job which we like to do. This was followed by the good working atmosphere, teamwork and proper information flow.

To the tenth wellness dimension, the Spirituality and Values the group members connected the belief, meditation, positive thinking and acceptance.
3.2. The second step of our personal data collection, the questionnaire and its results

Students from 18 countries have participated in the study, 208 Hungarian and 151 foreign students, in one case no nationality was given. As students of different nationalities completed our questionnaire in different proportions, country groups were created in the analysis. The Hungarian students were studied separately, and a Western European and a Central Eastern European group was also created.

The average age of respondents was 23.06 years (+/- 5.278). The sample consisted of 76.1% women and 23.9% men. The distribution of respondents according to settlement by size: 97% lives in the capital, 18.6% in county seat, 46.4% in town, 25.3% in village. 60.3% of students wrote that they had their own income. The financial situation was characterized by 37.2% of the respondents so that they could earn a good living and they could save money, 36.7% of respondents can earn a good living, but cannot save any money, 10.8% of respondents have a hard time to earn a living and 15.3% of them cannot cover their expenditures out of their monthly income.

For the scales, in the first place total scores were calculated which were examined along the individual wellness dimensions (Chart 2) and on a territorial basis (Chart 3). The total score of the scales was obtained by adding the scores for the answers to each question. The minimum score was 62 and the maximum was 310. A higher score meant, of course, a more positive attitude towards the wellness lifestyle. To determine reliability, internal consistency was investigated by determining the Cronbach alpha value. The Cronbach alpha values for the 62 questions were 0.924 (N=342), which indicates a high reliability. The internal structural stability of the Likert scale of the questionnaire is shown by the fact that the removal of individual questions does not have any significant impact upon the value of reliability (Appendix 1).

Based on these results we came to the conclusion that the attitude of the students about the wellness lifestyle was measured by the scale with a high reliability.
Table 2
The average of the total points of the questionnaire along the different wellness dimensions

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Number of questions per dimension (minimum score)</th>
<th>Maximum score</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Fitness</td>
<td>358</td>
<td>6</td>
<td>30</td>
<td>19,223</td>
<td>5,201</td>
</tr>
<tr>
<td>Nutrition</td>
<td>358</td>
<td>11</td>
<td>55</td>
<td>35,050</td>
<td>7,113</td>
</tr>
<tr>
<td>Self-care and safety</td>
<td>358</td>
<td>6</td>
<td>30</td>
<td>18,067</td>
<td>3,1845</td>
</tr>
<tr>
<td>Environmental wellness</td>
<td>358</td>
<td>7</td>
<td>35</td>
<td>24,952</td>
<td>5,9616</td>
</tr>
<tr>
<td>Emotional Awareness and sexuality</td>
<td>357</td>
<td>9</td>
<td>45</td>
<td>34,602</td>
<td>5,2818</td>
</tr>
<tr>
<td>Intellectual wellness</td>
<td>356</td>
<td>7</td>
<td>35</td>
<td>26,651</td>
<td>4,4667</td>
</tr>
<tr>
<td>Occupational wellness</td>
<td>356</td>
<td>5</td>
<td>25</td>
<td>18,814</td>
<td>3,8116</td>
</tr>
<tr>
<td>Social wellness, spirituality and values</td>
<td>358</td>
<td>11</td>
<td>55</td>
<td>38,466</td>
<td>7,2070</td>
</tr>
<tr>
<td>Whole questionnaire</td>
<td>356</td>
<td>62</td>
<td>310</td>
<td>218,583</td>
<td>30,954</td>
</tr>
</tbody>
</table>

*Source: Own edition based on own research*

From Figure 3, it can be stated that students in general need the most development in terms of physical activity, nutrition, healthcare and safety, while according to their responses the highest scores were achieved in the emotional and sexual, intellectual, and occupational wellness areas.
Figure 3 The scores achieved by students in each wellness dimension compared to the maximum score in percent

*Source: Own edition based on own research*

Hereinafter, the data were examined also on a territorial basis.

Figure 4 clearly shows that there is a difference between students in the different wellness dimensions on a territorial basis. We investigated with ANOVA that, regarding the total scores for the entire questionnaire and the individual wellness dimensions, whether there is a significant relationship between the attitudes towards wellness lifestyles and the fact that a student is from Hungary, Western Europe or Central and Eastern Europe.

As a hypothesis, we assumed that there is a difference between the attitudes of students towards wellness lifestyles on a territorial basis.
Based on the analysis made we can conclude that the origin of the students (the part of Europe they are from) does have a role in the students’ attitudes towards wellness. (Whole questionnaire $F= 4.518; p= 0.012$). (Chart 4) Chart 4 also shows that not only the total score, but also the five out of the eight wellness dimensions have a significant correlation based on territory.

We have also investigated other factors, such as the gender of students, the type of their settlements, their financial situation, but only few of the wellness dimensions have been shown to correlate.

Between sex and dimension of self-care and safety ($F=5.87 p=0.016$) and social wellness, spirituality and values ($F=6.219 p=0.013$).

Between type of residence and dimension of self-care and safety ($F=5.870 p=0.016$), social wellness, spirituality and values ($F=6.219 p=0.013$).

Between financial situation and whole questionnaire ($F=3.625 p=0.013$) and dimension of self-care and safety ($F=2.978 p=0.032$), spirituality and values ($F=3.499 p=0.016$) and Occupational wellness ($F=6.147 p=0.000$), social wellness, spirituality and values ($F=3.499 p=0.016$).
Table 4

Results of ANOVA between the attitudes of students towards wellness lifestyles on a territorial basis.

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>Sig.</th>
</tr>
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<tbody>
<tr>
<td>Whole questionnaire</td>
<td>4,518</td>
<td>0,012</td>
</tr>
<tr>
<td>Physical Fitness</td>
<td>0,182</td>
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<tr>
<td>Nutrition</td>
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<td>Environmental wellness</td>
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<tr>
<td>Intellectual wellness</td>
<td>5,105</td>
<td>0,007</td>
</tr>
<tr>
<td>Occupational wellness</td>
<td>6,707</td>
<td>0,001</td>
</tr>
<tr>
<td>Social wellness, spirituality and values</td>
<td>2,675</td>
<td>0,070</td>
</tr>
</tbody>
</table>

Source: Own edition based on own research

Based on the sample, generalizations should not be done given that it was not representative, but the continuation of the research, with a larger number of respondents from other countries and with refined regional distribution, may likely outline the areas in which it is most necessary to develop students’ knowledge, so that their attitudes towards the wellness lifestyle and thus their relationship to a healthy life can be improved.

We would like to expand our research to more European universities in the future, and we plan to probe our students attending healthy lifestyle seminars at the beginning and the end of the course.

CONCLUSIONS

In our research, first, based on literary sources, we studied the development of wellness concept and models, and based on the models and using earlier researches, we prepared a questionnaire of 62 questions for the examination of the wellness lifestyle for European students. The questionnaire’s applicability and intelligibility was examined by focus group interviews. Updating our questionnaire with the results obtained here, we conducted our questionnaire survey with the participation of 360 students.

The results verified that the relationship to a healthy lifestyle was significantly determined by the part of the Europe the underlying student came from.

In most of the wellness dimensions there was a significant difference between Western European and Central and Eastern European students.
As the result of our research we formulated our questionnaire with the title of ‘Body-Mind-Soul Test for Students of European Higher Education Institute Students’ (BMS-Test for HEIS). The constituents of our questionnaire, the so-called ‘BMS Roulette’ is illustrated in Figure 5. As the result of our research we formulated our questionnaire with the title of ‘Body-Mind-Soul Test for Students of European Higher Education Institute Students’ (BMS-Test for HEIS). The constituents of our questionnaire, the so-called ‘BMS Roulette’ is illustrated in Figure 5.

![Figure 5 The BMS-Roulette](image)

Own edition based on own research

For the definition of the individual elements of the BMS Roulette our sources of research had high importance. On one hand it is the wellness models described in the theoretical part, especially Hettler’s (1980) approach. On the other hand it is the results of our focus group research. As a result of the evaluation of the interviews of the students the most frequently used keywords were incorporated into the BMS Roulette. The research questionnaire was compiled based on the above. We are confident since due to our complex view we came to the conclusion that our ‘BMS Test’ can fit to Maslow’s Hierarchy of Needs (1943) as well, besides the wellness models described. We expect the expansion of our research to be a contribution to the embedding of wellness philosophy of life, through which the body-mind-soul balance, health and fulfilment can be realized.
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Hettler, B. (1980). Wellness promotion on a university campus. Family and Community Health, 3 (1), 77-9


Wellness modell of Hettler:


World Development Indicators: Mortality http://wdi.worldbank.org/table/2.18# [accessed:10.05.2017.].

**Appendix**

The change of the Cronbach alpha coefficient value with a question removed

<table>
<thead>
<tr>
<th>Question number</th>
<th>Alpha coefficient with the question removed</th>
<th>Question number</th>
<th>Alpha coefficient with the question removed</th>
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*Source: Own edition based on own research*
SYSTEM DYNAMIC MODEL OF MARKETING IN HOTEL COMPANY

Abstract

The subject of this paper is qualitative as well as quantitative system dynamics modeling of the marketing department in a hotel company. It is known that there is an increasing number of tourists in Croatia and also that in some regions hotel capacities are insufficient so hotel management has a major challenge to make decisions about increasing hotel capacities. The dynamic model, in this study, is oriented towards building new hotel capacities according to the increased demand. The paper describes a dynamic model of the marketing department of the hotel company that allows simulation of its dynamic behavior. The dynamics of events and the complexity of the process in the hotel company and the marketing department are shown with mathematical model, mental-verbal model and flow charts. The graphic of the system dynamic structural model of marketing department illustrates the important factors influencing the discrepancy between the desired and actual hotel capacity and between supply and demand for hotel capacities. The mathematical model enables practical insight into the dynamic behavior of the observed system, i.e. the analysis of the marketing department of hotel company and observation of mutual correlation between input, output and internal variables of processes occurring in the observed system.

Keyword: system dynamic model, hotel company, marketing
1. INTRODUCTION

The subject of this paper is qualitative as well as quantitative system dynamics modeling of the influence of marketing on building new capacities in a hotel company. It is known that there is an increasing number of tourists in Croatia and also that in some regions hotel capacities are insufficient so hotel management has a major challenge to make decisions about increasing hotel capacities. “Decisions, which include wide financial, technical, logistic and environmental resources, demand the decisions simulation before they go into action in a form of policy realization” (Kljajić, 2000, p.294). The system dynamics modelling methodology, relatively rarely used in economy problems research so far, is applied in this paper. „It integrates existing knowledge and contributes to a better understanding of newly created relationships between complex natural and economic systems. The methodology can also be applied to assess a wide range of scenarios and create better strategies.” (Forrester, 1975, p.37).

The creation of the system dynamics model required:

− the analysis of hotel enterprises and marketing,
− creating causal loop diagram of marketing influence on hotel capacities,
− creating a mental-verbal model of the marketing influence on building new hotel’s capacities,
− creating a mathematical model,
− analyzing the marketing influence on the hotel capacity.

2. MARKETING

Hotel companies are complex organizational systems functioning differently from other manufacturing and service companies. The complexity, stems from the fact that if the hotel wants to provide a quality service it must integrate products and services with many industries and connect natural, cultural, energy, material, transport and human resources with all the specifics in its product. The management of materials and information has far-reaching consequences in the hotel business.

The hotel industry, as a significant area of tourism, in its business concept brings into sharp focus, the needs of the consumer. Accordingly, the marketing concept has a dominant role in the entire hotel business.

In the hotel industry, the success of any hotel often depends on good reputation. Since all aspects of the business depend on successful marketing, it is difficult to highlight all the roles which marketing plays in a company. Kotler, one of the leading authorities in the field of marketing defines marketing as: “the science and art of exploring, creating, and delivering value to satisfy the needs of a target market at a profit. Marketing identifies unfulfilled needs and desires. It defines, measures and quantifies the size of the identified market and the profit potential. It pinpoints which segments the company is capable of serving best and it designs and promotes the appropriate products and services.” (Kotler, 2001, p. 102)

The definition given by the American Marketing Association will also help
to clear some of the misconceptions on marketing and give a deeper understanding to it. According to them “Marketing is the activity, set of institutions, and processes for creating, communicating, delivering and exchanging offerings that have value for customers, clients, partners and society at large” (AMA 2013).

The hotel industry is one of the most important sectors in the tourism and hospitality industry. The World Tourism Organization (UNWTO) stated that the global number of hotel rooms has grown from 14 million to 17 million between 1997 to 2005 and the figure is expected to increase astronomically by the end of 2020. (Talabi, 2015, p.3). The growth in the hotel industry has been identified as one of the major facilitators in the development of tourism and hospitality industry as a whole. No wonder the governments of some countries give incentives to hotel developers and owners in order to further enhance their country’s tourism sector (Page, 2009, p.259).

It is known that there is an increasing number of tourists in Croatia and also that in some regions hotel capacities are insufficient so hotel management has a major challenge to make decisions about increasing hotel capacities. Also, the fact that the hotel industry is an industry with perishable products, in other words, if a room is not occupied during a particular period, the income that is supposed to be realized on that particular room is lost forever and it cannot be regained, makes decision even harder.

3. SYSTEM DYNAMICS STRUCTURAL AND MENTAL-VERBAL MODEL OF MARKETING INFLUENCE ON HOTEL CAPACITY

System dynamics is a type of research system that analyses behavior of the system in time, depending on the structure of elements of the system and their mutual influence, including causal interrelations, feedbacks, and delayed reaction on influence. System Dynamics (SD) is basically built upon traditional management of social system, cybernetics and computer simulation (Sushil, 1993, p.35). System Dynamic Simulating Modeling is one of the most appropriate and successful scientific dynamics modeling methods of the complex, non-linear, natural, technical and organizational systems. The methodology of this method, together with use of digital computer, showed its efficiency in practice as very suitable means for solving the problems of management, of behavior, of sensibility, of flexibility of behavior dynamics of very complex systems. All this is made by computer simulating, i.e. „in laboratory“ , which mean without any danger for observed realities (Forester, 1973, p.17)

SD is based on the philosophy that the behaviour of a system is principally caused by its structure based on policies and traditions; and the structure of an organization can be best represented in terms of underlying flows of various resources cutting across the functional departments tracing across various feedback loops, delays and amplifications in the system. Hence, a SD model typically consists of “causal loop” and “flow diagram”. The causal loop depicts causal hypothesis during model development, so as to make the presentation of the structure in an aggregate form, whereas, flow diagrams represent the detailed flow structure of the system in terms of
the fine policy structures so as to facilitate the development of the mathematical model for simulation (Coyle, 1977, p).

Qualitative modelling is a starting point in the modelling process. A structured and integrated casual loop diagram follows a mental presentation of the observed system (Munitić and Ristov, 2009, p.53).

The structural model, shown in Figure 1., is designed on the basis of the analysis of parameters influencing decision about building new hotel capacities. The basic parameters of the model are: difference between actual and desired hotel capacities (RZISHK), actual state of hotel capacity (SSHK), speed of building new hotel capacity (BINK), physical cancellation of hotel capacities (FOHK), the demand for hotel capacities (PTRHK), the supply of hotel capacities (PONUDA) the exponential average of demand for hotel capacities (EPTHK), the desired hotel capacities (ZHK)

Figure 1. System dynamic structural model for marketing department influence on hotel capacity

Source: Author’s own
The causal loop diagram shown in Figure 1 consists of four feedback loops, two with negative and two with positive feedback effects.

In the feedback loop KPD1 there are three internal feedbacks. The feedback loop KPD1 comprises links among the difference between actual and desired hotel capacities (RZISHK), the speed of building new hotel capacity (BINK) and the actual state of hotel capacity (SSHK). If the difference between actual and desired hotel capacities (RZISHK) increases, the quicker is the speed of building new hotel capacity (BINK) (+). The quicker the speed of building new hotel capacity (BINK) means the higher actual state of hotel capacity (SSHK) (+). If (SSHK) increases, (RZISHK) decreases (-). From the above it can be seen that two internal feedbacks are of a positive dynamic character and one negative, which means that feedback loop KPD1 has a globally negative character.

The link between physical cancellation of hotel capacities (FOHK) and the actual state of hotel capacity (SSHK) is described by feedback loop KPD2. The higher state of hotel capacity (SSHK) means the higher state of physical cancellation of hotel capacities (FOHK) (+). Increasing the physical cancellation of hotel capacities (FOHK), the actual state of hotel capacity (SSHK) is decreasing (-). One positive and one negative dynamic character give a negative sign to the feedback loop KPD2.

In the feedback loop KPD3 there are seven internal links. If demand for hotel capacities (PTRHK) is larger the exponential average of demand for hotel capacities (EPTHK) is growing (+). If EPTHK grows, the desired hotel capacities (ZHK) grow (+). If ZHK increases, the difference between actual and desired hotel capacities (RZISHK) increases (+). If RZISHK is growing, the speed of building new BINK capacities increases (+). With quicker BINK the actual state of hotel capacities increase SSHK (+). If SSHK is growing, there is an increase in supply (PONUDA); means a positive sign of an internal feedback. If the supply (PONUDA) is larger PTRHK grows; means a positive sign of an internal feedback. Since KPD3 consists of seven positive internal links, this circle has a positive global dynamic sign.

The feedback loop KPD4 includes link between the ratio between demand and supply (TRA/PON) and demand for hotel capacities (PTRHK) which is positive. In KPD3 are described links between ZHK, RZISHK, BINK, SSHK i PONUDA, all of them are also in KPD4 and the dynamic characters of the mentioned internal links are positive so the feedback loop KPD4 has a positive dynamic character.

4. **MATHEMATICAL MODEL**

After defining the problem, i.e., the first system dynamics modelling stage, the second stage - the system conceptualization takes place. It includes the mathematical model development based on the created cause-effect diagrams as well as the structural system model. The mathematical model development stage
is crucial in the system dynamics modelling process. The dynamic mathematical model is created theoretically applying the basic laws of the system’s behavior.

The mathematical model, in this study, is oriented towards building new hotel capacities according to increased demand. The speed of new hotel capacity building (BINHK) is based on the difference between the requested and available hotel capacities (RZISHK).

Demand for hotel capacities is modeled as a level that depends on increasing and decreasing demand. Demand depends on seasonality, investment in marketing, the effect of experts and the effect of demand policy. Demand for hotel capacities (TRAZNJA) is given in table for 60-months.

Following the demand for hotel capacities over a given time interval, it is necessary to assess the economic viability of building new hotel capacities.

\[
BK = \int_{0}^{t} BINHK dt \quad (1)
\]

\[
BINHK = \begin{cases} 
0, & \text{for } RZISK < 450 \\
RZISK, & \text{for } RZISK \geq 450 
\end{cases} \quad (2)
\]

\[
RZISK = ZHK - SSHK \quad (3)
\]

\[
SSHK = SSHK_0 + \int_{0}^{t} (BINHK - FONK) dt \quad (4)
\]

\[
FONK_1 = \left(1/T^2\right) \cdot 4.5 \cdot BINHK \cdot t^2 \cdot e^{-\frac{3t}{T}} \quad (5)
\]

\[
FONK = \begin{cases} 
FONK_1, & \text{for } FONK_1 \geq 1 \\
0, & \text{otherwise} 
\end{cases} \quad (6)
\]

\[
EPTHK = EPTHK_0 + \frac{DF}{VUJT} (PTRHU - EPTHK_0) \quad (7)
\]

\[
ZHK = EPTHK \cdot JVHK \quad (8)
\]

BK in the equation (1) represents number of newly built hotel capacities and it is calculated as the change of speed of building new hotel capacities BINHK integral in the preceding time interval.

