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A word from the Editor in Chief

This journal is now entering the fifth year since its founding. It has progressed significantly both in the number of papers and their quality. From the very beginning, the editorial policy has been focused on including the journal in the Thomson Reuters Web of Science list. That goal proved to be highly realistic and achievable, which was recently confirmed when the International Review was included in the Emerging Sources Citation Index (ESCI) http://ip-science.thomsonreuters.com/cgi-bin/jrlst/jlresults.cgi?PC=EX&Full=International%20review. Given the fact that this is the only journal of business economics in Serbia that has gained its place on the prestigious list of international scientific journals, our responsibility as a redaction has significantly grown in regards to further enhancement of its performances and in the aim of gaining the biggest possible impact factor. We share this responsibility with our authors on whose papers depend the citation of our journal and its ranking. Therefore, we are kindly asking the authors of papers to comply with the wanted requests when it comes to writing papers and arranging them in the appropriate technical manner, as well as when citing papers from the IR journal. Authors should feel free to ask our redaction secretary for any further information via e-mail.

This issue includes 15 papers written by authors from five different countries. The papers are divided into six different areas. In our next issue we are going to focus more on one or two areas so as to narrow the focus of each issue, which also happens to be a request set by SCOPUS and other bases. We shall also deal with thematic issues and all authors will be duly noted about that.

Even though our journal has achieved plenty success on its developmental path, we don’t have much time for celebration. Instead, we continue to work hard and at a fast pace so as to reach the highest goals. We shall go into battle with great working enthusiasm and patience, because this road is never an easy road.

11 May 2016
Akad. Prof. Dr. Mirjana Radovic Markovic
Editor in Chief
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THE ROLE OF ORGANIZATIONAL VIRTUOUSNESS IN ORGANIZATIONAL CITIZENSHIP BEHAVIOR OF TEACHERS: THE TEST OF DIRECT AND INDIRECT EFFECT THROUGH JOB SATISFACTION MEDIATING

Sara Abedi Kooshki¹, Hassanreza Zeinabadi²

Abstract

The aim of this study was to test the direct and indirect effect of organizational virtuousness in organizational citizenship behaviors of teachers and propose a model with a causal connection. The population consisted of all secondary school teachers of Karaj metropolitan areas where by cluster method sampling and Morgan table 403 people selected. The aim of this study is functional and in terms of methodology is survey. Standard questionnaires used to collect data and all of them had good reliability and validity. To analyze the data confirmatory factor analysis and structural equation modeling techniques used. The results showed that schools organizational virtuousness directly affect Less and non-significant on organizational citizenship behavior of teachers. The assumed test pattern suggests that organizational virtuousness with the mediation of job satisfaction can affect the behavior of teachers' organizational citizenship behavior. The findings of this study emphasis the importance of reinforcement of schools as well as teachers' job satisfaction and organizational virtuousness.

KEYWORDS: organizational virtuousness, organizational citizenship behavior, job satisfaction, teacher

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UDC: 371.12:331.101.32

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Introduction

The concept of virtue refers to the competences of the moral innate (Hessel, 2013), which through human activity contributes to improving social morality. Virtue discussed mainly in philosophy, but now, in terms of theory and application, it is used in organizational researches. While early studies focused on virtue in behavior management, recent researches discuss the role of organizational virtuousness (VA) performance in other areas, such as creativity, turnover, quality, and profitability (Barclay, Markel, 2012). Organizational virtuousness with greater participation and strong relationship between people and the valuable division of resources and information is due to the increased social investment (Cameron, Dutton, Quinn, 2003). Of the positive performances of organizational virtuousness is the organization's ability to deal with the major problems faced and development of organizational virtuousness reduces the negative effects of these problems. Positive emotions and social investment created and spread by organizational virtuousness and leads to increment of individuals and organizations performance (Barkley, Markel, 2012). In addition to organizational virtuousness variable, undoubtedly the effective functioning of organizations in all circumstances is related to their work, but the effort is not only in defined boundaries (job description) and goes beyond (Garg, Rastogi, 2006). Incredible effort of staff is so important that the volume of its research, mainly on "organizational citizenship behavior (OCB)" is constantly on the rise. OCB variable has created a new wave of knowledge of the behavior of the corporate sector benefits and its importance is evident in organizational effectiveness (Oregon, 1988; Podsakoff et al., 2000).

The role of schools organizational virtuousness (VA) in teachers' organizational citizenship behavior (OCB)

Virtue is known as an integral element of good citizenship in communities, with the idea that it can create the field for interactions prosperity and social stability. So that it is essential to ensure the survival of the community (Cameron et al., 2004). Cameron is one of the first scholars who worked on conceptualization of organizational virtuousness. He and his colleagues believed that organizational virtuousness consisted of community activities, cultural traits or processes that enable organizational characteristics to spread and maintain virtue (Cameron et al., 2004). Accordingly, Cameron and his colleagues proposed a five-factor model of organizational virtuousness, including optimism, forgiveness, trust, compassion and integrity.

Effective schools have teachers who do their best voluntarily, non-remunerated, in addition to their role expectations and formal requirements, to assist administrators, other teachers and students and in general, school (DiPaol, Hoy, 2005). In the literature of management and organizational behavior at school these efforts benefits, are remembered as organizational citizenship behaviors.

Several studies have shown that the virtue has a critical role in creating love and empathy (Rego et al., 2011), moral strength, determination, difficulties tolerance (Seligman, 1999; Baumeiser, Exline, 2000), health, happiness, resilience in the face of adversity (Ryff, Singer, 2008; Myers, 2000). In short, ethics based on virtue is always looking for stimulation values, ideals and finding best responds to the question of what kind of organization we need to be (Chun, 2005). It is also expected that individuals who perceive their organizations as virtuous develop relational psychological contracts with the organization, thus reacting with behaviors that go beyond their in-role duties (Coyle, 2002). Feeling gratitude for working in a virtuous organization (Emmons, 2003), the individuals feel compelled to reciprocate with acts that benefit the organization and other people (Eisenberger et al., 2001).
The mediating role of teachers’ job satisfaction

One of the significant variables that has shown to have a high correlation with teachers' OCB is, "job satisfaction" (Garg, Rastogi, 2006; Oplatka, 2006; Bragger et al., 2005; Ngunia et al., 2006). Teachers who have high job satisfaction and organizational commitment will show more enthusiasm in organizational citizenship behavior. The evidence shows that the virtue of forgiveness is less associated with richer social relationships, higher job satisfaction, sense of power, lack of physical diagnosis, faster recovery, stress and anxiety associated disease (McCullough, 2000). Caprara et al., (2006) showed that the atmosphere of the school and many environmental variables affect job satisfaction. Evidence referred to, strengthens the assumption that organizational virtuousness, is a major determinant of job satisfaction among teachers. But according to the findings of many studies (such as Somech, Drach-Zahavy, 2000; LePine et al., 2002; Bajpai, Holani, 2011 and Zeinabadi, 2010) that admit the immediate effect of job satisfaction on organizational citizenship behavior, another assumption is strengthened. Accordingly, job satisfaction and organizational virtuousness is assumed as mediators effect on organizational citizenship behavior.

Problem Statement

There are few who do not believe schools and teachers not involved in the success or failure of students. Freiburg and Stein (1999) believe that school atmosphere is its heart and spirit that makes teachers and students love school and want to be part of it. Without a doubt the unique role of teacher in the education fate of students cannot be denied. But it is no secret, that not all teachers are the same in tasks and functions. Of course, teachers are successful who have certain attitudes and behaviors in their responsibilities. But the point which has remained unknown and is also the major problem of this research is how and through which factors or variables teachers’ organizational citizenship behavior is affected?