BINHK stands for speed of building new hotel capacities and it is calculated as discrepancy between desired and actual hotel capacities devided by time in the equation (2).

RZISK in the equation (3) is discrepancy between desired ZHK and actual SSHK hotel capacities.

Real hotel capacities SSHK in the equation (4) represents the number of the hotel capacities at a specific time interval and it is calculated by adding up the preceding number of the hotel capacities e and the integral of the change in discrepancy between BINHK and FONK in the preceding time interval.

FONK in equation (6) is the average time of physical write-off of hotel capacities and is calculated by FONK1 which is auxiliary function, exponential delay function of 3rd order in equation (5).
EPTHK stands for an exponential average demand for hotel capacities in equation (7) and it is obtained by adding up previous average demand value and first derivation of difference between PTRHU increased average demand and EPTHK, divided by the average time of exponential delay VUIT.

The desired hotel capacities ZHK in equation (8) is first order function of the exponential average of the demand EPTHK and unit value of the hotel capacity JVHK.

5. SYSTEM DYNAMIC SIMULATION MODEL OF THE MARKETING INFLUENCE ON HOTEL CAPACITY

The above facts were necessary to create a basis for developing computer simulation model of marketing influence on hotel capacity. These are the basic settings for the understanding of the functioning of the system dynamic modeling.

Based on the mathematical and structural model of the marketing service, a dynamic computer simulation model of marketing service was developed, which can simulate and optimize this service.

\[ R \text{ BINHK.KL} = \text{CLIP}(0, R\text{ZISK.K}, 450, R\text{ZISK.K}) \]
\[ L \text{ BK.K} = \text{BK.J + DT*BINHK.JK} \]
\[ N \text{ BK} = 0 \]
\[ L \text{ SSHK.K} = \text{SSHK.J + DT*(BINHK.JK-FONK.JK)} \]
\[ N \text{ SSHK} = 1400 \]
\[ R \text{ FONK.KL} = \text{DELAY3}(\text{BINHK.KL}, \text{PVFO}) \]
\[ C \text{ PVFO} = 120 \]
\[ A \text{ RZISK.K} = \text{ZHK.K-SSHK.K} \]
\[ A \text{ ZHK.K} = \text{EPTHK.K*JVHK} \]
\[ C \text{ JVHK} = 600 \]
\[ A \text{ EPTHK.K} = \text{SMOOTH}(\text{PTRHU.K}, \text{VUIT}) \]
\[ C \text{ VUIT} = 6 \]
\[ A \text{ PTRHU.K} = \text{FPT*TABHL(PTRHUT, TRAPON.K, 0, 2, 1)} \]
\[ T \text{ PTRHUT} = 0, 2, 4 \]
\[ C \text{ FPT} = 1 \]
\[ A \text{ TRAPON.K} = \text{TRAZNJA.K/PONUDA.K} \]
\[ A \text{ PONUDA.K} = \text{SSHK.K} \]
\[ A \text{ TRAZNJA.K} = \text{TABHL(TRAZNJT, TIME.K, 0, 60, 4)} \]
\[ T \text{ ZNJT} = 100, 400, 2000, 600, 800, 3000, 800, 900, 4000, 1000, 1000, 5500, 900 \]
\[ \text{SAVE: BINHK, SSHK, FONK, RZISK, ZHK, EPTHK, PTRHU, TRAPON, PONUDA, TRAZNJA, BK} \]
\[ \text{SPEC DT} = 0.1, \text{LENGTH} = 60, \text{SAVPER} = 1 \]
6. SIMULATION AND VERIFICATION OF THE SYSTEM DYNAMIC MODEL

Dynamic model of marketing service, which is described in mathematical equations and shown in the structural diagram is verified by comparing the results of the simulation with the actual results of hotel company. The simulation was conducted according to the following scenario:

- Maximum hotel capacity is 100%
- The hotel starts work in March and ends in November,
- Full availability is anticipated in July and August.

Real (STPOP) and simulated (SPOP) occupancy of the hotel capacities are shown in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Time</th>
<th>STPOP</th>
<th>SPOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0,00</td>
<td>0,00</td>
</tr>
<tr>
<td>1</td>
<td>0,00</td>
<td>0,00</td>
</tr>
<tr>
<td>2</td>
<td>0,00</td>
<td>0,00</td>
</tr>
<tr>
<td>3</td>
<td>36,30</td>
<td>40,00</td>
</tr>
<tr>
<td>4</td>
<td>41,00</td>
<td>45,00</td>
</tr>
<tr>
<td>5</td>
<td>57,40</td>
<td>60,00</td>
</tr>
<tr>
<td>6</td>
<td>81,10</td>
<td>85,00</td>
</tr>
<tr>
<td>7</td>
<td>99,23</td>
<td>100,00</td>
</tr>
<tr>
<td>8</td>
<td>104,94</td>
<td>100,00</td>
</tr>
<tr>
<td>9</td>
<td>81,15</td>
<td>90,00</td>
</tr>
<tr>
<td>10</td>
<td>61,18</td>
<td>70,00</td>
</tr>
<tr>
<td>11</td>
<td>38,44</td>
<td>30,00</td>
</tr>
<tr>
<td>12</td>
<td>0,00</td>
<td>0,00</td>
</tr>
</tbody>
</table>

Source: Author’s calculation

Table 1 shows that the dynamic behavior of the model of the marketing influence on the hotel availability is in compliance with relevant information obtained from a real model. The results of the simulation have given the expected results.

The influence of marketing on building new hotel capacities can be analyzed by simulating impact of individual parameters on hotel capacities as shown in scenario 1.

Scenario 1. The change of demand for hotel capacities is given in Table 2.
An exponential average diagram of demand for hotel capacities is shown on Figure 2. The decision to build new hotel capacities is based on the forecast of the future value of demand, using previous information of the value of that size. In the order to reduce the effect of a random fluctuation of demand, smoothing of information was made and also the delay of information was taken into account.

Figure 2 The exponential average demand of hotel capacities

Decisions are often made based on the forecast of a future value of some size - in this case demand for hotel capacities, using previous information on the value of that magnitude.

The forecast based on one value usually does not meet the fluctuation of size in time, so a larger number of previous values is regularly taken and based on the estimation of the predicted value. Most commonly used are statistical methods based on the so-called smoothing information, which in different ways takes the average of the previous changes in size of importance (Munitić, 1989, p.107)
Smoothing information leads to a reduction in the effect of a random fluctuation, and it also introduces a delay, which in this case is expressed by the SMOOTH function.

According to the exponential average demand of hotel capacities, the desired hotel capacities are determined. If the difference between desired and actual hotel capacity exceeds 450 beds, it is encouraged to build new capacities. The average time of physical cancellation of hotel capacities is 120 months which is shown in Figure 3.

Figure 3 The physical cancellation of hotel capacities

Source: Author’s own

Figure 4. The diagram of the difference between real and desired hotel capacities

Source: Author’s own
7. CONCLUSION

Both the qualitative and quantitative system dynamics modelling of the marketing influence on building new hotel capacities have been presented in this paper.

Decisions, which include wide financial, technical, logistic and environmental resources, demand the decisions’ simulation before they go into action in a form of policy realization. System Dynamic Simulating Modeling showed its efficiency in practice as very suitable means for solving the problems of management, of behavior, of sensibility, of flexibility of behavior dynamics of very complex systems such as hotel company.

Both the structural dynamic model and the development diagram have been created on the basis of the mental-verbal model. The above mentioned models have been used to create a mathematical and simulation model.

The obtained results confirm the validity of such synthetic models, which suggests the possibility of multiple use, especially in university education processes, education processes in hotel companies, design of new hotel companies, and diagnosis of possible disturbances in the work of individual hotel companies.

As the hotel is a complex organizational system in which a whole range of hotel services and departments play an important role in successful business, a systematic approach of performance analysis is required. The analysis should include the impact of each service and department on the overall performance of the hotel.

Since only the influence of marketing on building new hotel capacities is analyzed in this paper, in further research it is necessary to include the influences of all departments: technical, human resources, sales, marketing, maintenance, procurement etc. on making decision about new capacities. Given the complexity of hotel business operations as well as their individual services, it can be concluded that this work is only one “step” on the way to solving this very complex task.

REFERENCE


TRADE
ANALYSIS AND PROSPECTS OF DEVELOPMENT OF WINE EXPORT FROM PREFECTURE OF DRAMA

Review

UDK: 663.2:339.564
JEL classification: L66, Q11, R38

Abstract

One of the reasons of the crisis we are experiencing today is the dramatic reduction of the primary sector. However, in regions such as the prefecture of Drama, there is the possibility of developing and strengthening of the primary sector in the wine domain. This study presents the development of wine industry and its recent export activity. More specifically, it analyses the wine domain existing situation in the prefecture of Drama and the export activity from 2009 to 2015. There is a trend going around favoring extroversion in the Greek winemaking industry after the advent of the economic crisis in Greece in 2009. It also analyses the wine sector’s existing situation in global, national and regional level, especially in the prefecture of Drama. The survey highlights useful conclusions concerning the production, the consumption, the stocks, the imports and exports of wine and the obstacles encountered in the export activity.
Moreover, the dynamics of Drama’s winery and activity, including wine exports for the six years 2009-2015 both to the EU countries and with the third countries after the collection of secondary data, are presented and analyzed. Finally, it presents the export activity of prefecture of Drama in comparison to domestic/national export activity is also analyzed for the same period of time. Although the survey was conducted in a particular region, it draws useful conclusions which can be exploited for generalization in future work.

Keywords: Wine exports, Drama’s wine exports, Wine market

1. INTRODUCTION

The vineyards of the Drama region in Northern Greece have literally been reborn during the last 30 years, thanks to the efforts and the insistence of the local winemakers. Today it continues to be one of the Greek regions with a strong wine-growing activity (Makrionitou, N., 2015).

Drama vineyards, with an area of approximately 5,200 acres, are exemplary cultivations and spread out in the valley as well as on the low hills to the east of the city, mainly in the areas of Hadrian, Agora, Mikrohorio, Kokkinogion and on the slopes of Mount Menikio on clay soils (Netsika, M., 2016). Small vineyards are the main characteristic of the winemaking industry in general, throughout Greece (Kyriakou, A., 2014).

In the wider region of Drama there are a total of seven (7) exemplary winemaking units that base their production on privately owned vineyards, where excellent varieties of grape varieties are grown and have been recognized both by the domestic and international markets, winning international awards and distinctions. Most wine factories in the region are certified with ISO 9001 and HACCP (Net Municipality of Drama Greece, 2016).

At the beginning of the modern wine history of the region, the dominant varieties were French (especially of the Bordeaux region), so as quality wines with a commercial perspective to be provided. In addition, there were other internationally renowned cosmopolitan varieties as well, mainly French and Italian (Export Academy, 2014). In recent years, there has been a significant shift in the enhancement of the Greek varieties dominated by Asyrtiko, Malagousia and Agiorgitiko, which are used either in blends with international varieties or for the production of unicolored wines (Papadopoulos, 2016). The characteristic blends of international and Greek varieties, such as Sauvignon Blanc and Asyrtiko, are more familiar to the foreign consumers and help them get to know the modern face of Greek winemaking (Drama vines and wines of Drama, (2015-2016α).
2. THE LOCAL WINE PRODUCTION

Drama does not produce PDO wines (Protected Designation of Origin). It only produces PGI (Protected Geographical Indication) wines, known as Local Wines of Drama, Hadrian and Agora, as well as wines without any indication. PGI (Protected Geographical Indication) wines account for 99.5% of the total production while only 0.5% are wines without any indication. Of the total PGI wine production for 2009-2015, 43% were red wines / PGIs, while 57% white wines / PGIs (Fournari N., 2016).

![Chart 1 Wine production 2009-2015 in prefecture of Drama per category](image)

Source: Ministry of Agriculture

Table 1

<table>
<thead>
<tr>
<th>YEAR</th>
<th>PGI RED WINE (HL)</th>
<th>PGI WHITE WINE (HL)</th>
<th>NEITHER PGI/PDO RED WINE (HL)</th>
<th>NEITHER PGI/PDO WHITE WINE (HL)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>9284.28</td>
<td>11195.04</td>
<td>79</td>
<td>69.2</td>
<td>20627.52</td>
</tr>
<tr>
<td>2010</td>
<td>8437.35</td>
<td>7937.76</td>
<td>165.1</td>
<td>14.5</td>
<td>16554.71</td>
</tr>
<tr>
<td>2011</td>
<td>6516.53</td>
<td>8937.9</td>
<td>34</td>
<td>0</td>
<td>15488.43</td>
</tr>
<tr>
<td>2012</td>
<td>4785.26</td>
<td>6430.66</td>
<td>65.7</td>
<td>38.85</td>
<td>11320.47</td>
</tr>
<tr>
<td>2013</td>
<td>5809.57</td>
<td>7454.49</td>
<td></td>
<td></td>
<td>13264.06</td>
</tr>
<tr>
<td>2014</td>
<td>5221.55</td>
<td>8866.49</td>
<td></td>
<td></td>
<td>14088.04</td>
</tr>
<tr>
<td>2015</td>
<td>6763.86</td>
<td>10640.14</td>
<td></td>
<td></td>
<td>17404.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td>46818.4</td>
<td>61462.48</td>
<td>343.8</td>
<td>122.55</td>
<td>108747.23</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture

On the basis of the data collected by the Ministry of Agriculture, local wine production is characterized by annual fluctuations in the six-year period of 2009-2015 with an overall reduction of 15.6%. From 2009 and afterwards,
when the Greek economic crisis began, we have a continuous decline in the wine production, culminating in the year 2012, (Table 1). In the following years (2013, 2014, 2015), wine production is gradually increasing, despite the fact that 2015 production is 15.6% less than that of 2009 (20.627,52HL / 2009 versus 17.404,00HL / 2015) (Hellenic Statistical Authority, 2016).

3. WINES EXPORTS OF DRAMA

The progress of wine exports of Drama in the period 2009 - 2015, according to ELSTAT and the Drama Customs Office, is steadily rising except in 2010. The total exports of wine to third countries and to EU countries increased by 114.50% in quantity (lt) and by 70.36% in value (€) (Table 2). Characteristically, in the period 2009-2015, the value of wine exports to European Union countries is increased by 56.00% while to Third Countries is twice as high (104.47%), (Stefanidou, C., 2007).

The average unit export prices per liter of wine are subjected to significant fluctuations. Exports to European Union countries, although they started in 2009 at a high average unit price per liter (7.90 € / lt), then declined steadily to reach 5.65 € / lt in 2015. Despite the fact that exports to Third Countries started with a high average unit price of 7.46 € / lt in 2009, then prices fell slightly, and in 2015 the average returned to the 2009 levels (Table 3).

Unfortunately, the data provided cannot explain the variation in average wine prices over the period 2009-2015, since a number of parameters are not known, as for example the type per quantity of wine exported each year. It seems, however, that the increase in exports must have been affected by the decrease in the average price, but it is not the only reason why the average price of wine to third countries has returned to the 2009 levels without exports to be reduced.

Table 2

| YEAR   | EU COUNTRIES | OUTSIDE OF EU COUNTRIES | TOTAL
|--------|--------------|-------------------------|--------
| 2009   | 194,924.50   | 86,901.50               | 281,826.00
| 2010   | 161,356.25   | 96,380.75               | 257,737.00
| 2011   | 263,376.75   | 112,346.25              | 375,723.00
| 2012   | 293,107.25   | 169,410.75              | 462,518.00
| 2013   | 324,687.01   | 177,557.99              | 502,245.00
| 2014   | 380,270.64   | 170,840.36              | 551,111.00
| 2015   | 425,117.50   | 179,420.50              | 604,538.00
| Variation 2009 to 2015 | 118%         | 106.46%                 | 114.50% |

Source : Hellenic Statistical Authority
Also, as we can see in table 3 and chart 2, the low average export price in the countries of the European Union is 5.65 €, compared with the high average price in third countries, which is stabilized at 7.39 €. This signifies that the export profile is addressed to low price category products in the European market, compared to the medium and high-end products exported to the market of the Outside EU-Countries.

### Table 3

Unit price per €/lt of Drama’s export wine 2009-2015

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Unit price / EU Countries</th>
<th>Unit price / Outside EU Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>7.90</td>
<td>7.46</td>
</tr>
<tr>
<td>2010</td>
<td>8.12</td>
<td>7.42</td>
</tr>
<tr>
<td>2011</td>
<td>6.00</td>
<td>6.96</td>
</tr>
<tr>
<td>2012</td>
<td>5.80</td>
<td>6.84</td>
</tr>
<tr>
<td>2013</td>
<td>5.49</td>
<td>6.86</td>
</tr>
<tr>
<td>2014</td>
<td>5.48</td>
<td>6.63</td>
</tr>
<tr>
<td>2015</td>
<td>5.65</td>
<td>7.39</td>
</tr>
</tbody>
</table>

*Source: Hellenic Statistical Authority*

### Chart 2: Unit price per €/lt of Drama’s export wine 2009-2015

*Source: Hellenic Statistical Authority*
4. EXPORTS TO COUNTRIES OUTSIDE EU

According to the Hellenic Statistical Authority and Drama’s Customs Office (chart 3), the most important markets for Drama’s wines exports to countries outside the EU are the, USA, China, Switzerland, and Canada. The USA holds the lion’s share of 68% of the volume and 67% of the value, followed by China with 9% and 10% respectively. The following chart presents the main destination countries outside the EU of Drama’s Wine for the year 2015, in volume and value. In summary, exports of wine to countries outside the EU in volume and value in period 2009-2015 are presented in table 4 and chart 4 (Hellenic Statistical Authority, 2016).

Table 4

Drama’s wine export in volume (lt) to outside EU countries 2009-2015

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CHINA</th>
<th>U.S.A</th>
<th>CANADA</th>
<th>SWITZERLAND</th>
<th>OTHER COUNTRIES</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>0.00</td>
<td>76,367.00</td>
<td>5,665.50</td>
<td>4,869.00</td>
<td>0.00</td>
<td>86,901.50</td>
</tr>
<tr>
<td>2010</td>
<td>243</td>
<td>75,813.00</td>
<td>7,095.00</td>
<td>9,530.75</td>
<td>3,699.00</td>
<td>96,380.75</td>
</tr>
<tr>
<td>2011</td>
<td>18,526.50</td>
<td>49,857.00</td>
<td>7,663.50</td>
<td>6,447.75</td>
<td>29,851.50</td>
<td>112,346.25</td>
</tr>
<tr>
<td>2012</td>
<td>29,457.00</td>
<td>97,456.50</td>
<td>10,278.00</td>
<td>12,336.00</td>
<td>19,883.25</td>
<td>169,410.75</td>
</tr>
<tr>
<td>2013</td>
<td>18,061.50</td>
<td>112,860.74</td>
<td>7,158.00</td>
<td>9,425.25</td>
<td>30,052.50</td>
<td>177,557.99</td>
</tr>
<tr>
<td>2014</td>
<td>25,065.86</td>
<td>107,539.50</td>
<td>10,251.00</td>
<td>9,055.50</td>
<td>18,928.50</td>
<td>170,840.36</td>
</tr>
<tr>
<td>2015</td>
<td>16,641.00</td>
<td>121,802.50</td>
<td>7,606.50</td>
<td>13,051.50</td>
<td>20,319.00</td>
<td>179,420.50</td>
</tr>
<tr>
<td>TOTAL</td>
<td>10,994.86</td>
<td>641,696.24</td>
<td>55,717.50</td>
<td>64,715.75</td>
<td>122,733.75</td>
<td>992,858.10</td>
</tr>
</tbody>
</table>

Source: Hellenic Statistical Authority
5. EXPORTS TO EU COUNTRIES

Wine exports to EU countries and Germany in value, volume and average unit price per liter in the period 2009-2015 are presented in table 5 and chart 5.