This article is an answer to the challenges posed by those researchers. We agree with Wright and Goodstein’s (2007) suggestion that the exploratory nature of the assessment method employed by Cameron et al. (2004) invites other researchers to employ such a measure in other contexts and in relation to other outcomes (e.g., employee loyalty; organizational commitment; and job Satisfaction). More specifically, we focus on how perceptions of organizational virtuousness predict organizational citizenship behavior (OCB), both directly and through the mediating role of affective job Satisfaction, the hypothesized model being depicted in Model 1. In other words, after achieving findings indicating role and direct and indirect importance of organizational virtuousness, the important question is does job satisfaction play a role between organizational virtuousness and organizational citizenship behavior? In this model, the effect of an exogenous latent variable (organizational virtuousness) and an indigenous latent variable (job satisfaction) are assumed positive in organizational citizenship behavior. In addition to having a direct and positive impact on organizational citizenship behavior it is assumed as an organizational virtuousness mediator on organizational citizenship behavior.
Keeping this in mind, we structured the article as follows. We start by briefly discussing each construct’s definition. Making use of a double-source method for collecting data on dependent and independent variables, we hope to contribute to a better understanding of what is surely a central challenge for many contemporary organizations and their managers: to identify forms of using and developing their human capital in a way that is mutually beneficial for themselves and their employees.

**Objectives and hypotheses**

The aim of this study was to test the direct and indirect effect of (through the intermediary of job satisfaction) organizational virtuousness in organizational citizenship behaviors of teachers and schools and propose a casual model. Given the pattern of research, this research has been to determine whether the data collected have the direct and indirect effects or not? And also whether it can be as organizational virtuousness through the impact on organizational citizenship behavior suggested teachers? Perhaps the ideal goal of this research was to improve teachers' organizational citizenship behavior by increasing job satisfaction and stimulating policy makers and researchers to pay more attention to the importance of organizational virtuousness in schools. To achieve these goals, the following hypotheses were tested:

- There is a significant correlation between organizational virtuousness, job satisfaction and organizational citizenship behavior of teachers.
- Organizational virtuousness has a significant direct effect on organizational citizenship behavior.
- Organizational virtuousness has a direct and significant impact on job satisfaction.
- Job satisfaction has a significant direct effect on organizational citizenship behavior.
- Organizational virtuousness has a significant indirect effect on organizational citizenship behavior.
- The given pattern is a good fit with the data.
Methodology

Method of the study

The present study is “practical” in terms of purpose and “descriptive” in terms of method of data collection. Given that in this study the relations between the two and multivariate relationships and casual relationships (of causal modeling) between variables (in a given model) were considered, therefore it can be said that the method of the present study is a description of the correlation and bivariate causal modeling.

Population

The sample consisted of 403 teachers (208 men and 195 women) from public high school of four areas of Karaj metropolitan.

Data Analysis Method

The data was analyzed using LISREL 8.80 software. confirmatory factor analysis(CFA) is the basis of the measurement model in full structural equation modeling (SEM) and can be estimated using SEM software. LISREL is the most user-friendly. LISREL can read data files generated by a variety of different software packages and can estimate models by simply drawing a path diagram.

To assess the validity of the constructions “Confirmatory factor analysis" and to answer research questions "path analysis" (with respect to assumptions) used. That is means Following the completeion of validityand reliability analysis on the scales of research model; structural equation model (SEM) will be implemented in order to analyse the interaction among variables, identify direct and indirect effects on variables and test hypothesis and research model. SEM is a comprehensive statistical technique to test causal relationships among latent and observed variables (Yılmaz, 2004). Structural model means structural equations that define the causal relationships among latent endogeneous and exogeneous variables and identify explained and unexplained variance. Measurement model is tested through confirmatory factor analysis, while structural model is tested through path analysys(Yılmaz, Çelik, 2009). Absolute fit indices determine how well an priori model fits the sample data (McDonald, Ho, 2002) and demonstrates which proposed model has the most superior fit. These measures provide the most fundamental indication of how well the proposed theory fits the data. Unlike incremental fit indices, their calculation does not rely on comparison with a baseline model but is instead a measure of how well the model fits in comparison to no model at all (Joreskog,Sorbom, 1993). Included in this category are the:

Chi-Squared test (X2): The Chi-Square value is the traditional measure for evaluating overall model fit and, "assesses the magnitude of discrepancy between the sample and fitted covariances matrices’ (Hu,Bentler, 1999).