Table 5

Drama’s wine export in value (€), in volume (lt), in unit price €/lt to EU countries & Germany, 2009-2015

<table>
<thead>
<tr>
<th>YEAR</th>
<th>EXPORTS TO GERMANY</th>
<th></th>
<th>EXPORTS TO EU COUNTRIES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VALUE (EURO)</td>
<td>VOLUME (LITRE)</td>
<td>UNIT PRICE €/lt</td>
<td>VALUE (EURO)</td>
</tr>
<tr>
<td>2009</td>
<td>894,660.00</td>
<td>110,678.00</td>
<td>8.08 €</td>
<td>1,540,262.23</td>
</tr>
<tr>
<td>2010</td>
<td>934,242.00</td>
<td>111,915.00</td>
<td>8.35 €</td>
<td>1,310,694.95</td>
</tr>
<tr>
<td>2011</td>
<td>978,750.00</td>
<td>143,382.00</td>
<td>6.83 €</td>
<td>1,581,194.70</td>
</tr>
<tr>
<td>2012</td>
<td>1,131,851.00</td>
<td>194,833.00</td>
<td>5.81 €</td>
<td>1,701,458.66</td>
</tr>
<tr>
<td>2013</td>
<td>1,318,340.00</td>
<td>235,731.00</td>
<td>5.59 €</td>
<td>1,782,927.83</td>
</tr>
<tr>
<td>2014</td>
<td>1,541,291.00</td>
<td>277,722.00</td>
<td>5.55 €</td>
<td>2,082,809.48</td>
</tr>
<tr>
<td>2015</td>
<td>1,696,639.00</td>
<td>301,253.00</td>
<td>5.63 €</td>
<td>2,402,751.36</td>
</tr>
</tbody>
</table>

Source: Hellenic Statistical Authority
The most important market for Drama’s wines exports to the European Union is Germany, representing 71% of the total volume exported to the EU countries. The chart 5 depicts the percentage of Drama’s wines exports to the EU countries and Germany for 2015, in volume and value.

During the six-year period (2009-2015), wine exports to Germany show a significant increase in value (89.6%) and almost a double increase in volume (172%), with the average unit price per liter being significantly reduced by 30.3%. (chart 6, 7).

Source: Hellenic Statistical Authority

Chart 5: Drama’s wine export in value (€), in volume (lt) to EU countries & Germany -2015

Chart 6: Drama’s wine export in value (€), in volume (lt) to Germany 2009-2015

Source: Hellenic Statistical Authority
Drama exports its wines to only three countries (Germany, U.S.A and China). From these, two countries (Germany and the USA) absorb 66% of the volume and account for 67% of the value of its total exports. (table 6, 7 and chart 8, 9). There are possibilities to export in other countries, if these counties know Dramas wines by suitable marketing.

Table 6

Drama’s wine export to Germany & USA in volume (%), 2009-2015

<table>
<thead>
<tr>
<th>DRAMA’S WINE EXPORT IN VOLUME (lt) 2009-2015</th>
<th>%</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Countries &amp; Outside EU Countries Germany</td>
<td>1,375,514.00</td>
<td>641,696.24</td>
<td>45%</td>
</tr>
<tr>
<td>U.S.A</td>
<td>3,035.698.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Hellenic Statistical Authority
Table 7

Drama’s wine export to Germany & USA in value (%), 2009-2015

<table>
<thead>
<tr>
<th>DRAMA’S WINE EXPORT IN VALUE (€) 2009-2015</th>
<th>%</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Countries &amp; Outside EU Countries</td>
<td>Germany</td>
<td>U.S.A</td>
<td>Germany</td>
</tr>
<tr>
<td>19,383,421.00</td>
<td>8,495,773.00</td>
<td>4,383,001.00</td>
<td>44%</td>
</tr>
</tbody>
</table>

Source: Hellenic Statistical Authority

Chart 9: Drama’s wine export to Germany & USA in value (%), 2009-2015

Source: Hellenic Statistical Authority

As it is well known (Leonidou, L.C., 2000; Papalexiou, C., 2009), exports to individual markets - countries are subjected to various risks, such as embargoes due to political changes. A recent example is the case of the Russian embargo, the imposition of which on agricultural products of the EU countries created huge problems for Greek exports (Pappous, G., 2015). In order to avoid such problems in the future, the market in Drama should seek alternative markets (new markets) and expand them.

Finally, the Drama exports are compared to the total Greek exports for the six-year period (2009-2015), in tables 8, 9, 10 and charts 10,11. The volume of Drama’s wine exports shows a significant increase of 118% to EU countries, and 106.4% to outside EU countries compared to Greek exports, which declined towards EU countries by 13%, while they remained stable to outside the EU countries. In terms of value, Drama’s wine exports increased by 104.5% to outside the EU countries and by 56% to EU countries. In relation to Greek exports, which showed an increase of 80% to outside the EU countries, while they remained almost constant to the EU countries.
Table 8

Drama and Greece’s wine export in volume (lt), 2009-2015

<table>
<thead>
<tr>
<th>YEAR</th>
<th>DRAMA’S WINE EXPORT IN VOLUME (lt) 2009-2015</th>
<th>GREECE’S WINE EXPORT IN VOLUME (lt) 2009-2015</th>
<th>DRAMA %</th>
<th>DRAMA %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EU Countries</td>
<td>Outside the EU Countries</td>
<td>EU Countries</td>
<td>Outside the EU Countries</td>
</tr>
<tr>
<td>2009</td>
<td>194,925</td>
<td>86,902</td>
<td>26,638,800</td>
<td>3,767,200</td>
</tr>
<tr>
<td>2010</td>
<td>161,356</td>
<td>96,381</td>
<td>33,225,700</td>
<td>5,341,100</td>
</tr>
<tr>
<td>2011</td>
<td>263,377</td>
<td>112,346</td>
<td>29,450,700</td>
<td>4,498,500</td>
</tr>
<tr>
<td>2012</td>
<td>293,107</td>
<td>169,411</td>
<td>29,761,100</td>
<td>4,660,400</td>
</tr>
<tr>
<td>2013</td>
<td>324,687</td>
<td>177,558</td>
<td>19,854,500</td>
<td>4,506,700</td>
</tr>
<tr>
<td>2014</td>
<td>380,271</td>
<td>170,840</td>
<td>23,779,900</td>
<td>4,393,000</td>
</tr>
<tr>
<td>2015</td>
<td>425,118</td>
<td>179,421</td>
<td>23,151,900</td>
<td>4,676,400</td>
</tr>
</tbody>
</table>

Source: Hellenic Statistical Authority

Chart 10: Drama and Greece’s wine export in volume (lt), 2009-2015 to outside the EU Countries

Source: Hellenic Statistical Authority

Chart 11: Drama and Greece’s wine export in volume (lt), 2009-2015 to EU Countries

Source: Hellenic Statistical Authority
Table 10

Drama and Greece’s wine export in value (€), 2009-2015

<table>
<thead>
<tr>
<th>YEAR</th>
<th>DRAMA’S WINE EXPORT IN VALUE (€) 2009-2015</th>
<th>GREECE’S WINE EXPORT IN VALUE (€) 2009-2015</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EU Countries</td>
<td>Outside the EU Countries</td>
</tr>
<tr>
<td>2009</td>
<td>1,540,262</td>
<td>648,443</td>
</tr>
<tr>
<td>2010</td>
<td>1,310,695</td>
<td>715,300</td>
</tr>
<tr>
<td>2011</td>
<td>1,581,195</td>
<td>781,519</td>
</tr>
<tr>
<td>2012</td>
<td>1,701,459</td>
<td>1,159,605</td>
</tr>
<tr>
<td>2013</td>
<td>1,782,928</td>
<td>1,217,567</td>
</tr>
<tr>
<td>2014</td>
<td>2,082,809</td>
<td>1,133,006</td>
</tr>
<tr>
<td>2015</td>
<td>2,402,751</td>
<td>1,325,882</td>
</tr>
</tbody>
</table>

Source: Hellenic Statistical Authority

Table 11

Unit price per lt/€, 2009-2015

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EU Countries</td>
<td>Outside EU Countries</td>
</tr>
<tr>
<td>2009</td>
<td>7.90</td>
<td>7.46</td>
</tr>
<tr>
<td>2010</td>
<td>8.12</td>
<td>7.42</td>
</tr>
<tr>
<td>2011</td>
<td>6.00</td>
<td>6.96</td>
</tr>
<tr>
<td>2012</td>
<td>5.80</td>
<td>6.84</td>
</tr>
<tr>
<td>2013</td>
<td>5.49</td>
<td>6.86</td>
</tr>
<tr>
<td>2014</td>
<td>5.48</td>
<td>6.63</td>
</tr>
<tr>
<td>2015</td>
<td>5.65</td>
<td>7.39</td>
</tr>
</tbody>
</table>

Source: Hellenic Statistical Authority

Chart 12: Unit price per lt/€ to EU Countries, 2009-2015

Source: Hellenic Statistical Authority
The data provided by the Hellenic Statistical Authority and Drama’s Customs office cannot explain with certainty the reasons why there is a different tendency in the exports of Drama wine from wine exports in the rest of Greece. However, one of the reasons that seem to affect Drama’s exports to EU countries is the reduction of the average export unit price of wine by 28.5% (Table 11). To find out other reasons, we contacted remarkable local wine producers who informed us that at the start of the economic crisis they paid special attention to the pricing of their wines, they put newer, more economical wine labels in the market, and turned quickly and earnestly towards new markets (extroversion) that were not active until then (http://data.europa.eu/, 2016; http://ec.europa.eu/agriculture/, 2016).

![Chart 13: Unit price per lt/€ to outside the EU Countries, 2009-2015](source: Hellenic Statistical Authority)

6. CONCLUSIONS

It is noteworthy that in the six-year period (2009-2015) the average export unit price of the Drama wines to both outside EU countries and EU countries is much higher than Greece’s average export unit price (Chart 12,13). This suggests that the wineries of Drama are targeting the expensive wine market, although in the last six years - in times of economic crisis - they produce and export wines at a lower price so as to be more market competitive.

REFERENCES


[2] Export Academy, (2014), “Wine from Drama: Among the best Greek wines”, http://www.exportacademy.gr/%CF%84%CE%B1%CE%BA%CF%81%CE%B1%CF%83-%CE%B9%CE%AC%CF%84%CE%B7%CF
TRADE


BOSNIA AND HERZEGOVINA’S FOREIGN TRADE: SOURCE OR BARRIER FOR ECONOMIC DEVELOPMENT

Review
UDK: 339.5(497.6)
JEL classification: F14

Abstract

Bosnia and Herzegovina (B&H) is a small and open country in which foreign trade plays an important role. Unfortunately, the country has a continuous foreign trade deficit. As is well known, export growth, as an autonomous component of aggregate demand, has a multiplicative effect on the growth of national income, but in open economies the effects of foreign trade on income depend also on marginal propensity to import. Export to foreign markets for many domestic companies is difficult due to their low competitiveness and many non-tariff barriers. The main characteristic of B&H foreign trade, as well as a continuous deficit, is having the European Union (EU) as the dominant trading partner. What can be done to improve the country’s position in international trade? The countries in the region have expressed their aspiration to join the EU by CEFTA and Stabilization and Association Agreement (SAA). Integration is intertwined with trade-relations. So, how Adopted SAA that entered into force on February 1, will affect our foreign trade balance? Will it stabilize our economy and be a development basis, or will it put B&H exporters in even harder position? Progressive liberalization may have unintended consequences. Analysis of B&H foreign trade in the light of the EU association process, indicators of production and geographical structure and suggested answers on mentioned questions are given below.

Keywords: foreign trade, deficit, Bosnia and Herzegovina
1. INTRODUCTION

Why do some countries enjoy a high standard of material living, while others do not? Why do some countries achieve high growth rates, while other countries have much slower growth, or even stagnate? One of the main macroeconomic goals of each country along with stable prices, high rate of employment and a stable foreign trade balance, is to achieve as high as possible economic growth and development. All these goals are linked.

Bosnia and Herzegovina is a transitional country, burdened by many problems of post-war economic reconstruction. It is a small and open country in which foreign trade plays an important role. It has a lot of potential (especially in agriculture, forestry, and tourism) but it also has many barriers to development of a balanced internal market, which became too big for weak B&H economy to deal with and to achieve a better position in the international market. B&H has expressed a desire to join the EU by the CEFTA and Stabilization and Association Agreement (SAA). Integration with the larger market is intertwined with trade-relations. The focus of this paper is B&H foreign trade characteristics, expected agreement effects on the B&H economy, expected impacts on foreign trade balance and on opportunities to grow and develop.

In this paper the applied policy of B&H foreign trade, the reasons why B&H has a foreign trade deficit, the most important trade partners, the structure of trade, and the advantages and disadvantages brought by liberalization and agreements with the EU are examined. The weaknesses and potentials of the B&H economy are highlighted.

The literature relevant to foreign trade and its link to growth and development in general is reviewed. Then the general situation in B&H and its impact on the country’s position in international trade is described. The SAA, as a main economic and political Agreement that has a great influence on B&H foreign trade policy and its position in the international market, is summarized. Finally, conclusions and recommendations for policy makers are presented. Understanding the interaction of numerous obstacles and which of them have a direct impact on foreign trade, growth and development is important for policy makers and for prioritizing reforms.

2. LITERATURE REVIEW

Considering for how long the influence of foreign trade on economic development and general well-being has been known, foreign trade has long been a subject of special interest for overall economic policy and economic science in general. The observed motives, incentives and benefits of foreign trade have resulted in many different theories and doctrines about it, from the mercantilist protectionist doctrine, through classicist to neo-liberalist and globalist. There are numerous discussions in the literature based on the link between growth, trade and openness.
A positive correlation between them is advanced in the work of Adam Smith (1776). According to Smith, opening up free trade does not result in only a one-time productivity growth (for example in a period of trade liberalization), but it leads to a permanent increase in productivity. Since then numerous theories have supported his conclusions. Their common characteristic remains the attempt to prove the positive correlation between the openness of the economy and long-term rapid growth, and the superiority of a liberalized economy compared to a protectionist economy, through the channels of more efficient allocation of resources, faster productivity growth, and, particularly important in recent years, faster and easier transfer of knowledge (Lovrinčević, 1999). The fundamental issue of economic development is related to the attitude of the country towards international trade. The country should resist the temptation to produce all it needs. Openness to trade and FDI (‘FDI’ – Foreign Direct Investment) will help in ensuring the rapid movement of countries forward to the best world practices in different sectors (Samuelson, Nordhaus, 2010, p.532).

The question that many countries are facing, and to which there is no universally accepted answer in economic science, is whether a country has GDP growth thanks to the increase in exports (ELG, “export led growth”), or growth in exports is a consequence of economic growth (GDE, ‘growth driven exports’)? The answer to this question is determined by the specifics of individual economies. There is no common formula for understanding economic growth, but a lot is known about it in general. Determinants of growth are: institutions (e.g. quality of educational and government institutions, effectiveness and responsiveness of government), wealth of natural resources, productivity, technological advancement, openness (share in international trade), geographical location and FDI. There is clearly a positive correlation between investments and growth. It is also known that countries achieving economic growth have a large component of foreign trade in their GDP. An empirical study in Croatia for 2000-2011 rejected an ELG hypothesis, and accepted a GDE hypothesis for the Croatian economy (Ratkovski, Bićanić, 2013). It was concluded that export growth in Croatia is derived from indigenous economic conditions, primarily GDP growth. This may mean that conventional measures encouraging exports may not result in its growth. Ratkovski believes that policy makers should therefore strive to improve the economic conditions for businesses in Croatia with regard to their business abroad. In other words, for the Croatian producers primary target is Croatian market, and obstacles at home market cause negative trends in foreign trade too. Bićanić builds on Ratkovski’s conclusions. A growth diagnosis carried out in Croatia in 2011 defined low mobility as a main growth obstacle. Openness is one of the mobility dimensions. It is the most important growth factor and the main growth obstacle that has a much wider meaning than export, import and foreign trade by themselves (Ratkovski, Bićanić, 2013).

Feder (1983) analyzed the sources of growth in the period 1964–1973 for a group of semi-industrialized less-developed countries. His conclusion is that growth can be generated not only by increases in the aggregate levels of labor and capital, but also by the reallocation of existing resources from the less efficient non-export sector to the higher productivity export sector (Feder, pp. 59-73).
Many empirical studies have interpreted results in regressions of output variables on export variables as providing support for an export promotion development strategy. Such an interpretation is questionable since these regressions provide no means of determining the direction of causality. Woo and Marshall did causality tests between exports and growth for 37 developing countries. The results cast considerable doubt on the validity of the export promotion hypothesis (Woo, Marshall, 1985).

Gjokaj points out the link between trade, integrations and development. In a country’s relations, the development of trade is one of the most important characteristic and component of a modern economic system. As a driver of development, trade is today a new starting point for the integration of the development of economic, political, cultural and social relations, general social stability and modern EU processes. (Gjokaj, 2011, pp 65-78).

By CEFTA 2006 creation and SAA implementation, B&H has been exposed to foreign trade liberalization and adaptation of the national economy, which should bring higher B&H international competitiveness before its full entrance into EU membership. The measurement of the share of intra-industry trade in foreign trade as a whole, as well as in individual economic branches, could be a very significant indicator of the competitiveness and B&H economic development in the context of macroeconomic policy as a whole (Marić, 2011).

In his paper, Marić tested the hypothesis that the turnover of goods increment and foreign trade deficit decrement should be positively correlated with the intra-industry trade increment. The economic hypothesis, which has been confirmed by many studies and empirical data in the past, that countries that have longer common borders and have reduced barriers on foreign trade (customs duty and quotas) will have a higher level of intra-industry trade among themselves, is not confirmed by the example of B&H foreign trade. Although B&H mainly has had an increasing trend of foreign trade amount and high openness of the economy, the majority of B&H foreign trade is inter-industry trade. This is a consequence of B&H’s significantly lower competitiveness level than all of its foreign partners.

3. METHODOLOGY AND DATA

Qualitative analysis is based on published scientific and professional papers dealing with the issue. Secondary data sources used in qualitative analysis are the Agency for Statistics of Bosnia and Herzegovina and the B&H Ministry of Foreign Trade and Economic Relations. Based on the collected data, descriptive methods, analysis of import and export data by tariff number, and comparative analysis are used.

In addition to the absolute values of imports and exports, surpluses and deficits, in the foreign trade analysis simple indicators are used: foreign trade coefficient (openness indicator), the export-import ratio (the rate of import coverage by export). Calculations are explained in the paper.
The paper is exploratory, as it aims to provide familiarity with a certain problem and make it more accessible and known, and also it provides a basis for future empirical research.

4. BOSNIA AND HERZEGOVINA - FOREIGN TRADE ANALYSIS

No matter how materially rich some countries are, there is no country that is economically independent, i.e. able to produce everything its population needs, without foreign trade, especially nowadays when needs are more dynamic and product cycle is getting shorter and shorter. For strong economies, foreign trade and foreign markets represent resources, as well as target markets for their goods and services. For smaller countries, foreign trade represents a way of market expansion as well as the ability to satisfy population needs better and possibility to get new technologies and equipment which will stimulate their growth. Foreign trade necessity is shown through openness which implicates foreign trade rate in the country’s overall GDP. In general, small countries like Bosnia and Herzegovina, are more open than big ones.

Why is it important to analyze foreign trade continuously?

Analysis of foreign trade is important:

- For companies involved in foreign trade or those that are planning to be involved, so that they fully understand what is required to be successful.
- For foreign trade policy creators to set the best climate for success.
- For foreign companies that are considering investments in a certain country, to enable the best policies to encourage such investment.
- For university professors, students, journalists, politicians and the wide public in order for them to fully understand their country’s situation.

For example, companies involved or planning to be involved in foreign trade should know product structure for imports as well in exports, i.e. which products are mostly present, in what quantity, what prices, and what are the future expectations for these variables etc. Foreign trade policy creators make decisions to improve country status based on foreign trade analysis (for example, they increase or decrease customs, quotas, or completely abolish them, stimulate exporters, make administration procedures easier or harder to deal with etc.)

Statistical data published by statistical agencies and institutes, custom services, central banks, and foreign trade chambers are extremely important. Bosnia and Herzegovina has a foreign trade balance deficit, the bigger share of which is a deficit of trade in goods, amounting to 6,723 billion BAM in 2016. An imbalance may be periodical, cyclic and structural. B&H’s balance of payment is characterized by structural imbalance in total, as well as in foreign trade. Perhaps a better description would be “fundamental imbalance” (Stojanov, 2000,
p.39) that can be corrected only by changing the currency rate, but in B&H we have a currency board. This imbalance is caused by the country’s market opening up too rapidly after total destruction by the war of 1992-95 and the fact that the country is on a much lower level of technological development comparing with its main foreign partners.

Bosnia and Herzegovina is a small and open-trading country. In a perfect competitive market it is impossible for it to affect global trade movements. The size comparison with the GDPs (2015, USD rounded) of some other countries shows a stark difference: B&H 16,191 billion, Switzerland 670,789 billion, USA 18,036,648 billion, EU 16,311,897 billion, Croatia 48,732 billion (Word Bank, 2017). The only possible solution is more effective adjustment.

The openness to trade of a country firstly depends on its foreign trade policy (i.e. how liberal or protective), then on the level of productivity and technological development, then on the production structure and production diversity, tradition etc. The most important foreign trade partner for B&H is the EU, of which it is an associate member and potential candidate for membership. EU is the largest market participating in global GDP with a share of 20%. The EU has had a major role in creating the global market system, due to GDP value (14 billion EUR) and internal market openness with 2,415 billion EUR export value and 2,188 billion EUR import value. Activities of the EU helped in creation of the World Trade Organization (WTO). Trade openness has brought and continues to bring many advantages to the EU, considering that more than 30 million jobs in the Union depend on foreign trade.

<table>
<thead>
<tr>
<th>Year</th>
<th>Import (in thousand BAM)</th>
<th>Export (in thousand BAM)</th>
<th>GDP (in million BAM)</th>
<th>Openness</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>13,616.20</td>
<td>7,095.50</td>
<td>25,346</td>
<td>82%</td>
</tr>
<tr>
<td>2011</td>
<td>15,525.43</td>
<td>8,222.11</td>
<td>26,210</td>
<td>90%</td>
</tr>
<tr>
<td>2012</td>
<td>15,253.04</td>
<td>7,858.34</td>
<td>26,193</td>
<td>88%</td>
</tr>
<tr>
<td>2013</td>
<td>15,170.17</td>
<td>8,380.50</td>
<td>26,743</td>
<td>88%</td>
</tr>
<tr>
<td>2014</td>
<td>16,199.28</td>
<td>8,681.74</td>
<td>27,304</td>
<td>91%</td>
</tr>
<tr>
<td>2015</td>
<td>15,851.692</td>
<td>8,987.194</td>
<td>28,522</td>
<td>87%</td>
</tr>
</tbody>
</table>

Source: Agency for Statistics of Bosnia and Herzegovina, author’s calculations

Openness is measured by the contribution of foreign trade to overall GDP and it shows how much a country depends on its trading partners. Openness (foreign trade coefficient) of B&H in the period 2010-2015 is shown in Table 1.

Foreign trade coefficient (Io) indicates foreign trade share in a country's total GDP in one period. It is calculated as the ratio of the sum of exports (E) and imports (M) to GDP:

\[
I_o = \frac{E+M}{GDP}
\]
High openness and uncompetitive trade result in a high foreign trade deficit. Foreign trade volume does not necessarily indicate a good openness rate. Many industrial sectors may be exposed to foreign competition and it does not reflect on import growth. Those sectors may keep their market share and prevent imports by being highly competitive and by keeping prices low enough. The importance of exports for a country’s growth and development is measured through increase in employment, growth in international reserves and national competitiveness, getting new knowledge and technologies, and sustainable growth and development. Export minimizes addiction of local firms to local markets and implies risk dispersion. Barriers for B&H export growth are: grained production, insufficient production capacities, lack of clear national export strategy, difficult access to global capital, problems connected with transfer of new technologies and knowledge etc. Competitiveness is *conditio sine qua non* in international trade and it determines a country’s success and position in foreign trade.

According to economic theory, liberalization and freeing up of a country’s foreign trade result in a higher standard of living for its participants, but under the premise of an equal development level. By involving themselves into free trade, countries accomplish benefits, but also they are more exposed to disorder in global trade (external shock). WTO is the leader of trade liberalization and a promoter of free multilateral trade. That is why most countries are members. It is a risky to stay outside, both in economic and in the political terms. The WTO has 164 members, and B&H has had the status of an observer since 1999.

**Table 2**

<table>
<thead>
<tr>
<th>Year</th>
<th>Export (in thousand BAM)</th>
<th>Export index t/ (t-1)</th>
<th>Import (in thousand BAM)</th>
<th>Import index t/ (t-1)</th>
<th>Volume (in thousand BAM)</th>
<th>Index</th>
<th>Balance (in thousand BAM)</th>
<th>Index</th>
<th>Export/ import ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>5.531,20</td>
<td>82,4</td>
<td>12.355,18</td>
<td>75,8</td>
<td>17.886,38</td>
<td>77,7</td>
<td>-6.823,98</td>
<td>71,2</td>
<td>44,77</td>
</tr>
<tr>
<td>2010</td>
<td>7.095,50</td>
<td>128</td>
<td>13.616,20</td>
<td>110,2</td>
<td>20.711,71</td>
<td>115,8</td>
<td>-6.520,70</td>
<td>95,5</td>
<td>52,11</td>
</tr>
<tr>
<td>2011</td>
<td>8.222,11</td>
<td>115,9</td>
<td>15.525,43</td>
<td>114</td>
<td>23.747,54</td>
<td>114,6</td>
<td>-7.303,32</td>
<td>112</td>
<td>52,96</td>
</tr>
<tr>
<td>2012</td>
<td>7.858,34</td>
<td>95,6</td>
<td>15.253,04</td>
<td>98</td>
<td>23.111,38</td>
<td>97,3</td>
<td>-7.394,70</td>
<td>101</td>
<td>51,52</td>
</tr>
<tr>
<td>2013</td>
<td>8.380,50</td>
<td>106,6</td>
<td>15.170,17</td>
<td>99</td>
<td>23.550</td>
<td>101,8</td>
<td>-6.789,68</td>
<td>91,8</td>
<td>55,24</td>
</tr>
<tr>
<td>2014</td>
<td>8.681,74</td>
<td>103,6</td>
<td>16.199,28</td>
<td>106,8</td>
<td>24.881,02</td>
<td>105,6</td>
<td>-7.517,54</td>
<td>110,7</td>
<td>53,59</td>
</tr>
<tr>
<td>2015</td>
<td>8.987,31</td>
<td>103,5</td>
<td>15.851,86</td>
<td>97,8</td>
<td>24.839,18</td>
<td>99,8</td>
<td>-6.864,55</td>
<td>91,3</td>
<td>56,70</td>
</tr>
<tr>
<td>2016</td>
<td>9.416,62</td>
<td>104,8</td>
<td>16.139,33</td>
<td>101,8</td>
<td>25.555,94</td>
<td>102,8</td>
<td>-6.722,71</td>
<td>97,9</td>
<td>58,35</td>
</tr>
<tr>
<td>Average</td>
<td>7.682,16</td>
<td>15.030,13</td>
<td>22.712,29</td>
<td></td>
<td></td>
<td></td>
<td>-7.347,97</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: t - current year, t-1- previous year

*Source: Agency for Statistics of Bosnia and Herzegovina, author’s calculations*
It is clear, from tables 1 and 2, the highest foreign trade deficit was in 2008, in amount higher than 9.5 billion BAM, i.e. over 150% of export value. The global economic crisis also hit B&H foreign trade. Last year the deficit was 6.72 billion BAM, 141.84 million less than for 2015, i.e. 2.07% less. Export/import ratio in 2016 was 58.35%, the highest ratio over the ten year period 2007-2016. This indicator is important because it shows how much a country is able to maintain balance in foreign trade. Exports were 4.78% higher in 2016 than in 2015, and the average annual value of exports over the last 10 years (2007 to 2016) was 7.68 billion BAM. Imports were 1.81% higher in 2016 than in 2015, and the average annual value of imports over the last 10 years was 15.03 billion BAM.

Table 3

<table>
<thead>
<tr>
<th>Year</th>
<th>Real GDP growth rate (%)</th>
<th>Foreign trade growth rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>3.03</td>
<td>15.8</td>
</tr>
<tr>
<td>2011</td>
<td>1.05</td>
<td>16.6</td>
</tr>
<tr>
<td>2012</td>
<td>2.48</td>
<td>-2.7</td>
</tr>
<tr>
<td>2013</td>
<td>-1.1</td>
<td>1.8</td>
</tr>
<tr>
<td>2014</td>
<td>1.3</td>
<td>5.6</td>
</tr>
<tr>
<td>2015</td>
<td>0.7</td>
<td>-0.2</td>
</tr>
</tbody>
</table>

Source: Agency of statistics of Bosnia and Herzegovina and author’s calculations

Figure 1 The real GDP growth and foreign trade growth rates, 2010-2015

Source: Agency of statistics of Bosnia and Herzegovina and author’s calculations

Looking at figure 1, we can see that in 2010, 2011, and in 2014, real GDP growth and foreign trade growth had positive correlation. In rest of the observed period correlation was negative. It stays to see what will happen after coming into force Adopted SAA. Conclusion is that foreign trade is not source of economy growth in B&H. It is inevitable to work on productivity growth and production growth, competitiveness, policy stabilization and foreign trade policy, as an engine of development, after that foreign trade can be growth accelerator.
In 2016 the largest export categories were: seats (TN 9401) 6.97% of total exports; treated wood (TN 4407) 3.63%; electrical energy (TN 2716) 3.42%; shoes with rubber sole (TN 6403) 3.34%; other furniture and its parts (TN 9403) 3.16%. As we can see, export structure of B&H is highly unfavorable. Products with lower stage of treatment and large numbers of items are dominating exports. That implies a low coefficient of export concentration. B&H does not have strategically important products and it is on a low specialization level. As an autonomous component of national income, exports should have a significant influence on it to change positively. Changes in public consumption, autonomous personal consumption, autonomous investments and exports result in multiple changes of income in the same direction. However, in open trade we must consider the role of imports. It indicates that the effect of foreign trade depends on marginal propensity to import, and then, with a domino effect, that influence is reflected on the other macroeconomic variables (employment, production level, price stability…). As evident in the tables, B&H has had a foreign trade deficit for many years. It is a country unique in the world due to its policy and administrative structure, demography structure, and many other things, including a currency board. That means it is crucial to achieve growth in production and export, in order to maintain macroeconomic stability and macroeconomic policy based on actions of the currency board, because changes cannot be made by national currency devaluation.

Table 4
Goods with highest share in B&H export according Tariff number

<table>
<thead>
<tr>
<th>ORDINAL NUMBER</th>
<th>TARIFF NUMBER</th>
<th>DESCRIPTION</th>
<th>VALUE OF EXPORT (MILON BAM)</th>
<th>PERCENTAGE 2016</th>
<th>INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>9401</td>
<td>Seats;</td>
<td>521,16</td>
<td>577,09</td>
<td>613,58</td>
</tr>
<tr>
<td>2.</td>
<td>4407</td>
<td>Treated wood;</td>
<td>242,04</td>
<td>252,51</td>
<td>291,52</td>
</tr>
<tr>
<td>3.</td>
<td>2716</td>
<td>Electrical energy;</td>
<td>150,17</td>
<td>471,91</td>
<td>308,67</td>
</tr>
<tr>
<td>4.</td>
<td>6403</td>
<td>Shoes with rubber sole;</td>
<td>253,98</td>
<td>301,88</td>
<td>337,54</td>
</tr>
<tr>
<td>5.</td>
<td>9403</td>
<td>Furniture and its parts;</td>
<td>197,07</td>
<td>219,08</td>
<td>223,43</td>
</tr>
<tr>
<td>6.</td>
<td>8708</td>
<td>Parts and supplies for motor vehicles with tariff numbers 8701 until 8705;</td>
<td>158,88</td>
<td>212,59</td>
<td>245,64</td>
</tr>
<tr>
<td>7.</td>
<td>7601</td>
<td>Aluminum in row shapes;</td>
<td>457,19</td>
<td>397,07</td>
<td>367,78</td>
</tr>
<tr>
<td>8.</td>
<td>8544</td>
<td>Insulated wire and other insulated electrical conductors;</td>
<td>101,75</td>
<td>98,53</td>
<td>139,10</td>
</tr>
<tr>
<td>9.</td>
<td>2836</td>
<td>Carbonates; Peroxide carbonates</td>
<td>123,27</td>
<td>123,70</td>
<td>151,80</td>
</tr>
<tr>
<td>10.</td>
<td>6406</td>
<td>Footwear parts</td>
<td>102,03</td>
<td>112,78</td>
<td>146,87</td>
</tr>
</tbody>
</table>

Total (1-10) 2,307,55 2,767,14 2,825,04 2,903,14 3,022,13 32,09 104,10
Other 5,550,79 5,613,35 5,855,81 6,084,17 6,394,4 67,91 105,10
Total 7,858,34 8,380,50 8,681,74 8,681,74 8,987,31 100,00 104,78

Source: Analysis of foreign trade exchange of Bosnia and Herzegovina 2016, MINISTRY OF FOREIGN TRADE AND ECONOMIC RELATIONS
Table 5 shows goods with the highest contribution to the trade deficit. In table 6, it is evident that in 2016 deficit declined compared with 2015, both in industrial products trade (1.75 % less) and in foreign trade in agricultural products (2.79% less). It is necessary to emphasize that the openness of a country to trade has to be in accord with its level of development. Excessive and premature opening and liberalization may have fatal consequences for a young, undeveloped economy like that of B&H, mostly because of ineffective producers without a chance to compete in the market with highly competitive firms from more developed countries. The result is that B&H imports goods that may be produced by her own economy, for which there are resources and which do not require sophisticated technology. The most obvious example is in the agricultural sector. Despite good climate, and available land and water supplies, that sector has the highest share in the foreign trade deficit: more than two billion BAM (table 6). The fact that the overall foreign trade deficit in 2016 was 7 billion BAM and that 30% of the overall deficit was made up of trade in agricultural products, means that something has to be done in this sector which has so much potential. In particular, this sector is the largest employer of people in B&H; these people have a proud history and experience in farming and, with more attention to training and improvements in methods of farm management and technology, great gains could be made in its contribution to reducing the trade deficit, both by replacing imports and increasing exports. Many improvements in the management of small farms are possible and these would allow farmers to remain on their land and have a good income, while greatly assisting the country’s economy. From the tables above we can see that export and import structure did not change a lot during past few years.

Source: Analysis of foreign trade exchange of Bosnia and Herzegovina 2016, MINISTRY OF FOREIGN TRADE AND ECONOMIC RELATIONS
### Table 6

Structure of foreign trade in goods (by the sort of products, in million BAM)

<table>
<thead>
<tr>
<th>SORT OF PRODUCT</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>Share (%)</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPORT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td>7,220,35</td>
<td>7,706,71</td>
<td>8,032,41</td>
<td>8,169,68</td>
<td>8,482,21</td>
<td>90,08</td>
<td>103,83</td>
</tr>
<tr>
<td>Agricultural</td>
<td>637,99</td>
<td>673,78</td>
<td>649,34</td>
<td>817,63</td>
<td>934,41</td>
<td>9,92</td>
<td>114,28</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7,858,34</td>
<td>8,380,50</td>
<td>8,681,74</td>
<td>8,987,31</td>
<td>9,416,62</td>
<td>100,00</td>
<td>104,78</td>
</tr>
<tr>
<td>IMPORT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td>12,436,50</td>
<td>12,418,79</td>
<td>13,447,46</td>
<td>12,960,89</td>
<td>13,189,36</td>
<td>81,72</td>
<td>101,76</td>
</tr>
<tr>
<td>Agricultural</td>
<td>2,816,54</td>
<td>2,751,38</td>
<td>2,751,81</td>
<td>2,890,97</td>
<td>2,949,96</td>
<td>18,28</td>
<td>102,04</td>
</tr>
<tr>
<td>TOTAL</td>
<td>15,253,04</td>
<td>15,170,17</td>
<td>16,199,28</td>
<td>15,851,86</td>
<td>16,139,33</td>
<td>100,00</td>
<td>101,81</td>
</tr>
<tr>
<td>DEFICIT/SURPLUS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td>-5,216,15</td>
<td>-4,712,08</td>
<td>-5,415,06</td>
<td>-4,791,21</td>
<td>-4,707,16</td>
<td>70,02</td>
<td>98,25</td>
</tr>
<tr>
<td>Agricultural</td>
<td>-2,178,55</td>
<td>-2,077,60</td>
<td>-2,102,48</td>
<td>-2,073,34</td>
<td>-2,015,55</td>
<td>29,98</td>
<td>97,21</td>
</tr>
<tr>
<td>TOTAL</td>
<td>-7,394,70</td>
<td>-6,789,68</td>
<td>-7,517,54</td>
<td>-6,864,55</td>
<td>-6,722,71</td>
<td>100,0</td>
<td>97,93</td>
</tr>
</tbody>
</table>

Source: Analysis of foreign trade exchange of Bosnia and Herzegovina 2016, MINISTRY OF FOREIGN TRADE AND ECONOMIC RELATIONS

The role of companies from B&H in the foreign market is not improving because of their low competitiveness, but also because of non-custom barriers used by highly developed countries. Despite the GATT limiting traditional foreign trade barriers by making custom rates lower, which since then have been minimized by WTO, there are new, sophisticated instruments of protection that developed countries use. That includes different standards, technical regulations, certificates, confirmations etc., which producers from undeveloped states cannot satisfy or require. All those sophisticated measures imply many non-custom barriers, i.e. measures of indirect protection, and make foreign trade even harder for those companies from undeveloped countries like B&H. This results in less foreign trade in quantity of goods than it would be possible without those barriers. Also in trade with EU, there are many standards that are hard to reach for B&H exporters.

If you look at the payment balance of any country, you would see that the highest value item of current account is import and/or export. That is the reason why all countries are focusing on export growth, which is conducted by different instruments, and is mostly described under the concept of export stimulation or export subsidies. The goal is to increase competitiveness of exporters and to improve their position in global trade. It is achieved by many tools: export credits, direct export subvention, help from the state through giving various confirmations and certificates for required standards and through providing information about foreign partners, return of toll and customs, currency devaluation, promotion of export etc.