Comparative fit index (CFI): this statistic assumes that all latent variables are uncorrelated (null/independence model) and compares the sample covariance matrix with this null model (Bentler, 1990).
Goodness of fit (GFI) and the adjusted goodness of fit (AGFI): calculates the proportion of variance that is accounted for by the estimated population covariance (Tabachnick, Fidell, 2007).

Normed fit index (NFI): This statistic assesses the model by comparing the $\chi^2$ value of the model to the $\chi^2$ of the null model (Bentler, Bonnet, 1980).

Root mean square error of approximation (RMSEA): The RMSEA tells us how well the model, with unknown but optimally chosen parameter estimates would fit the populations covariance matrix (Byrne, 1998).

It is worth noting that in both the CFA and in the process of examining how a given model fit indices Chi-Squared test ($X^2$) (as long as a significant loss), fitting comparison (CFI), between 0.9 and 1 (Hu, Bentler, 1999), goodness of fit (GFI), between 0.9 to 1 (Miles, Shevlin, 1998), adaptive goodness of fit (AGFI), between 0.9 to 1 (Tabachnick, Fidell, 2007) and mean square error of approximation (RMSEA), less than 0.08 (Steiger, Lind, 1980) used. For a closer look at the pattern additional measures including the normal fit index (NFI), between 0.9 and 1 (Bentler, Bonnet, 1980) and incremental fit index (IFI), between 0.9 and 1 (Kline, 2011) used.

Research tools

Data was collected using 3 standard questionnaires. To measure organizational virtuousness Cameron et al. questionnaire with 15 items (2004) designed based on 5 dimensions of organizational optimism, organizational trust, organizational compassion, organizational solidarity, organizational mercy was used. Also, the job satisfaction questionnaire with 20 items of Minnesota (MSQ), developed by Weiss et al., (1967) was used to measure internal satisfaction, external satisfaction and overall satisfaction. OCB of teachers was measured using Dipaloa’s questionnaire of 15 items (2004). In this study, teachers were asked to describe the statements during the five-point scale of Likert grading (from very low=1 to very high=5). The reliability of the questionnaire was reported 0.92, 0.92 and 0.85 respectively using the Cronbach’s alpha for organizational virtuousness, job satisfaction and organizational citizenship behavior (by the removal of two items).

To assess the validity and confirmatory factor analysis was conducted and it was found that scales with high throughput and a good fit measure organizational virtuousness, job satisfaction and organizational citizenship behavior variables (Table 1).

Table 1: parameters for measuring variables of OV, job satisfaction and OCB in CFA

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Standard Parameter of $\beta$</th>
<th>Scale Error</th>
<th>Quantity of t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Virtuousness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational optimism</td>
<td>0.65</td>
<td>0.46</td>
<td>10.46*</td>
</tr>
<tr>
<td>Organizational trust</td>
<td>0.82</td>
<td>0.32</td>
<td>15.89*</td>
</tr>
<tr>
<td>Organizational compassion</td>
<td>0.96</td>
<td>0.07</td>
<td>15.58*</td>
</tr>
<tr>
<td>Organizational integrity</td>
<td>0.98</td>
<td>0.04</td>
<td>16.48*</td>
</tr>
<tr>
<td>Organizational forgiveness</td>
<td>0.83</td>
<td>0.34</td>
<td>15.46*</td>
</tr>
</tbody>
</table>

Fitting indicators: $X^2=246$, $(X^2/df)=3.12$, (RMSEA)=0.07, (GFI)=0.95, (AGFI)=0.93, (CFI)=0.98
As seen in Table 1, one of the indicators is not desirable. But it should be noted that: First, there is no convergence among scholars about the optimal value of the indices; for instance, some believe even very large amount of 5 degrees of (X²/df) freedom is fit (Wheaton, 1977). Second, when the square index (X²) becomes significant for reasons such as an increase in the sample size, attention is paid to alternative indices. Clearly rest of the indices are at an acceptable level so standardized coefficients and indicators are fitted showing the validity of these tools and the perfect fit of the measured variables with the data.