B&H may export only a few products, mainly raw materials and semi-manufactured products, due to not satisfying international laws and standards applying to foreign trade. On the another hand, without an adequate within-country system of regulation and safety and quality checks for imported products, almost everything can be imported into the country. This is not only bad for the trade deficit but it allows the import of inadequate and potentially harmful products.
Table 7

<table>
<thead>
<tr>
<th>Region</th>
<th>Value (Million BAM)</th>
<th>Share (%)</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEFTA</td>
<td>-320,87</td>
<td>-343,52</td>
<td>-504,84</td>
</tr>
<tr>
<td>EFTA</td>
<td>9,48</td>
<td>58,61</td>
<td>78,07</td>
</tr>
<tr>
<td>FTA*</td>
<td>-266,63</td>
<td>-318,60</td>
<td>-347,81</td>
</tr>
<tr>
<td>TOTAL</td>
<td>-7.394,70</td>
<td>-6.789,69</td>
<td>-7.517,53</td>
</tr>
</tbody>
</table>

Notes: * Free Trade Agreements Countries (Turkey)

Source: Analysis of foreign trade exchange of Bosnia and Herzegovina 2016, MINISTRY OF FOREIGN TRADE AND ECONOMIC RELATIONS

Knowing geographical import-export concentrations is very important, because the activities in foreign trade partner countries affect B&H. Table 7 shows foreign trade balance by regions. Comparing to 2015, in 2016 trade in goods deficit with EU (0.11 %) and Turkey (1.44 %) declined. In the period 2012-2016, the deficit in trade with the EU declined, which is a good trend that encourages the EU association process. In the same period, the trade deficit in goods with CEFTA countries increased. Only with EFTA was there a foreign trade surplus. In 2016 compared to 2015, there is export growth (14.5 %) and import growth (2.31%), as well as surplus growth (38.71%). Trade in goods with the “rest of the world” is characterized with export growth (by 2.72 %), import decline (by 3.88%), as well as deficit decline (by 5.49%).

B&H has the highest deficit in trade with: China, Serbia, Italy, Croatia, Russia, Germany, Poland, Turkey, USA and Brazil. The highest B&H export share goes to (up to 74.32 %): Germany, Italy, Croatia, Serbia, Slovenia, Austria, Turkey, Montenegro, Netherland and Hungary (B&H Agency for statistics).

Croatia left CEFTA, and joined the EU in 2013, what affected B&H and Croatia foreign trade balance because of custom reintroduction on imported products from Croatia to B&H. The value of import from Croatia fell from 2.2 billion BAM in 2012 to 1.6 billion in 2016.

5. THE STABILIZATION AND ASSOCIATION AGREEMENT (SAA)

On June 16, 2008, B&H and the European Communities and their Member States signed the Stabilization and Association Agreement (SAA) and the Interim Agreement on trade and trade-related matters (IA), which entered into force on July 1, 2008. The Stabilization and Association Agreement (SAA) is a new, third generation agreements which the EU offers to Western Balkan countries. The aim is to contribute to economic and political stability of the
Western Balkans. The ultimate goal is a formal integration into the European Union.

The SAA is an agreement of “mixed” character, which means that in areas of cooperation member countries are partly responsible and partly the European Union. Also, before it comes into force, it must be ratified in the parliaments of all Member States and the European Parliament. This means that, except the European Union, the contracting parties are also all member countries, since the SAA covers areas not only within the competence of the EU. It consists of 135 articles and ten chapters: General Principles; Political Dialogue; Regional cooperation; Free movement of goods; Movement of workers, business settlement, provision of services, movement of capital; Harmonization of rights, enforcement of competition law and rules; Justice, Freedom and Security; Politics of cooperation; Financial cooperation; Institutional, general and final provisions.

According to the evolution clause, the SAA confirms the status of a potential candidate for membership in the Union. This is a lot more than other countries have received in their accession treaties. “With the entry into force of the SAA, the EU and B&H relations are moving to a higher level because the obligations arising from political dialogue and regional cooperation (which are not in the Interim Agreement) become part of the contractual relationship” (Directorate for European Integration, 2015). With the entry into force of the SAA, B&H committed itself to concluding regional cooperation agreements with other countries that have signed the SAA within a two years period, with the aim of increasing the volume of cooperation between these countries (Article 15, SAA). One of the main goals, at the same time the backbone of the SAA, is the free trade establishment between Bosnia and Herzegovina and the EU (Article 18, SAA). This implies the gradual establishment of free trade areas for a period of up to 5 years, starting with the entry into force of the IA, in accordance with SAA provisions and the GATT 1994 and WTO provisions. The EU-B&H free trade zone was established in accordance with Article 3 of the IA, on January 1, 2014.

Why is SAA presented in this paper? It is expected that entry the SAA into force will have direct and indirect economic and political benefits, since its activation proves commitment to EU integration and is evidence of gradually fulfillment of membership criteria. The agreement strengthens the position of B&H in the region and the world, gives positive signals to investors and ensures better compliance with the principles of justice, freedom, security, etc. Indirectly, this should lead to an increase in investment, employment and the growth of gross domestic product.

However, damages are also expected from Adapted SAA. Adapted SAA entered into force on February 1, 2017. It defines the import quotas free of custom charge and defines that for all the quantities above them customs will be fully charged. Dairy and meat industries and their processing sectors will be under the biggest challenges due to high competition. B&H producers cannot compete with the low prices of the EU producers stimulated by CAP (Common Agricultural Policy) e.t.c. That is only one example. The only way out of this situation for domestic farmers would be to increase export to the Turkish market because
B&H has signed Free Trade Agreements (FTA) with Turkey. But SAA should boost trade between its parties, not to turn it over to another partner. Because of that, it is important to further research possible effects and contradictions of SAA. Fruits and vegetables producers could have gains, as they can export to the EU without customs. Sugar producers also could have gains because they get a 2500-tonne quota and winegrowers because they get a 20,000-hectolitre quota. But the question is how much will be done because our agricultural producers do not meet the safety and quality conditions that the EU is looking for. Also we do not have so many sugar producers and exporters. Germany has pledged to provide technical assistance for the agricultural sector in recovering after the damage that may arise from this agreement.

Announced advantages are many. Freedom of trade in goods which is to be created by the SAA, means that Bosnia and Herzegovina companies have access to an internal EU market with around 500 million consumers, and companies will be able to provide services throughout the EU and compete for public tenders. The SAA also supports the EU and Bosnia and Herzegovina institutional relations established by the “transitional agreement”. The approximation of EU standards for product quality will lead to greater competitiveness and private sector over time, while the gradual introduction of higher consumer protection standards will increase the safety of the citizens. The benefits of SAA are also: greater market competition, which will potentially lead to lower prices and greater choice of goods and services for Bosnia and Herzegovina citizens. The entry into force of the SAA should enable a better business environment due to the gradual approximation of EU laws and standards, which will lead to greater security and confidence for domestic and foreign investors. It should also expect greater efficiency of institutions and more progress on issues of crime rate reduction and corruption, promotion of higher education reform, development of democracy and human rights, and media independence.

The implementation of the SAA implies a new comprehensive reform and full compliance with the Copenhagen Criteria (1993) and the Madrid Criteria (1995), i.e.: the stability of institutions guaranteeing democracy, the rule of law, human rights and the protection of minorities; The existence of a functioning market economy, capable of dealing with competitive pressures and market forces within the Union; The ability to assume membership obligations, including the commitment to the goals of the political, economic and monetary union; Creating conditions for integration by adapting administrative structures. All this requires full engagement of the entire administration, the non-governmental sector and the society in general.

6. OBSTACLES, CHALLENGES AND PERSPECTIVES

Foreign trade system can’t be isolated and studied separately from the rest of the economy, because it is necessary to provide a stimulating business environment for domestic companies and for attracting foreign investors. The basic prerequisite for stable and long-term economic growth and development
and for strengthening competitiveness is labor productivity growth. Small countries must have above average efficiency and competitiveness so that they can participate successfully in the international provision of labor (Marić, 2013, pp.12). “The results of the analysis suggest that the Bosnia and Herzegovina economy has a problem of low productivity, namely Bosnia and Herzegovina is at 31% of the EU average “(Federal Institute for Development Programming, Labor productivity in Bosnia and Herzegovina - a condition for strengthening the competitiveness - p.3). In order to increase productivity, it is necessary to increase investment in human capital, technology and the development of company management. The main macroeconomic challenges facing B&H in joining the EU are the high level of public consumption, high budget deficit, high public debt and high foreign trade deficit. The biggest problem is the lack of economic integration in B&H itself. The precondition for achieving all the advantages of accessing the EU market, i.e. for optimal economic development, is both legal and institutional unity in the country, not only by harmonizing the entity’s legal framework and coordination of all levels of government, but through the creation of a comprehensive, unified legal system within the country. How can B&H align its legislation with the EU when it does not have a single legislative framework within the country? Many obstacles and barriers are obvious. For example, in the agriculture sector, which has great potential to develop, having in mind its significant share in the foreign trade deficit, B&H has been able to withdraw substantial funds from EU pre-accession funds and boost the export of agricultural products. Establishment of country level bodies that would manage these funds was necessary, but it was not fulfilled because of the lack of political consensus. Once again, the main barrier, among others, (maybe even the source of all the others) is policy. And without stable policy, there is no economic stability and possibility to grow and develop.

When it comes to food, in EU food safety and consumer protection is the most important. This has led to the adoption of the legal requirements to ensure that the food that is sold in the EU market is safe. EU legislation determines the maximum amount of residues of pesticides and contaminants that can be found on/in food and this must be respected. Because the laboratory capacity in B&H is still not enough to carry out laboratory tests for control of residues in produce in its own market, exporters are forced to perform analyses in neighboring countries. Also, many administrative taxes have to be paid by exporters. Capacities have to be expanded and the country has to lower taxes to encourage exporters and increase their competitiveness.

A big obstacle for investors is the different legislation across the country. If foreign investors hire workers with residences in different entities of B&H, they have to use different payment procedures. No wonder foreign investors avoid B&H. Direct foreign investments were down 40% in 2015 (Foreign Investment Promotion Agency of Bosnia and Herzegovina). In the World Bank 14th annual report, ‘Doing Business 2017 - Equal Opportunities for All’, B&H ranked is 81st in the world for its ease of doing business for foreign investors. It is the lowest ranked country in the region, taking 65 days and 12 procedures to start a business, and 179 days and 15 procedures to obtain
a building permit, which is more than the regional average.

We can’t talk about reducing public spending unless a single institutional and legal framework is established. The country must stand behind its exporters, educate them and prepare them for foreign markets, assist them with various incentives and lower taxes, work more on export promotion...but firstly it must make a good climate for producers to grow in their own market. The only thing that is growing is the government spending, and it is not used as a basis to stimulate future growth but to cover current needs.

B&H has potential in agricultural sector (for e.g.in raspberries production B&H is at 11 place in the world- Vodič za izvoz voća povrća u Evropsku Uniju, 2016), healthy food production, wood industry, tourism, metal industry (reorientation in production from intermediate products to final products). But many challenges also: required reforms in further EU association process, taxes decrement to stimulate producers, more subventions in agriculture, subventions for new jobs, political stability...

7. CONCLUSIONS

Bosnia and Herzegovina suffers from chronically large trade deficits, mostly due to rebuilding efforts after the war. In all aspects, the European economy is more competitive than the B&H economy, and many negative effects of liberalization will be shown very quickly, as positive effects are evident only in the long term. But B&H has opted for the European path and has to be ready for the thorns leading up to European stars. As it wants to be part of the EU, B&H has opened its borders to much more competitive EU products. At the same time, authorities must find a way to help domestic producers to increase competitiveness, firstly making a positive business climate for its domestic markets and then by promoting its producers, both in foreign markets and on the domestic market, trying to remind domestic consumers why it is important to buy domestic. This applies in particular to the agricultural sector, wood sector and tourism where B&H has great potential that must be exploited. Even limited analysis of foreign trade and the general state in the B&H economy, as undertaken here, suggests that authorities should be dedicated to solving numerous legal, institutional, political and economic issues in order to achieve the desired rate of economic growth and, in time, economic development and economic convergence with EU countries. At present, foreign trade is based on large imports, and thus cannot be the basis of economic growth and development. In the current economy conditions, growth will certainly not be driven by exports. There is also a need for inevitable painful structural reforms, which should increase the competitiveness of the B&H economy.
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Book with an author


Book with an editor


Journal paper


Paper published in conference proceedings


Internet resource


Vodič za izvoz voća i povrća u Evropsku Uniju. 2016,
THE DETERMINANTS OF HIGH-TECHNOLOGY EXPORTS: A PANEL DATA APPROACH FOR SELECTED OECD COUNTRIES

Preliminary communication
UDK: 339.564:004
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Abstract

This paper uses a panel data approach to analyze the determinants of high-technology exports in selected OECD countries between the years 1989 to 2015. We used High-technology exports (current US$) as dependent variable and FDI (foreign direct investment), patent application of residents, GDP growth rate and Gross capital formation - % of GDP as explanatory variables. The export structure of countries is increasingly moving towards technology-intensive products such as ICT (information, communication technology), aerospace, computing and office equipment, electronic, chemical products, pharmaceutical electrical machinery. The Export structure had an important role in the economic growth theories of many countries since the 1960s, as export growth has been associated with faster productivity and GDP growth. We aimed to find out the relationship between the high-technology exports and explanatory variables which we listed for selected 14 OECD countries (Canada, Denmark Finland, France, Germany, Israel, Korea, Netherland, Norway Switzerland, Sweden, Turkey, UK, USA).

Keywords: High Technology Export, GDP Growth, FDI, Panel Cointegration
1. INTRODUCTION

One of the reasons underlying economic growth and income level differences between developed and developing countries is undoubtedly the technology infrastructures these countries have. The workforce, natural resources, economic and political stability, educational status, density of R&D activities, innovation etc. in the country, while many factors lead to differences in development and growth among countries, the most important factor is the technology on which production is based.

High Technology (high tech) is used to express goods and services with innovative and advanced technology companies and industries. Such firms are generally firms that are reliant on advanced scientific and technological expertise and are generally characterized by high R&D spending (employment) in their labor force (total labor force). High technology sectors; Aerospace, computers, pharmaceuticals, scientific instruments and electric machines. Countries that have developed advanced technology infrastructures in these sectors can finally achieve better levels of economic growth.

The OECD has classified for different way of exports - high, medium-high, medium-low and low-technology. “The classification is based on the importance of expenditures on research and development relative to the gross output and value added of different types of industries that produce goods for export. Examples of high-technology industries are aircraft, computers, and pharmaceuticals; medium-high-technology includes motor vehicles, electrical equipment and most chemicals; medium-low-technology includes rubber, plastics, basic metals and ship construction; low-technology industries include food processing, textiles, clothing and footwear”(OECD,2011).

Many countries that want to be in a better position as economic growth and development level are now paying more attention to technology-based industrial development. New Silicone Voyages have begun to be established in many countries of the world. Especially considering the developments in the last two decades, we are aware that many Western European countries are starting to establish venture centers in newly established universities.

In recent years, the rapidly increasing use of high technology in the world and high-tech base production has made it possible to accelerate the export of high technology. The ability of emerging countries to rise to the level of developed countries depends on the size of the High Technology Exports that these countries can make. It is important for developing countries to rapidly focus on quality education and R&D activities, to produce and export high-tech products.

The aim of working in this context is; analyzing the determinants of high-tech exports (foreign direct investment, domestic patent applications, investment) in selected OECD countries (Canada, Denmark Finland, France, Germany, Israel, Korea, Netherlands, Norway Switzerland, Sweden, Turkey, UK, USA) by using panel data approach. For this purpose, the study was formed in
the following way. In the introduction section, we mentioned definition of high-
tech product, in the second section, we examined literature related to the study,
and the theoretical framework of the study in the third section is presented. In
the fourth part of the study, dataset, model and method were introduced and
evaluations about the results of the study were made. In the conclusion part
of the study, policy proposals were presented through empirical findings and
determinations.

2. LITERATURE

Since the 1960s, export growth has played a central role in many
countries’ economic growth strategy; Because export growth is associated with
faster productivity and GDP growth (Bernard and Jensen, 2004). Growth analysis
of exports and its general economic effects have been an important topic in the
economic literature in the last decade. However, more recently, As researchers
began to understand the relationship in between innovation, high-technology-
based international trade and overall economic performance, they focused more
on high-tech trade (Tebaldi, 2011, p.343).

This growing interest in high-tech trade is largely due to the fact that an
economy of international commerce of high-tech products informs about general
competitiveness and its position in the global technology market. This interest
also contributes to how innovation in a dynamic economic environment affects
its comparative advantages and the relative importance of high technology to
international markets (Tebaldi, 2011, p.344).

The literature highlights that high tech industries are the most developing
industries in international trade. It contributes to boosting its performance in other
sectors through the dynamism and positive externalities that it unfolds. In this
sense, studies on High Technology Exports and High Technology are given below.

Hatzichronoglou (1997), in the context of economic globalization,
stated that technology is an important factor in growing business and increasing
competitive power. Technology-intensive manufacturing firms are creating more
innovation, entering new markets and using existing resources more productively,
resulting in higher pay for people they employ.

Srholec (2007) found that the technological capabilities of a country,
gross enrolments in tertiary education, the number of patents and the amount
of computer access, have positive effects on high technology exports. In
addition, the size of the economy plays an important role in High Technology
Exports. According to Srholec (2007) findings, developing countries attract
manufacturing-based fragments of global production networks in electronics,
developing countries must focus on high specialization of in electronics.

Braunerhjelmand Thulin (2008) show that R&D investments are a key
factor in determining high-tech exports among OECD countries, and that market
size is not an effect of high-tech trade.
Lee and Hong (2010) analyzed the period between 1970 and 2004, the economies of 71 countries. Lee and Hong, according to the countries that have been exporting traditional and low-tech products, the countries that have been exporting high-tech products achieved the result of faster economic growth.

Tebaldi (2011) describes the determinants of high-tech exports from 1980 to 2008 using a panel dataset. This research is the result of human capital, foreign direct investment inflow and international trade openness being the main factors affecting the global market performance of a country’s high-tech industry. At the same time, it also shows that institutions are not directly contributing to high-tech exports. This article also shows that gross capital formation, savings and macroeconomic volatility have no significant impact on high technology exports.

Göçer (2013) examined the relationship between R&D expenditure and high-tech products, the effects of high-tech exports on foreign trade and economic growth, using data from 1996-2012 in a study of 11 emerging Asian countries. As a result of this study, it has been determined that R&D expenditures have a positive relationship between high-tech products and high-tech product exports have increased economic growth.

Ismail (2013) examined the impact of innovation work on high tech exports in 10 Asian countries (Hong Kong, India, Malaysia, Singapore, Thailand, Japan, China, Korea, Indonesia, Philippines) in his 2004-2009 study. As a result of the study, it was determined that innovation activities increased high-tech product exports and were a very important factor on exports.

Kılıç, Bayar and Özekicioğlu (2014) examined the relationship between R&D expenditures and high-tech exports in the G8 countries from 1996 to 2011. R&D expenditures and real exchange rates have been found to have a positive effect on exports of high technology products.

Akhvelediani and Sledziewska (2015) used panel data analysis for the years 1999-2011 on the basis of the generalized gravity model, for Visegrad countries (V-4: Czech Republic, Poland, Slovakia, Hungary) and the core countries of EU 15, have tried to explain the determinants of technology exports. Although the effect of accumulation of physical and human capital on export growth for the EU-15 countries is similar, it has a positive effect on the V-4 countries.

3. THEORETICAL FRAMEWORK

It is known that development strategies directed towards exports have a positive impact on economic growth, as they increase efficiency and productivity in resource distribution, increase market size and increase foreign direct investment. In this sense, it is important to increase exports in many developing countries that want to catch industrialized countries. If exports have an effect on the growth channel, undoubtedly the biggest effect is the production
and marketing of high technology products. This point is also crucial for the countries to export to high technology and concentrate their investments in these fields.

“High Technology” is used to represent companies and industries that represent cutting-edge technologies, products or services that are innovative. These companies are commonly credited with advanced scientific and technological expertise and are generally characterized by high turnover (total work force) and high R&D expenditure (employment) (Seyoum, 2004, p.145).

Davis (1982) showed the first systematic effort in the sense of measuring the high-tech combination. The products produced by high-tech producers have been identified as the products with the highest R & D expenditure according to the value of the senders. Davis has identified the top 10 products as high-tech, in order, from technology density to lowest rank. The second definition of High Technology was made by Hatzichronoglou (1997). He has prepared a list of high-tech products. This list is the result of calculations of AR-GE intensity (AR-GE spending / total sales) covering six countries (USA, Japan, Germany, Italy, Sweden, Netherlands). Finally, the OECD has identified the best definition of products as advanced technology (Seyoum, 2004, p.146).

The empirical descriptions of high-tech products overlap at large. Although the literature has been developed differently, different definitions have been made, according to the definition made by OECD, high-tech products are listed as space, computer and office equipment, electronics and telecommunication, scientific instruments, chemical products, drugs, weapons, electrical and non-electrical equipment.

With the rapid development of communications and transportation technologies along with the decline in costs over the 1960s, the world economy has entered a period of rapid globalization. In such a period, developed economies opened their economies more quickly in international trade, while export increases in East Asian countries were influential in the opening of emerging economies to international trade (Balcilar et al., 2014, p.451). Today, many western countries have begun to develop their production with a focus on technology-based industrial growth as a result of such a growth and competitive environment brought by globalization. These countries, which can make good use of the advantages arising from technology-intensive production, have come to assume a better position in international trade.

On the other hand, in today’s global economy where globalization is growing and competition is intense, countries can only export if they can produce appropriate quality products with high quality products (Özer and Çiftçi, 2009, p.42). Given that the world economy’s greatest share in the composition of international trade in the last two decades is the high-tech products, the production of these products has been vital to sustaining global competition.

An achievement in High Tech Exports is often seen as a measure of the competitiveness of industries in a country. Markets for high-tech products is growing faster than other products, the reason is that as the income elasticity of
demands, product innovation and productivity increase is higher. If a competitive position can be achieved in high-tech products, it is easier for a country to sustain its export growth (Mani, 2004, pp. 26-27).

The competitive position of a country in high technology exports is linked to various factors. If we move from general literature; factor conditions of an individual country, amount of direct foreign investment, domestic competition environment, demand conditions and exchange rates, patent applications, R&D expenditures, innovation etc. many factors play an important role in high technology exports of the country.

Factor conditions, human, physical information and capital resources and the type, quality and usability of the infrastructure allow the competition to be realized. The creation of advanced technology factors (highly skilled human resources, research centers and communication infrastructure) is considered to have critical importance for creating and developing competitive advantage in technology intensive sectors. Therefore, the higher the number of scientists and engineers involved in a country’s R&D, emphasis on mathematics and scientific training, R&D business associations with other countries and the state of modern physical infrastructure, the higher the exports of high technology (Seyoum, 2004, pp. 150-151).

Foreign direct investment is considered as one of the factors contributing to the economic growth and development of the developing countries. Foreign direct investment contributes to the growth rate of the countries to which it has gone and increases its competitiveness in production and international arena. Multinational corporations are also making technology transfers that countries can not achieve on their own, by investing in countries where labor is relatively cheaper. By using this transferred technology, the related country can increase the high technology exports (Kızılkayavd., 2017, p.67). For this reason, it is also important that high-tech investments and direct exports to the country are directed towards high-tech areas.

The presence of strong local competitors is a strong stimulus to the creation and continuity of national competitive advantage. The intensive domestic competition will ultimately create pressure to replace domestic firms and, at the same time, to look at global markets. Such violent competition will force domestic companies to succeed in international markets.

As a result of the R&D expenditures realized by the countries, technological advances and increases in the level of realized production processes are emerging. These technological developments that as a result of R & D activities arise capital accumulation, invention, innovation, efficient use of resources, etc. It manifests itself in the form of utilities. These increased benefits and technological advances as a result of the R & D work carried out by the countries are being used both to raise demand in domestic markets and to increase exports. Moreover, there is a positive relationship between R & D expenditures and patent applications, and studies have been carried out in which the patent applicants contribute to the increase in high-tech exports (Kızılkayavd., 2017, p.67).
On the other hand, it is seen in the literature studies that the increasing innovation activities as a result of these R & D studies contribute to the diversification of exports. There is a positive relationship between R & D expenditures and patent numbers and innovation. An increase in product technology content with increased innovation, production of new products and production of new and added value products will have a positive effect in terms of diversification and increase of exports (Ferragina and Pastore, 2007, pp.4-5).

4. DATA AND DESCRIPTIVE STATISTICS

Our data set covers annual data from the 1989-2015 period for 14 selected OECD countries (Canada, Denmark Finland, France, Germany, Israel, Korea, Netherland, Norway Switzerland, Sweden, Turkey, UK, USA). Table 1 denotes the definition of data set.

**Table 1**

<table>
<thead>
<tr>
<th>Definition of data set.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export</td>
</tr>
<tr>
<td>Lngdp</td>
</tr>
<tr>
<td>FDI</td>
</tr>
<tr>
<td>Investment</td>
</tr>
<tr>
<td>lnpatent</td>
</tr>
</tbody>
</table>

Our dependent variable is high-technology exports (% of manufactured exports) which incorporate aerospace, computers- office machines, electronics- telecommunications, pharmacy, electrical machinery, non-electrical machinery. We also use foreign direct investments to GDP ratio, the natural logarithm of patent applications, Gross capital formation (% of GDP) proxy for investment. All of our data are obtained from the World Bank databank. Table 2 denotes the descriptive statistics.

**Table 2**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>lngdp</td>
<td>378</td>
<td>27.17361</td>
<td>1.267417</td>
<td>24.50</td>
<td>30.52</td>
</tr>
<tr>
<td>exports</td>
<td>378</td>
<td>18.47323</td>
<td>7.643881</td>
<td>0.99</td>
<td>35.80</td>
</tr>
<tr>
<td>fdi</td>
<td>378</td>
<td>3.451735</td>
<td>6.871879</td>
<td>-3.69</td>
<td>87.40</td>
</tr>
<tr>
<td>investment</td>
<td>378</td>
<td>23.12238</td>
<td>4.219917</td>
<td>14.70</td>
<td>41.30</td>
</tr>
<tr>
<td>lnpatent</td>
<td>378</td>
<td>8.588343</td>
<td>1.725721</td>
<td>4.92</td>
<td>12.57</td>
</tr>
</tbody>
</table>
4.1 Testing Cross-section Dependency and Unit Root

The first essential step in a panel data analysis is to find out whether there is cross-section dependence or not. OECD countries integrate each other in terms of international trade and financial transactions. Globalization, custom unions, economic unions and contagious financial crises make countries sensitive to economic shocks from other countries. Because of this integration in panel data analysis, we must consider possible cross-section dependence across countries (Zhong et al, 2015). The following panel equation is estimated to manage the CD test for cross section dependency:

\[ y_{it} = x_i + \beta_i^t x_{it} + u_{it} \text{ for } i = 1, 2, \ldots, N; t = 1, 2, \ldots, T \]  

(1)

where \(i\) is the individual dimension, \(t\) is the time dimension, \(x_{it}\) is a \(k \times 1\) vector of explanatory variables, \(x_i\) and \(\beta_i^t\) are individual intercepts and slope coefficients, respectively, which are allowed to vary across states. The null hypothesis of no cross-sectional dependence- for all \(t\) and \(i \neq j\) is tested against the alternative hypothesis of cross-section dependence. To test the null hypothesis, the CD statistic is:

\[ \text{CD} = \sqrt{\frac{2T}{N(N-1)}} \left( \frac{N-1}{\sum_{i=1}^{N} \sum_{j=i+1}^{N} \hat{\rho}_{ij}} \right) \]  

(2)

where \(\hat{\rho}_{ij}\) is the sample estimate of the pair-wise correlation of the residuals from pooled ordinary least squares (OLS) estimation of equation (1) for each \(i\) (Pesaran, 2004).

Data used in this paper are from 1989-2015. As a part of our analysis we checked each of this series for cross section dependency that the hypothesis of a cross section dependency could not be rejected for all the variables. Table 3 and table 4, denotes the cross section dependency and slope homogeneity tests results respectively.

Table 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>CD-test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>exports</td>
<td>20.85</td>
<td>0</td>
</tr>
<tr>
<td>lngdp</td>
<td>46.97</td>
<td>0</td>
</tr>
<tr>
<td>fdi</td>
<td>22.88</td>
<td>0</td>
</tr>
<tr>
<td>investment</td>
<td>9.34</td>
<td>0</td>
</tr>
<tr>
<td>lnpatent</td>
<td>8.16</td>
<td>0</td>
</tr>
</tbody>
</table>
The implications of unit roots in macroeconomic data are very intense. If a structural variable, such as GDP, is not stationary and I(1), then shocks to GDP will have enduring effects (Greene, 2008). Before analyzing the determinants of high technological export we must check the stationary of the variables. We use cross-sectionally augmented ADF (CADF) unit root test which allow for the cross-section dependence to confirm variables are stationary or not (Pesaran, 2007).

The panel unit root test statistics based on CADF regressions are summarized in Table 5. \textit{CIPS statistics of CADF} test do not reject the null hypothesis of the unit root for lngdp and ln patent variables at 5% levels. When both a constant and a linear trend are included in the model, we could not reject the null at 5% and 1% for FDI, export and investment. As a result of unit root test; FDI, export and investment series are I (0) however the gdp and patent series are stationary at the level.

\begin{table}[h]
\centering
\caption{Slope Homogeneity Tests in Pesaran and Yamagata (2008)}
\label{tab:homogeneity}
\begin{tabular}{lll}
\hline
& Statistic & p-value \\
\hline
Homogeneity tests: & & \\
\tilde{\Delta} & 13.35 & 0.000 \\
\tilde{\Delta}_{adj} & 15.06 & 0.000 \\
\hline
\end{tabular}
\end{table}

\begin{table}[h]
\centering
\caption{Cross-sectionally augmented (CADF) Unit Root Test}
\label{tab:cadf}
\begin{tabular}{lccc}
\hline
& Level & First Difference & \\
& lag & Constant & Constant and Trend & \\
\hline
\textit{export} & 3 & -2.045 & -3.222*** & \\
\textit{lngdp} & 3 & -1.864 & -2.171 & -3.995*** \\
\textit{FDI} & 3 & -3.711*** & -3.954*** & \\
\textit{Investment} & 3 & -2.066 & -2.893** & \\
\textit{lnpatent} & 3 & -2.013 & -2.547 & -4.713*** & \\
\hline
10\% & 5\% & 1\% & \\
Critical values at constant & -2.14 & -2.25 & -2.44 & \\
Critical values at constant and trend & -2.66 & -2.76 & -2.96 & \\
\hline
\end{tabular}
\end{table}

***denotes the rejection of the null hypothesis at 1\% level and ** the rejection of the null hypothesis at 5\%, * the rejection of the null hypothesis at10\%, level. The optimal lag length is chosen on the basis of the Schwartz Information Criterion.

\begin{table}[h]
\centering
\caption{CIPS statistics of CADF}
\label{tab:cips_cadf}
\end{table}

1 Critical values for CADF statistics are based on Pesaran (2007) p.281 Table II(b). And Table II (c)
4.2. Estimating Cointegration Between the Variables

As presented in Table 6, the results of Westerlund (2008) Durbin_hcointegration test indicates that the null hypothesis of no-cointegration is rejected at 5 significance levels. After detecting a cointegration between the variables the, long-run parameters (cointegrating vector) should be estimated (Özcan and Arı, 2015).

<table>
<thead>
<tr>
<th>Tests</th>
<th>Statistic</th>
<th>Critical values</th>
</tr>
</thead>
<tbody>
<tr>
<td>WesterlundDurbin_h Tests, (Ho:Nocointegration)</td>
<td>1.28</td>
<td>1.645</td>
</tr>
<tr>
<td></td>
<td>0.648</td>
<td></td>
</tr>
<tr>
<td>dh_g</td>
<td>0.709**</td>
<td>2.333</td>
</tr>
<tr>
<td>dh_p</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Pooled Mean Group (PMG) estimator is an approach of Pesaran et al. (1999) that enables to estimate the short and long-run parameters which can be shown in table 6 (Pesaran at all 2007). PMG estimator allows coefficients and error variances to differ freely across countries in the short run. However, PMG assumes long run homogeneity among the panel group. PMG estimator gives the advantage to calculate error correction term which measures the speed of adjustment towards the long-run equilibrium.

<table>
<thead>
<tr>
<th>Long-run coefficient</th>
<th>PMGE</th>
<th>MGE</th>
<th>Hausman test</th>
</tr>
</thead>
<tbody>
<tr>
<td>lngdp</td>
<td>-2.61*** (0.001)</td>
<td>-4.25* (0.080)</td>
<td>2.76</td>
</tr>
<tr>
<td>FDI</td>
<td>0.39*** (0.000)</td>
<td>-0.13 (0.653)</td>
<td>(0.59)</td>
</tr>
<tr>
<td>investment</td>
<td>-0.28** (0.030)</td>
<td>-0.004 (0.987)</td>
<td></td>
</tr>
<tr>
<td>lnpatent</td>
<td>3.47*** (0.006)</td>
<td>14.96*** (0.018)</td>
<td></td>
</tr>
<tr>
<td>Error correction</td>
<td>-0.20*** (0.000)</td>
<td>-0.51*** (0.000)</td>
<td></td>
</tr>
</tbody>
</table>

The null hypothesis of hausman test which asserts, MG and PMG are consistent, but MG is inefficient, is accepted according to prob value(0.59). After the hausman test results, we consider PMG analysis.

We used GDP and patent variables in logarithm form so, the long run coefficient gives us information on the elasticity of high tech export towards the
GDP and patent across sample countries. Our findings show that 1% increase in GDP will lead 2.61% decrease in high tech exports. According to our results GCF (investment) and high tech exports have a negative and significant relationship in the long run. Patent applications effect high tech exports positively. 1% increase in patent applications will lead 3.47% increase in high tech exports. FDI has a positive and significant impact on high tech exports.

5. CONCLUSION

Having a great deal of knowledge in high technology sectors such as aerospace, computers, pharmaceuticals, scientific instruments and electric machines give a comparative advantage to countries. High technological production contributes export value added to achieve better levels of economic growth for countries. Many countries that want to be in a better position in terms of economic growth and development level are now paying more attention to technology-based industrial development. New Silicone Voyages have begun to be established in many countries of the world.

We applied Pooled Mean Group Cointegration analysis for a selected group of OECD countries the years between 1989-2015 to examine determinants of high-technology exports. As a result of our findings, FDI and patent applications have a positive and significant impact on high tech exports. Contrary to the economic literature, GDP growth has not been associated with high tech export growth. As a conclusion, countries must focus on innovation such as patent applications and foreign direct investment to stimulus high tech export. Our findings are parallel with the findings of Kızılkaya et al., (2017), Srholec (2007) who assert new patent applications and FDI contribute to high tech exports.

Error correction term which measures the speed of adjustment towards the long-run equilibrium is negative and significant. It means that existence of a long run high tech and other explanatory variables relationship and that the short run is driven by the extent of the gap between short and long run values.

The empirical results show that improvement of, patent applications, and foreign direct investment play a decisive role in upgrading selected OECD countries high tech exports, while growth rate and investment play negative role in enhancing these countries high tech exports. FDI lead to knowledge and technology spillovers to local firms in the same industry or across the industries. There are many studies which conclude the positive effects of FDI on increasing host country’s high tech exports.

Based on the above conclusions, we have the following policy recommendations. First, developing countries must focus on enhancement of the “innovation strategy” through designing well-structured patent policies. Second, they must make structural reforms to attract FDI to their countries.
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ESTIMATING ENVIRONMENTAL KUZNETS CURVE: THE IMPACT OF ENVIRONMENTAL TAXES AND ENERGY CONSUMPTION IN CO2 EMISSIONS OF OECD COUNTRIES

Abstract

The objective of the paper is to estimate the relationship between CO2 emissions per capita, GDP per capita, energy consumption and environmental taxes for OECD countries in the period 1994-2014. To perform the above, we estimated a static and dynamic panel data models. The results show that the Environmental Kuznets Curve is verified for OECD countries, and environmental taxes have a negative impact on CO2 emissions (static model). On the other hand, the consumption of energy from fossil fuels has a positive impact on CO2 emissions. We conclude that while the Environmental Kuznets Curve is met, government plays an important role in improving the environment, because environmental taxes have a negative impact on CO2 emissions.

Keywords: Environmental taxes, trade, CO2 emissions, Environmental Kuznets Curve
1. INTRODUCTION

The aim of the paper is to estimate (quantitatively) the Environmental Kuznets Curve (EKC) for OECD member countries. In addition, we estimate the effect of environmental taxes on CO2 emissions of OECD countries, in order to consider the possible effectiveness of these taxes in improving the environment.

There are several papers on the EKC estimation. The main feature of the most recent studies is that they focus on countries that emit more CO2 emissions into the environment and countries where environmental standards are almost non-existent. In addition, there are studies for developed countries that already have stricter environmental standards and that generate eco-innovation, but the focus is on the countries that will generate the most CO2 emissions if no measures are implemented. Regarding quantitative estimates, most of the studies focus on econometrically estimating the EKC, which has as its dependent variable emissions (mainly CO2) and as independent variables of GDP and some other variables. If several countries (or regions of a country) are used over time, the panel data methodology is used, whereas if it is only one country a co-integration analysis is performed.

We use the panel data methodology, with fixed effects and Driscoll-Kraay estimators. Additionally, we estimate a dynamic panel. We include as an instrumental variable the lag of the dependent variable (CO2 emissions).

The results show that the EKC is met for OECD countries (with an inverted U shape), and environmental taxes have a negative impact on CO2 emissions (static model). The consumption of energy from fossil fuels has a positive impact on CO2 emissions.

The findings show that if the income of OECD countries continues to increase, CO2 emissions will tend to decline (at some point in time). However, we can conclude that the design of public policies by the government, such as environmental taxes, is indispensable. At the international level it is essential that environmental taxes are harmonised, because CO2 emissions are a global externality.

2. LITERATURE REVIEW

In this section we review several papers that quantitatively estimate the EKC with different types of methodologies, ranging from the international to the local.

To study the EKC it is necessary to point out that this curve starts from the theoretical study of Kuznets (1955). Such author analysed the relationship between economic growth and inequality, and later environmental degradation was included it instead of inequality. Grossman and Krueger (1991) were the first to point out (empirically) that the relationship between environmental

\[ EKC \text{ shows the relationship between emission of various gases and GDP per capita, and other variables.} \]
degradation and economic growth had an inverted U-shape. Later, other authors have modelled the relationship between economic growth and environmental degradation (Shafik and Bandyopadhyay (1992); Panayotou (1993)). Dasgupta, Laplante Wang and Wheeler (2002) show the different forms of EKC and the variables that determine height and slope of the inverted U-shape.

Duro, Teixidó Figueras and Padilla (2016) analysed inequities in the intensity of CO2 emissions with their explanatory factors to help policy design for countries. They used data for the whole world extracted from the International Energy Agency and used methodologies of grouping, addition and multiplication, as well as the technique of decomposition. They found that the reduction in the intensity of the emissions coincides with a clear reduction in their international dispersion; the main component of inequities is among the elements of the groups that were taken into account.