**Findings**

Table 2 shows the variables described using the mean and standard deviation.

<table>
<thead>
<tr>
<th>Latent Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Virtuousness</td>
<td>3.59</td>
<td>0.74</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>3.66</td>
<td>0.70</td>
</tr>
<tr>
<td>OCB</td>
<td>3.42</td>
<td>0.60</td>
</tr>
</tbody>
</table>

In the first hypothesis test, Pearson correlation coefficient was calculated between the variables listed in Table 3 respectively.
Table 3: Correlation coefficients between variables

<table>
<thead>
<tr>
<th>Latent Variables</th>
<th>Organizational Virtuousness</th>
<th>Job Satisfaction</th>
<th>OCB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Virtuousness</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>0.72</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>OCB</td>
<td>0.48</td>
<td>0.63</td>
<td>1</td>
</tr>
</tbody>
</table>

As Table 2 shows, there is a significant correlation between all the variables at 0.01. The highest coefficient of correlation was between organizational virtuousness (r=0.72) and job satisfaction of teachers. After that OCB has the highest correlation with job satisfaction (r=0.63). The organizational virtuousness has the lowest correlation with organizational citizenship behavior (r=0.48). The first hypothesis test conclusion is that there is a significant correlation between the variables.

Before examining the hypotheses, to inform them of the presence of exogenous and endogenous variable in the model, as a first step, given fitted model offered. Model 2 is achieved from the relationship between latent exogenous variable (organizational virtuousness) with an endogenous latent variable (OCB) and endogenous latent variable intermediary other (job satisfaction).

![Assumed model of study after fit](image)

In the test of given model, the direct and indirect effects of the parameters in Table 3 have been examined and reported.

Table 3: Direct and indirect effects if parameters in a given pattern after fit

<table>
<thead>
<tr>
<th>Effects</th>
<th>Standard Parameter of β</th>
<th>Standard deviation</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational virtuousness on OCB</td>
<td>0.03</td>
<td>0.07</td>
<td>0.38 n.s</td>
</tr>
<tr>
<td>Organizational virtuousness on Job Satisfaction</td>
<td>0.77</td>
<td>0.07</td>
<td>10.82*</td>
</tr>
<tr>
<td>Job Satisfaction on OCB</td>
<td>0.71</td>
<td>0.1</td>
<td>6.99*</td>
</tr>
<tr>
<td>Indirect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational virtuousness on OCB by job satisfaction mediatory</td>
<td>0.57</td>
<td>0.06</td>
<td>9.04*</td>
</tr>
</tbody>
</table>

P < 0.05
Looking at the Table 3 and test of second hypothesis, we find that a standard parameter coefficient (β=0.03) shows significance between organizational virtuousness and organizational citizenship behavior and t value at 0.38 is evidence of direct influence; also OCB is insignificant on organizational virtuousness. Therefore, the direct effects of exogenous variables are statistically insignificant. Test of third hypothesis suggests that the standard parameter coefficient of (β=0.77) and t at 10.82 are evidences of the direct and significant impact on job satisfaction to organizational virtuousness. The fourth hypothesis testing also showed that satisfaction with the standard parameter coefficient of (β=0.71) had a direct impact on organizational citizenship behavior of teachers. The study of this effect at t value of 6.99 indicated that the effect is statistically significant. The fifth hypothesis suggests that organizational virtuousness (with the mediation of job satisfaction) with standard parameter coefficient (β=0.57) have an indirect effect on organizational citizenship behavior of teachers. In considering the significance of this work, the value of t equal to 9.04, suggests that this effect is statistically significant. To test the sixth hypothesis of goodness of fit index pattern is analyzed and reported in Table 4.