Pérez and López (2015) focused on the verification of the EKC hypothesis and the Logistics Environmental Curve (LEC) considering a sample of 175 countries comparing both methods. The empirical results showed significant evidence on the adequacy of EKC and LEC for the explanation of CO2 emissions in different countries. The authors show that for most of the countries of the sample there is a presence of N-shaped and also inverted N curves.

Poudel, Paudel and Bhattarai (2009) evaluated the relationship between CO2 and per capita income in Latin American and Caribbean countries through a fixed effects model of a panel data; finding through this analysis an N-shaped curve for the region. However, this form is sensitive if some countries are removed from the list. They rejected a square parametric regression in favour of a semi-parametric estimation.

Farhani, Meizak, Chaibi & Rault (2014) carried out an investigation to show that the EKC hypothesis is fulfilled for the countries of the Middle East and North Africa (Bahrain, Egypt, Jordan, Lebanon, Mauritania, Morocco, Tunisia, Algeria, Iran, Oman, Saudi Arabia, Syria and Tunisia). This paper is based on the hypothesis that there is an inverted U-relationship between environmental degradation and income, as well as between sustainability and human development. Using the panel data method, they established that factors such as energy, trade, value-added manufacturing and the role played by the law are related.

Apergis and Ozturk (2015) show how income and policies in 14 Asian countries (Bangladesh, Indonesia, Iran, Japan, Republic of Korea, Malaysia, China, Nepal, Oman, Pakistan, Saudi Arabia, Singapore and the Arab Emirates) are affecting the relationship between income and environmental emissions. Their objective was to test the EKC hypothesis for the 14 Asian countries through a panel data model. The multivariate model includes CO2 emissions per capita, GDP per capita, population density, land, industrial contribution to GDP and four indicators that measure the quality of institutions. In terms of the presence of an inverted U association between emissions and per capita income, results have
the expected signs and are statistically significant, contributing to the theoretical support in the presence of the hypothesis of an EKC. Environmental degradation increases with GDP per capita during the early stages of economic growth and subsequently declines after reaching a certain level of GDP per capita.

Roca and Padilla (2003) consider the total flows for Spain of the 8 atmospheric pollutants for which historical series are available. Considering also the three main greenhouse gases, which are carbon dioxide (CO2), methane (CH4) and nitrous oxide. Through the development of an explanatory model for each of the pollutants, they present an overview of the relationship between per capita income and the various atmospheric pollutants; finding that there is a positive relationship between GDP and CO2 emissions. The elasticity between the two variables is greater than one. None of the pollutants studied unequivocally show EKC. In addition, they found that the ratio of emissions to GDP is significantly influenced by two factors acting in the opposite direction: the ratio of coal to total and primary energy, which, when increased, increases emissions; on the other hand, the relative importance of nuclear energy, which affects in the opposite direction. The evolution of greenhouse gas emissions in Spain and the lack of political will to fulfil the commitments deriving from the Kyoto Protocol explain that emissions have exploded (Roca & Padilla, 2003).

Esteve and Tamarit (2012) applied co-integration techniques and found that there is a linear relationship between CO2 emissions per capita and per capita income for the Spanish economy. With annual data from the National Institute of Statistics of Spain, they found the level of per capita income from which the hypothesis of the EKC for Spain is fulfilled. They determined that the EKC is fulfilled in the long term.

For Tutulmaz (2015) the economy of Turkey fulfils the hypothesis of the EKC for CO2 emissions, so it tests the hypothesis through a co-integration method using the EKC in a conventional way and later adds to its model variables such as energy and GDP per capita and non-structural econometric variables. The author believes that the generation of environmental policies should consider this type of analysis. He finds a lot of diversity in the estimation and the tests of co-integration, as well as diversity of results that is due to the restrictions of the model, this is the reason why he concludes that the verification of the EKC must be carried out in a non-restrictive way.

Another study for Turkey was conducted by Bölük and Mert (2015) in which they examined the potential of renewable energy sources in the impact of greenhouse gas emissions. The hypothesis of this work considers that the relationship between CO2 emissions, electricity using renewable sources and GDP can be explained through the EKC hypothesis. To verify the above, they performed an autoregressive lag distribution model and applied co-integration.

Yin, Zheng, & Chen (2015) found that there is an EKC for CO2 emissions in China. Environmental regulation had a moderating effect on EKC for CO2. The technological advance benefits the reduction of emissions, having a significant displacement effect. Energy efficiency, energy structure and industry
structure have different impacts on CO2 emissions. For all the evidence, the CO2 emissions first present an increasing stage and later it decreases with the economic growth of China.

Al-Mulali, Saboori and Ozturk (2015) consider that when the income of a country increases, the public demand for better environmental quality will also increase. Therefore, government efforts will move towards improving environmental quality. In Vietnam, the government is continually working to reduce the country’s environmental pressure, therefore, the authors wanted to verify the existence of the EKC hypothesis in Vietnam during the period 1982 to 2011 through a co-integration analysis with Autoregressive Distribution Lag Model. However, the results revealed that the EKC hypothesis does not occur in Vietnam because the relationship between GDP and pollution is positive, both short-term and long-term (Al-Mulali, Saboori, & Ozturk, 2015).

Wang, Zhou, Wang and Zha (2015) conducted an empirical study to test the EKC hypothesis for environmental quality in Gansu Province, China, through a co-integration analysis and a VAR autoregressive vector model. It was found that the scale effect and the composition effect have a weak contribution in the restoration of the environment, but the technology effect and environmental regulations play important roles.

He and Wang (2011) developed a multiplicative model of EKC where economic structure, development strategy and environmental regulation are considered as determining the height and slope of the EKC. They compare a model with the shape of the traditional EKC, one with a height adjustment and another with a slope adjustment. The model is estimated with panel data from 74 Chinese cities, considering the three most important pollutants in China: Total Suspended Particles (TSP), Sulphur Dioxide (SO2) and Nitrous Oxide (NOX). From this study it was concluded that there is no single defined solution that fits all economies with structural differences, technical and institutional arrangements. This type of analysis can only be performed for some developed countries. And, finally, it is concluded that it is impossible to include all the important variables in a multiplicative model of EKC.

3. METHODOLOGY AND DATA

The panel data has a structure that contains a lot of information, due to counting observations of individual units over time. However, modelling relationships between variables with this type of database poses challenges, since it produces a variance-covariance matrix that depends on time and cross-section (Baltagi, 2005).

Using panel data reduces individual heterogeneity and co-linearity between variables because it is more reliable and with stable estimates of the parameters. However, there are certain limitations to the panel data method such as the problem of design and data collection, error measurement distortions and especially cross-section dependence, which is usually associated with macro data (Baltagi, 2005).
The general linear regression model with panel data can be presented as follows.

\[ y_{it} = \alpha_{it} + \beta_{it} X_{it} + \varepsilon_{it} \quad (1) \]

\[ i = 1, 2, \ldots, N; \]
\[ t = 1, 2, \ldots, T \]

Where the variable is the dependent variable, is a vector of independent variables (Kx1), is the random element, i refers to individuals and there are N of them, and t refers to the time series that reaches the period T. The Greek letters represent the parameters of the model: collects the particular elements of the individuals presumed to change through time and , shows the slopes of the equation, which are distinct for each i and t. Hence, two types of models emerge: the fixed effects model (FE), where are assumed to be unobservable random variables that could be correlated to the X's, and the random effects model (RE) which assumes that are random variables that are not correlated with the regressors.

On the other hand, there are dynamic models which have been developed with the purpose of incorporating into the estimation the relations of causality that are generated within the model, as a way of dealing with problems of endogeneity. Endogeneity can be treated through different ways, however, one of the most common forms is through instrumental variables expressed as lags of the endogenous variable (Labra & Torrecillas, 2014).

Dynamic panels allow us to incorporate an endogenous structure into the model, by integrating past effects through instrumental variables (Labra & Torrecillas, 2014), and incorporating a relationship between the dependent and the independent variables in a bidirectional way. If lags are used as instruments of the endogenous variable, the regressor will correspond to the value in t-n (Levels) of the endogenous variable or the difference of these values (Differences). Therefore, the larger the period of (t), the greater number of instruments we will have. One of the alternatives is the estimator of Arellano and Bond (1991) known as Difference GMM, since it uses as instruments the differences of lags.

The GMM System formulas are as follows:

\[ Y_{(it)} = \alpha Y_{(i,t-1)} + \beta X_{it} + \varepsilon_{t-1} \quad (2) \]

\[ \varepsilon_{it} = \mu_{i} + \hat{\theta}_{it} \]
\[ E(U_{i}) = E(\hat{\theta}_{it}) = E(\mu_{i}\theta_{it}) = 0 \]

Where:

\[ Y_{(it)} = \text{is the dependent variable of individual } i \text{ at time } t \]
\[ X_{it} = \text{is the independent variable of individual } i \text{ at time } t \]

Where the error term has two orthogonal components:
For this study the panel data model is used because it has several advantages for a sample within the period from 1994 to 2014.

In order to examine the relationship between CO2 emissions and economic growth, model (3) includes, in addition to GDP per capita, other variables such as fossil fuel energy consumption and environmental taxes. The panel model is presented as follows:

\[
CO2 = f(GDP, GDP_2, FOSSIL, TAXRE) \quad (3)
\]

Where CO2 is the total emissions of carbon dioxide measured in metric tons per capita; GDP denotes GDP per capita, GDP2 per capita GDP squared, FOSSIL to the fossil fuel energy consumption (as a percentage of the total energy consumption) and TAXRE to income from environmental (energy) taxes (millions USD dollars).

Some variables were excluded even though they are considered of great importance in the explanation of the ecological impact, due to the scarce information on them it was decided they should be omitted, such as the index of eco-innovation, or the index of Rule of Law (World Justice Project, 2008).

The idea of using these variables as explanatory factors emerged from the analysis of previous studies, such as that of Egli and Steger (2007), whose specific model is used to understand when the maximum level of pollution occurs, derived from other factors that not only consider the income per capita, but also take into account the preference for a cleaner environment, increasing returns to scale by the use of new technologies and the magnitude of other external factors. This approach is based on a dynamic model that not only indicates an inverted U-relationship between pollution and income per capita, but is also compatible with economic growth and the sustained improvement of the environment over time.

The database was developed from a variety of sources and comes mainly from the World Bank (WB), the International Energy Agency (IEA) and the OECD. In this sense a set of ecological, environmental and economic variables are available. The following is a description of the variables used in this model: annual series of Gross Domestic Product (GDP) per capita, fossil fuel energy consumption (as a percentage of the total), and income through environmental (energy) taxes (millions of USD dollars), which together attempt to explain the behaviour of carbon dioxide (CO2) emissions from OECD member countries.

CO2 emissions: CO2 emissions represent the burning of fossil fuels and emissions from land use, such as deforestation (World Bank, 2015). They are measured in metric tons per capita.

GDP Per Capita: GDP is the sum of the gross value added of all resident producers in the economy. These data are measured in constant dollars (World Bank, 2015).

\[\mu_i = \text{fixed effects} \]
\[\vartheta_{it} = \text{idiosyncratic shocks} \]

\[2\text{ We include only environmental taxes applied to energy (air pollution).} \]
Fossil Fuels Energy Consumption: Fossil fuel includes coal, oil, petroleum and natural gas products (OCDE (2015)). The data represents % total energy consumption.

Environmental Tax Revenue: The OECD, the IEA and the European Commission have agreed to define environmental taxes as “any (non-counterparty) payment obligatory to the Public Administrations applied on tax bases that are considered of special environmental relevance”. (OECD: 2016, 2014). According to OCDE, environmental taxes are classified in: energy, motor vehicles and transport and other. We use only energy environmental taxes. We include 1 variable: Environmental tax revenue in millions of USD dollar.

4. RESULTS AND DISCUSSION

Following the original EKC theory, we used data on GDP and GDP squared, as well as other additional variables, to explain CO2 emissions in OECD countries through a panel data for the period 1994 to 2014. A fixed-effects model was run using the Driscoll-Kraay estimator in which the following results were obtained:

|          | FE     | P<|t| |
|----------|--------|-----|
| CO2      | 0.00010| 0.001|
| GDP      | -6.71e-10| 0.083|
| GDP2     | 0.11898| 0.000|
| FOSSIL   | -0.00001| 0.001|
| TAXRE    | -6.59266| 0.000|
| CONS     | within R-squared = 0.5023 |

Source: own elaboration

Using Driscoll-Kraay estimators, most of the variables are all significant for explaining CO2 emissions. The negative sign of GDP per capita squared indicates that it is an inverted U-shaped curve and a maximum point can be found from which, as the EKC theory points out, increases in GDP per capita will no longer represent increases in levels of CO2 emissions, but, on the contrary, the increase in per capita income will tend to reduce CO2 emissions from a certain level of income.

In the estimated model, the relationship between CO2 emissions and the independent variables indicate that EKC is very likely to occur.

A dynamic model was estimated. For this case, the lag of the dependent variable was used as the instrumental variable, resulting in the following model.
Table 2.

Results of the estimation of the dynamic panel data model with instrumental variables

| Model | CO2       | Coef. | P<|z| |
|-------|-----------|-------|-----|
| L(GDP) | 0.20129   | 0.000 |
| GDP    | 0.00007   | 0.000 |
| GDP2   | -3.16e-10 | 0.066 |
| FOSSIL | 0.12735   | 0.000 |
| TAXRE  | 9.25e-06  | 0.123 |
| CONS   | -10.85357 | 0.000 |

Wald chi 2(S) = 2096.71
Prob. > chi2 = 0.00000

Source: own elaboration

Then, we applied the Sargan test of over-identifying restrictions, but the null hypothesis was rejected, so we run the following robust model.

Table 3.

Results of the estimation of the dynamic panel data model with instrumental variables (robust model)

<table>
<thead>
<tr>
<th>Robust model</th>
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<tbody>
<tr>
<td>Model</td>
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<tr>
<td>--------------</td>
</tr>
<tr>
<td>L(GDP)</td>
</tr>
<tr>
<td>GDP</td>
</tr>
<tr>
<td>GDP2</td>
</tr>
<tr>
<td>FOSSIL</td>
</tr>
<tr>
<td>TAXRE</td>
</tr>
<tr>
<td>CONS</td>
</tr>
</tbody>
</table>

Wald chi2(S) = 101.88
Prob. > chi2 = 0.0000

Source: own elaboration

We applied the Arellano-Bond test for zero autocorrelation in first-differenced errors. The null hypothesis was no rejected; therefore the model has not autocorrelation.

Again, the results obtained with this autoregressive model of panel data show the fulfilment of the theory that supports the EKC between CO2 and income. That is, carbon dioxide emissions are favoured by the growth of economies although they reach a critical point and begin to decrease, as the theory points out. By increasing the consumption energy from fossil fuels increases, CO2 emissions tend to increase.

The dynamic model shows that environmental taxes have not impact in CO2 emissions, nevertheless in the static models there is negative and significant relation.
The results show that there is an EKC in the OECD countries, i.e. an inverted U-shaped relationship between GDP per capita and per capita CO2 emissions. However, in the static model environmental taxes negatively affect CO2 emissions, while in the dynamic model there is no relationship between these variables.

The financial crisis of 2008 brought with it a drop in production in almost all OECD countries, which caused CO2 emissions to decline. This situation was not taken into account in the modelling of the EKC, so the results would be affected if this event were included in the models, because the sample goes from 1994 to 2014, so results may vary.

The results are similar to those of Pérez and López (2015) and Poudel, Paudel and Bhattacharai (2009), in the sense that the EKC is met, however for these authors the EKC form in N and inverted N (with other group of countries). However, the results of Farhani, Meizak, Chaibi & Rault (2014) and Apergis and Ozturk (2015), are more similar to those of us, since these authors find that the EKC is met with an inverted U-shape, but for countries of North Africa and the Midwest in the first case and Asian in the second case. Our results go in the opposite direction to those found by Al-Mulali, Saboori and Ozturk (2015), who point out that the EKC for Turkey is not met.

Finally, there are studies (Saucedo, Rullan, Hernandez (2016)) that show that eco-innovation can generate economic growth, as well as the environmental improvement already known, which would help countries have EKC with less height and slope.

5. CONCLUSIONS

We quantitatively estimate the EKC for the OECD countries and find that this curve has the form of an inverted U, which is in accordance with what the theory proposes. In this way, the OECD countries would have a tendency to reduce CO2 emissions as their income reaches a certain level. However, not all countries are close to that maximum level of emissions yet, there will be some that have already passed that level and others that are far from reaching the maximum level.

One of the findings is that in order to reach that maximum level of contamination, and from there start to lower it, government intervention is necessary. Environmental taxes have a negative impact on CO2 emissions, so the role of governments in OECD countries is key to reducing CO2 emissions. The consumption of energy from fossil fuels has, as expected, a positive impact on CO2 emissions, so that alternative sources of energy should be considered.

Based on what we found, public policies could be designed to establish environmental taxes that would reduce the negative impact of economic activity on the environment. At the OECD level, there could be some harmonisation of environmental taxes among its member states.
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ECONOMIC DEVELOPMENT AND INCIDENCE OF FATAL OCCUPATIONAL ACCIDENTS: EVIDENCE FROM THE SELECTED OECD COUNTRIES

Original scientific paper
UDK: 331.46:330.34
JEL classification: I15, C22, J28, O15

Abstract

Occupational accidents cause significant social and economic problems by the fatal and non-fatal injuries, and are parts of the individual and social costs of production. In this context, we explore the relationship between fatal occupational accidents and economic development for a selected 21 The Organization for Economic Co-operation and Development (OECD) countries over the period of 1995-2013 by performing panel cointegration techniques. The results indicate that cointegration relationship exists among the variables in consideration and by employing pooled mean group estimator method and the results reveal that as an indication of economic development GDP per capita is positively related with fatal occupational accidents in the short-run, however, in the long-run the relationship turns into be negative.

Keywords: Economic Development, Fatal Occupational Accidents, Panel Cointegration Tests
1. INTRODUCTION

Occupational accidents cause significant social and economic problems by the fatal and non-fatal injuries, and are part of the individual and social costs of production. The number of occupational accidents and work-related diseases calculated by the International Labor Organization (ILO) creates worldwide awareness, with 2.3 million fatalities annually, of which over 350,000 are caused by occupational accidents and close to 2 million by work-related diseases. It is also estimated that about 4 percent of the world’s gross domestic product (GDP), or circa US $2.8 trillion, is lost annually in direct and indirect costs owing to occupational accidents and work-related diseases (ILO, 2014:3). The high frequency and severity of these events represent a serious problem to society and require cause for concern to improve working conditions of workers.

Recently prevention of fatal and non-fatal occupational accidents is a high priority on the occupational health agenda in all over the world. The rapid pace of technological change, combined with the persistence of unsafe threatening working conditions, has served to focus attention on the need to create a safe and healthy working environment (ILO, 2016). However, some evidences indicate that the total number of fatalities have decreased since the late 1960s in developed countries. Benavides et al., (2005:498) claim that fatal occupational injuries clearly declined between the period of 1975-2000 in five selected European Union countries. For instance, in United Kingdom, fatal injuries fell by 82 percent (from 2.9 per 100 000 employees to 0.5) between 1974 and 2011. In Spain, the incidence of fatal occupational injuries declined from a rate of 9.8 per 100 000 workers in 1992 to 6.1 in 2002, and in Austria, rates decreased from 8.5 percent in 1955 to 4.08 percent in 2004. Moreover, a Turkish study shows that between the period 2000-2005 occupational fatality rate dropped from 23.4 per 100 000 employees to 15.5 (Unsar and Sut, 2009:618).