<table>
<thead>
<tr>
<th>Goodness of fit indices</th>
<th>Values of Indices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Square</td>
<td>4071</td>
</tr>
<tr>
<td>Degrees of freedom (X²)</td>
<td>1077</td>
</tr>
<tr>
<td>Square to the degrees of freedom (X²/df)</td>
<td>3.7</td>
</tr>
<tr>
<td>Root mean square error of approximation (RMSEA)</td>
<td>0.09</td>
</tr>
<tr>
<td>Goodness of fit index (GFI)</td>
<td>0.93</td>
</tr>
<tr>
<td>Modified goodness of fit index (AGFI)</td>
<td>0.90</td>
</tr>
<tr>
<td>The normal fit index (NFI)</td>
<td>0.91</td>
</tr>
<tr>
<td>Comparative fit index (CFI)</td>
<td>0.93</td>
</tr>
<tr>
<td>Incremental fit index (IFI)</td>
<td>0.93</td>
</tr>
</tbody>
</table>

As seen in Table 4, (X²/df) and (RMSEA) is not desirable. But it should be noted that: First, there is no convergence among scholars about the optimal value of this indexes for instance, some believe even very large amount of 5 degrees of freedom (X²/df) are fit (Wheaton, 1977). Second, when the square index of (X²) inter alia becomes statistically significant by increasing the sample size, attention is paid to alternative indices. Clearly rest of these indices are at an acceptable level except RMSEA! GFI to 0.93, AGFI to 0.90, NFI equal to 0.91, CFI and IFI equal to 0.93 are all higher than the 0.9 and at an acceptable level.

Therefore and Due to this one of the paths (a direct effect organizational citizenship behavior on organizational virtuousness) is not significant, can’t said be given an appropriate model and complete model to explain the organizational citizenship behavior. In this cases, can be “modify " model (Schumacker & Lomax, 2004), they know the Remove non-significant paths the proper way. On the basis in this review by removing the direct effect of organizational citizenship behavior on organizational virtuousness, Amended and re-fitted to a given pattern that results report in table 5.
As seen in Table 5, these indices are at an acceptable level. On the basis of this result is sixth hypothesis, the given pattern, can be a good fit to the data and can be proposed as organizational virtuousness through the impact on organizational citizenship behavior of teachers.

**Discussion**

The aim of this study was to test the direct and indirect effects of (through the intermediary of job satisfaction) organizational virtuousness in organizational citizenship behaviors of teachers and schools. Results showed verification of all hypotheses, but the second one. In the first hypothesis testing, correlation coefficients between the variables of the study showed that there is a significant correlation between all the variables at 0.01. The second hypothesis test results show that the organizational virtuousness has a direct, low and non-significant impact on organizational citizenship behavior of teachers. However, in this study, the correlation between organizational virtuousness and organizational citizenship behaviors of teachers(r=0.48) is reported significant, but direct research to examine this relationship is not seen to be comparable, but it is not a significant direct effect, unlike Bogler and Samech (2009) and Oplatka (2009) it is more or less the same individual variables of organizational virtuousness on organizational citizenship behavior in non-educational organizations. In fact, teachers with good ethics, trust, forgiveness, honesty, compassion and optimism in the school environment are certainly evidences of organizational behavior, but whether teachers immediately and directly impact on organizational citizenship behavior.. In contrast agents explained this result with similar research in the past, it should be stated that, first, they are different organizational characteristics, secondly it can be due to the culture of the countries where the research is carried out.

The third hypothesis testing showed that organizational virtuousness has a strong and significant impact on teachers’ job satisfaction. This result is consistent with previous research results, such as Capra (2006), Fabian (2012), Fernando, Almeida (2012). The fourth hypothesis test results showed that job satisfaction has a direct, significant and positive

<table>
<thead>
<tr>
<th>Effects</th>
<th>Standard Parameter of β</th>
<th>Standard deviation</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational virtuousness on OCB</td>
<td>0.80</td>
<td>0.06</td>
<td>10.89*</td>
</tr>
<tr>
<td>Organizational virtuousness on Job Satisfaction</td>
<td>0.76</td>
<td>0.09</td>
<td>8.87*</td>
</tr>
<tr>
<td>Indirect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational virtuousness on OCB by job satisfaction mediatory</td>
<td>0.60</td>
<td>0.05</td>
<td>9.91*</td>
</tr>
</tbody>
</table>

Fitting indicators:

\[(X^2/df)=3.5, \text{(RMSEA)=0.07, (GFI)=0.95, (AGFI)=0.91, (NFI)=0.92, (CFI)=0.98, (IFI)=0.94}\]
impact on organizational citizenship behavior of teachers. Somech et al., (2000), Lepine (2002), Tsui et al., (2007), Bowling, Hamond (2008), Bajpai, Holani (2011), and Zeinabadi (2009 and 2010) showed that job satisfaction has (direct or indirect) impact on their organizational citizenship behavior in several ways in several ways. The results indicate that job satisfaction makes organizational citizenship behavior through helping other teachers to help students in the classroom and outside the classroom, the school in general, parents and contribute to personal growth done (Zeinabadi, 2010).

Organizational virtuousness has an indirect effect on organizational citizenship behavior with job satisfaction mediating which was tested in the fifth hypothesis. The test results demonstrate that significant effect of the relationship was indirect. Therefore, we can conclude that organizational virtuousnesse through job satisfaction has a positive indirect effect on organizational citizenship behavior of teachers. When organizational virtuousnesses and virtuous behavior-oriented development which include the development of optimism, confidence, compassion, solidarity and forgiveness in the organization, the human resources greatly enhances retention and satisfaction, because the school or organization with virtuousnesses, habits, attitudes and actions leads to the production of social and individual happiness and will introduce these to employees with gratitude and when teachers are happy in school it eventually leads to such complacency, leading to the behaviors that they referred to the organizational citizenship behaviors (Varmazyar, 2013).

Sixth hypothesis test results showed that the model fit the supposed goodness of fit model with the data of a given pattern, and pattern can be given as a model for organizational virtuousnesse effect on organizational citizenship behavior of teachers.

According to what has been through, the great impact of organizational citizenship behavior is considered the most important and most logical explanation about its importance of (Smith et al., 1983; Padsakof et al., 2000; Dipaola, Hui, 2005). Therefore, in the community of teachers, voluntary behavior at school can help teachers to help students and the school in general as well as contributing to personal growth, classroom, administrators and even parents. Organizational virtuousnesses with moral character properties are recognized as high performance organizations. As schools of higher corporate virtues are certainly, in this behavior that it will be known as organizational citizenship behavior, but as we have seen, for most of these behaviors, teachers in schools with high organizational virtuousnesses, working they must also have high job satisfaction. However, for growth of such attitudes and feelings, teachers who are working at schools with high virtue must have high job satisfaction; that is because with such views and feelings, they will truly and deeply love the school and its environment and take on their duties better than ever or even more than they are expected to.

**Conclusion**

The world has never experienced such magnitude of economic depression as the one it currently faces. Thus, at a time like this there is usually the urge on the part of organizations and their members to indulge in unethical practices as a surviving strategy. Fortunate enough, positive organizational behavior such as virtuousness and individual employee optimism have proved to be what organizations really needed to survive with a in a dilapidated business environment. The main thrust of positive psychology has been to catalyze a change in the focus of psychology from pre-occupation only with repairing the worst things in life to also building positive qualities (Seligman, Csiksentmihalyi, 2000). Ignoring the positive aspect of work is inappropriate if we must appreciate the meaning and effects of working (Turner et
It is against this background that studies on positive psychology such as the present is not only timely, but necessary. Accordingly, those working in education and training managers as the most important factor of social, economic and cultural development to achieve better and higher education, should strengthen the mechanisms of organizational virtuousness and provide job satisfaction of teachers in schools. Finally, it is suggested that in future studies, the researchers compare the test pattern, different levels of education in schools, by age, gender, education, job experience and organizational level of teachers or add some other variables for which there is no justification.