1.1. Debates on Economic Development and Incidence of Fatal Occupational Accidents

The declining pattern in rates of occupational fatalities especially in the developed countries could be reason of the change from an industrial society to a service society. Based on the experience in the early years of industrialization of the developed countries occupational accidents seemed to increase at first but with economic growth and investment in training and development and also improved awareness of precaution which lead to decrease work related accidents (Saloniemi and Oksanan 1998).

According to the several studies economic development seems to have an impact on the incidence of occupational accidents. The early studies on relationship between the business cycle and occupational accidents support that the nature of occupational accidents is related to the business cycles; the number of accident tends to increase during economic upswings and decrease during economic downturns (Robinson 1988; Nichols 1991). After the 1970s,
this so-called pro-cyclical relationship has changed with the transition from the industrial sector to services sector, especially declining the share of employed people in manufacturing and construction industries (Saloniemi and Oksanan 1998). In recent years’ studies conducted in developed countries shows that there is an inverse relationship between economic development and the incidence of work-related accidents. However, for the United States, Asfaw et al., (2011:7) found the net impact of the GDP as a business cycle indicator on workplace injuries was positive and unemployment rate was negative over the three decades. Furthermore, they indicate that this relationship varies by industry sector and the relative influence of labor and physical capital utilization in these sectors. The finding of this study reveals that the firms in the construction, manufacturing, and mining industries should take additional precautionary safety measures during economic upturns.

On the other hand, Barth et al., (2007) examined the nexus between GDP and the occupational accidents rate between 1955 and 2004 in Austria. They observed that a growing economy was associated with declining fatal and non-fatal injury rates. This could be the reason of rising GDP is accompanied by increase in occupational health and safety measures due to the scientific and technological developments that create new opportunities for the prevention of these hazards and preventive security reduce work-related accidents. On the other hand, during downturn periods because of decrease in investments and the fear of job losses and increased unemployment rate cause increased frequency of accidents.

Bear in mind that international comparison of the frequency of occupational accidents are difficult due to figures reported by each country are influenced by factors other than differences in the occurrence of actual accidents (Nishikitani and Yano, 2008:1078). But prevention of occupational accidents requires the availability of consistent, comparable information on the intensity and incidence of occupational accidents occurring within countries (OECD).

2. DATA SET and METHODOLOGY

2.1. Data

Although the international comparison of the frequency of occupational accidents which are related to human, occupational and economic factors is a very important issue there has been little research on it. However, in this terrain most of the studies have been mainly focused on the nexus between economic development and occupational accidents on micro level (industry level, etc.) to our knowledge, there have been no studies attempting to investigate the impact of macro level factors over a long time period at international level. The present study aims to analyze the long-term links between GDP, working hours and fatal occupational accidents in selected 21 OECD countries. As is known occupational injury statistics cover the workers whom are insured by any social insurance institution and therefore most of the fatal or nonfatal occupational
injuries are above the official estimates. Therefore, in this study considering the fact that nonfatal occupational accidents are less reported than fatal occupational accidents and data accessibility concerning fatal occupational accidents channelize us to examine the nexus between fatal occupational accidents and economic development for 21 OECD countries over the period of 1995-2013. Our choice of these twenty-one countries is purely due to the availability of consistent and without interruption time series data for only these countries.

In this study as our main variable of interest data regarding harmonized fatal occupational accidents statistics are compiled from the ILOSTAT database of ILO on annual basis in absolute values. As an indication for the scale of economy GDP per capita (with constant US $ 2005) is used and, the data concerning this variable is collected on annual basis from the World Development Indicator database of World Bank. Finally, the effect of working hour of employees whom are engaged in regular jobs on fatal occupational accidents is examined by which using the data of average working hours in annual context is obtained by Penn World Table version 8.0 by Feenstra, Inklaar and Timmer (2013) and OECD Stat database of OECD. All the variables in empirical analysis are expressed in natural logarithmic form.

Given the descriptions and data sources of variables above, descriptive statistics regarding these variables are displayed in Table 1. Maximum values of GDP, fatal occupational accidents (FAT) and average working hours (AVH) belong to Norway (in 2007), the USA (in 1995) and Mexico (in 2013) while minimum values of both GDP and fatal occupational accidents are observed for Estonia (in 1995 and 2012) and average working hours are observed for Germany (in 2013) respectively.

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<thead>
<tr>
<th>Variables</th>
<th># of obs.</th>
<th>Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAT\textsubscript{i,t}</td>
<td>399</td>
<td>627.25</td>
<td>14</td>
<td>6,275</td>
<td>1,188.25</td>
</tr>
<tr>
<td>AVH\textsubscript{i,t}</td>
<td>399</td>
<td>1,764.78</td>
<td>1,363</td>
<td>2,237</td>
<td>187.99</td>
</tr>
<tr>
<td>GDP\textsubscript{i,t}</td>
<td>399</td>
<td>28,431.17</td>
<td>5,150.232</td>
<td>69,094.74</td>
<td>16,563.77</td>
</tr>
</tbody>
</table>

Source: author’s calculations.

2.2. Model and Methodology

The nexus between fatal occupational accidents and economic development would be examined by panel cointegration techniques proposed by Pedroni (1999, 2004) and Kao (1999). In this context following equation is the main model that depicts the nexus between fatal occupational accidents and economic development:
where $\alpha_i$ represents country specific fixed effects while $\delta_i$ represents the dynamic effects. Dependent variable is the fatal occupational accidents expressed in terms of natural logarithmic form while $LGDP_{i,t}$ and $LAVH_{i,t}$ represents GDP per capita (US $, 2005$) and average working hour respectively which are expressed in natural logarithmic form as well.

Stationary check of the series is examined by performing unit root tests proposed by Maddala and Wu (1999) and Pesaran (2007) respectively. In Maddala and Wu (1999) type test, probability values of augmented Dickey-Fuller test statistics which is applied to each cross-sectional unit are used. In this context cumulative and deterministic trend models are estimated and the null of panels contain unit root ($\delta_i = 0$) tested over the alternative that panels do not contain unit root ($\delta_i < 0$). On the other hand, Pesaran (2007) proposes a simple alternative test over its counterparts such as Phillips and Sul (2003), Moon and Perron (2004), and Bai and Ng (2004). In this setting, standard DF (or ADF) regressions are augmented with the cross-section averages of lagged levels and first differences of the individual series. This is called “cross-sectionally augmented Dickey-Fuller (CADF)” and by estimating the CADF regression, averages of the t-statistics of lagged variables are taken to obtain cross-sectionally augmented IPS (CIPS) statistics.

By checking the stationarity of the series in the next step long-run relationship would be investigated by the panel cointegration methods proposed by Pedroni (1999, 2004) and Kao (1999) respectively. Pedroni (1999, 2004) offers tests that are based on the null of no cointegration among panel data series which allows for considerable heterogeneity. In this context, he develops seven test statistics, four of which are within group, while three of which are between groups to examine the long-run relationship among the series. The main difference between these two statistics arises from autoregressive coefficient ($\rho_i$) for which common value is estimated at within group statistics while no common value is estimated at between group statistics. For the first group statistics Pedroni (1999, 2004) proposes the following test statistics: variance ratio statistics, Phillips-Perron type $\rho$-statistics, Phillips-Perron type t-statistics, ADF type t-statistics. Based on group mean approach, for the second group statistics he proposes the following test statistics: Phillips-Perron type $\rho$-statistics, Phillips-Perron type t-statistics, and ADF type t-statistics. For both groups the null of no cointegration among series ($\rho_i = 1$) is tested over its alternative ($\rho_i < 1$). Based on Dickey-Fuller and augmented Dickey-Fuller tests, Kao developed a panel cointegration method to test the null of no cointegration among series ($H_0 : \rho = 1$) over the alternative of existence of cointegration among series ($H_0 : \rho < 1$).

Finally, by deciding that the series are cointegrated, both short-run and long-run relationship would be investigated by implementing pooled mean
group estimator (PMGE) proposed by Pesaran, Shin and Smith (1999) which consists of mean group estimator which allows for either slope or drift parameter to vary by units and fixed effects estimator which allows for intercept to vary but slope parameter is fixed. Hence, PMGE holds long-run parameters to be fixed while allowing for short-run parameters and error variance to vary by panels.

3. EMPIRICAL RESULTS

Before proceeding to the results of main analysis, cross-sectional dependence and the stationary of the series examined respectively. In the first step, proposed by Pesaran (2007) cross-sectional dependence test is performed and the results are displayed in Table 2.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Symbol</th>
<th>CD-Test (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal Occupational Accidents, thousands (in natural logarithm)</td>
<td>$LFAT_{i,t}$</td>
<td>27.71 (0.0000)*</td>
</tr>
<tr>
<td>Average Working Hours (in natural logarithm)</td>
<td>$LAVH_{i,t}$</td>
<td>31.11 (0.0000)*</td>
</tr>
<tr>
<td>GDP, constant prices, 2005, US$ (in natural logarithm)</td>
<td>$LGDP_{i,t}$</td>
<td>57.23 (0.0000)*</td>
</tr>
</tbody>
</table>

Note: * indicates the significance level at 1 % respectively.

Source: author’s estimations.

The results indicate that each series exhibit strong cross-sectional dependence by which rejecting the null of no cross-sectional dependence at 1 % significance level. These results also disclose that by examining the stationarity of the series, one should consider the cross-sectional dependence and perform the unit root test which also considers this fact. Accordingly, two types of unit root tests are used in checking the stationarity of the series; one of them is proposed by Maddala and Wu (1999) which does not consider the cross-sectional dependence and while the other is proposed by Pesaran (2007) which considers the cross-sectional dependence. Estimation results of both types of unit root tests are presented in Table 3. Since the corresponding test statistics are significant, results do indicate that all series become stationary by which first differencing in Maddala and Wu (1999) type test by rejecting the null hypothesis of non-stationarity either including trend or without trend assumptions. Furthermore, by considering the cross-sectional dependence, Pesaran’s (2007) test is performed and the results disclose that all series are not stationary in level since the calculated test statistics are insignificant. Nonetheless, by first differencing, all series become stationary by including trend or even without trend rejecting the null hypothesis of non-stationarity.
### Table 3

#### Unit Root Tests

<table>
<thead>
<tr>
<th>Variables</th>
<th>Maddala-Wu Unit Root Test</th>
<th>Pesaran’s Unit Root Test</th>
<th>1st Difference</th>
<th>1st Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( \chi^2 )-stat. (Prob.)</td>
<td>( \chi^2 )-stat. (Prob.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without Trend</td>
<td>With Trend</td>
<td>Without Trend</td>
<td>With Trend</td>
<td>With Trend</td>
</tr>
<tr>
<td>( LFAT_{i,t} )</td>
<td>40.82 (0.52)</td>
<td>63.682 (0.07)**</td>
<td>278.04 (0.00)*</td>
<td>225.96 (0.00)*</td>
</tr>
<tr>
<td>( LAVH_{i,t} )</td>
<td>31.20 (0.88)</td>
<td>67.791 (0.07)*</td>
<td>202.44 (0.00)*</td>
<td>173.33 (0.00)*</td>
</tr>
<tr>
<td>( LGDP_{i,t} )</td>
<td>60.07 (0.03)**</td>
<td>31.161 (0.89)</td>
<td>97.48 (0.00)*</td>
<td>120.25 (0.00)*</td>
</tr>
<tr>
<td>Without Trend</td>
<td>With Trend</td>
<td>Without Trend</td>
<td>With Trend</td>
<td>With Trend</td>
</tr>
<tr>
<td>( LFAT_{i,t} )</td>
<td>-1.19 (0.11)</td>
<td>1.12 (0.87)</td>
<td>-5.71 (0.00)*</td>
<td>-4.02 (0.00)*</td>
</tr>
<tr>
<td>( LAVH_{i,t} )</td>
<td>-0.12 (0.45)</td>
<td>1.86 (0.96)</td>
<td>-3.98 (0.00)*</td>
<td>-3.53 (0.00)*</td>
</tr>
<tr>
<td>( LGDP_{i,t} )</td>
<td>-0.19 (0.42)</td>
<td>1.07 (0.85)</td>
<td>-1.40 (0.07)**</td>
<td>-2.01 (0.02)**</td>
</tr>
</tbody>
</table>

Note: ***, **, * indicates the significance level at 10%, 5% and 1% respectively. Optimal lag length is selected to be 1 for both types of tests.

Source: author’s estimations.

Having decided that the series are I (1), in the next step we investigate whether series are cointegrated or not. In this context, panel cointegration tests proposed by Pedroni (1999, 2004) and Kao (1999) are performed and results are shown in Table 4 and Table 5 respectively. According to Pedroni’s (1999, 2004) cointegration tests results, four of seven tests reveal the existence of cointegration by rejecting the null hypothesis of no cointegration since the corresponding test statistics are significant at various significance levels under the assumptions of with and without deterministic trend. On the other hand, same implication is driven by performing Kao’s (1999) panel cointegration test, since the t-statistics is significant at 5% significance level which in turn causes to reject the null hypothesis of no cointegration.
Table 4

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Without Trend</th>
<th>With Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel ν-statistic (p-value)</td>
<td>-0.9002 (0.816)</td>
<td>-0.1157 (0.546)</td>
</tr>
<tr>
<td>Panel ρ-statistic (p-value)</td>
<td>0.3611 (0.641)</td>
<td>-0.4757 (0.317)</td>
</tr>
<tr>
<td>Panel PP-statistic (p-value)</td>
<td>-1.9183 (0.027)**</td>
<td>-8.2595 (0.000)*</td>
</tr>
<tr>
<td>Panel ADF-statistic (p-value)</td>
<td>-2.2096 (0.013)**</td>
<td>-8.6459 (0.000)*</td>
</tr>
<tr>
<td>Group ρ-statistic (p-value)</td>
<td>2.6859 (0.996)</td>
<td>1.3457 (0.910)</td>
</tr>
<tr>
<td>Group PP-statistic (p-value)</td>
<td>-1.7905 (0.036)**</td>
<td>-10.7385 (0.000)*</td>
</tr>
<tr>
<td>Group ADF-statistic (p-value)</td>
<td>-1.8458 (0.032)**</td>
<td>-8.1463 (0.000)*</td>
</tr>
</tbody>
</table>

Note: **,* indicates the significance level at 5 % and 1 % respectively. The panel statistics are the within-dimension statistics while group statistics are between-dimension. These are one-sided standard normal test with critical values of 1%, 5% and 10% given by -2.326, -1.645 and -1.282. The critical values for the mean and variance of each statistic are obtained from Pedroni (1999). Lag length is chosen by Akaike Information Criterion.

Source: author’s estimations.

Table 5

<table>
<thead>
<tr>
<th>ADF</th>
<th>t-statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-2.1588</td>
<td>0.0154**</td>
</tr>
</tbody>
</table>

Note: ** indicates the significance level at 5 %. Lag length is selected by Akaike Information Criterion.

Source: author’s estimations.

Since the series are cointegrated, in the following step, both long-run and short-run relationships among the variables are examined by performing PMGE and corresponding results are exhibited in Table 6. According to Table 8, either dependent or independent variables enter into the error correction form through pooled mean group estimation (PMGE) method by their corresponding differentiated forms revealed by unit root tests. In this context, $DLFAT_{i,t}$ denotes the first difference of fatal occupational accidents while $DLGDP_{i,t}$ and $DLAVH_{i,t}$ denotes the first differences of GDP per capita and average working hour respectively. Based on error correction form, estimation by PMGE yields the presence of positive relationship between GDP and fatal occupational accidents in the short-run while in the long-run it turns into negative. Results of PMGE reveal that 1 % increase in GDP decreases fatal occupational accidents by 0.87 % while in the short-run a 1 % increase in GDP increases fatal occupational accidents almost by 1.29. However, a 1 % increase in average working hours causes fatal occupational accidents to rise by 0.98 % in the long-run; in the short-run it has no significant impact. The speed of adjustment to the long-run captured by the error correction term which is negative and significant through the expectations indicating that shocks to the fatal occupational accidents adjusted in one year by 47 %.
Table 6

Pooled Mean Group Estimation Results

<table>
<thead>
<tr>
<th>Long-Run Relationship</th>
<th>Coefficient (Standard Error)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable: $\text{LFAT}_{it}$</td>
<td></td>
</tr>
<tr>
<td>Variables</td>
<td>Coefficient (Standard Error)</td>
</tr>
<tr>
<td>$\text{LGDP}_{it}$</td>
<td>-0.8716 (0.108)*</td>
</tr>
<tr>
<td>$\text{LAVH}_{it}$</td>
<td>0.9875 (0.515)**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Error Correction Form</th>
<th>Coefficient (Standard Error)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable: $\text{DLFAT}_{it}$</td>
<td></td>
</tr>
<tr>
<td>Variables</td>
<td>Coefficient (Standard Error)</td>
</tr>
<tr>
<td>$C$</td>
<td>2.9105 (0.401)*</td>
</tr>
<tr>
<td>$\text{EC}_{it}$</td>
<td>-0.4729 (0.062)*</td>
</tr>
<tr>
<td>$\text{DLGDP}_{it}$</td>
<td>1.2876 (0.539)**</td>
</tr>
<tr>
<td>$\text{DLAVH}_{it}$</td>
<td>0.9106 (1.142)</td>
</tr>
</tbody>
</table>

Note: ** indicates the significance level at 5%. Lag length is selected by Akaike Information Criterion.

Source: author’s estimations.

4. CONCLUSIONS

In this study, the correlations between economic development and fatal occupational accidents were tested on the basis of selected OECD countries for the period of 1995 to 2013. Our results indicate that GDP as general macroeconomic indicators has a positive impact on fatal occupational accidents as fatality rates increase during economic booms and decrease during recessions. This is consistent with the findings by Asfaw, Pana-Cryan and Roger (2011) that in the United States workplace injuries were positively related to the business cycle from 1976 to 2007. Moreover, Song, Xueqiu and Chengwu (2011) in a study for China found that economic scale was associated with decline of occupational death rate, and economic cycle was an indicator of work safety during 1979-2008.

On the other hand, our long term analysis shows that there is a negative interdependence between fatal occupational accidents and GDP between 1995 and 2012 as is observed in developed countries (Nichols 1991; Barth et al, 2007; Hamalainen, 2009). It seems that over a long time period, economic booming with high level of GDP, as a measure of welfare, increasing investment in new technologies and improving working conditions would make occupational accidents decrease, and economic depression would make occupational accidents increase. In addition, it is found that average working hours have positive effect on fatal occupational accidents in the long term period. This finding is consistent with other studies that long working hours adversely affect the health and wellbeing of workers (Van der Hulst, 2001; Dembe et al, 2005).
Furthermore, Benavides et al., (2005) studied occupational injury rates in five selected European Union countries, in order to identify patterns in rate trends and found that fatal occupational injury crude rates have clearly declined. These results are accordant with those from the EUROSTAT (2003), confirming that there is a common downward trend in fatal occupational injury rates in developed countries (Benavides et al., 2005).

This present study has at least two policy implications. First, the results suggest that special attention needs to be paid to establish protective measures for people working overtime. Second, an inverse long-term parallelism between the economic development and the trend of fatal occupational accidents point out that the government should give importance to awareness about occupational health and safety and increasing working conditions of workers specifically during economic downturns. In future research, fatal and non-fatal occupational accidents could be examined in specific industries, sectors or economic activities to find out their sensitivity to the economic development and physical capital and labor utilization within industries over the long term.

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