References


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AN ANALYTICAL STUDY ON INDIFFERENCE MANAGEMENT IN EDUCATIONAL SYSTEM OF IRAN: REFLECTION ON EXPERT’S OPINIONS

Elham Abolfazli³, Reza Yousefi Saidabadi⁴, Vahid Fallah⁵

Abstract

This study attempted to explore and analyse the indifference management trend in the Educational system of Iran. This objective was achieved through a qualitative approach and grounded theory. The population included all educational management professionals and experts who had at least two years of management experience. Twenty-four individuals were selected through purposive sampling based on theoretical data saturation. In order to collect research data, semi-structured interviews were adopted. Moreover, the results were evaluated through systematic analysis method based on open, core and selective coding. The findings suggested that the causal conditions affecting indifference management entail eight dimensions: job motivation, employee development, organisational culture, organisational climate, attitude and manager’s performance, employee attitude, work environment and nature of work. Organisational culture, organisational climate and workplace conditions were the underlying factors of indifference management, while behaviour and performance of managers were mediating or confounding conditions, playing a dramatic role in indifference management.

KEY WORDS: indifference management, indifference in education system, indifference trend among employees

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UDC: 005.32:331.101.3(55) 005.958.2

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Introduction

Nowadays, manpower is considered as the most strategic factor by researchers. Studies have shown that efficient and committed manpower will have desired results in performing tasks and providing services for the organisation. More importantly, due to technologic revolution occurred in recent decades, the role of human capital as an important organisational source has been highlighted (Bush, 2010; Daft, 2010; Bush, Middlewood, 2005).

In this regard, one of the main concerns of managers is to motivate employees as strategic assets of an organisation (Danaei Fard et al., 2010). Indifference and discouragement of employees to destiny and plans of organisation can be considered as an alarm for reduced organisational performance. In fact, the spirit of indifference in the behaviour of employees destroys their work and effort (Keefe, 2003).

Not paying attention to organisational regulations and the lack of accountability to clients (Byrd, 2008), being indifferent to the success or failure of organisation, lack of providing new solutions (Mirhosseini Zavareh, 1995), low self-esteem (Danaei Fard & Eslami, 2010), carelessness in doing tasks, absence in work and not paying enough attention in performing duties (Moghimi, 2007) are among the signs of being indifferent.

Indifference gives rise to many negative consequences for both the individual and the organisation, including lack of motivation for working, low working efficiency, irresponsibility and loss of employment opportunities for indifferent individuals, which eventually leads to resignation or sense in insecurity (Abolalayee, 2015). Hence, organisational goals cannot be set based on employees who have been indifferent the organisation, because such indifference will leave an adverse impact on the motivation of employees (Leander, 2009). Each organisation on the road to success or even survival must create commitment inemployees and eradicate any sense of indifference. The Iranian Department of Education as the centre of gravity for training manpower similar to other organisations needs to achieve its lofty goals through enthusiastic, caring and committed employees, so as to remain viable and avoid unnecessary costs for recruiting new employees, taking more useful measures for its mission and tasks (Rezaeian, 2014). Indifference occurs when someone loses their hopes to achieve goals, striving to get over the source of desperation (Rezaeian, 2001, p. 99). What makes people give up and be indifferent is their profound and long discontent.” (Eslami, 2008, p.23). Job alienation in knowledge-based employees such as school principals and teachers looks like a syndrome appearing as indifference, disgust, frustration, failure at school, negative attitudes towards education and work, indifference towards those activities, finding no identities in colleagues, students, negligence toward education and social communication, and cooperation with the management et al. Many scholars believe that individuals join organisations dynamically, but are deprived of innovation and growth as a result of inter-organisational relationships and wrong and selfish actions of executives arising from their illegitimacy. They ultimately become an inactive, isolated, indifferent, irresponsible and abnormal element. In such organisations, employees are given minimal control over their work environment. They encouraged remaining reliant subordinate, which is frequently observed in the public sector due to fundamental differences (Tavassoli, Ghadimi, 2001). False ideologies of “wide profitable table for all” and “the better you work, worse the results you face” reflect the profound indifference in the public and semi-public sectors. Managers often associate the problem of human resources with symptoms such as lack of creativity and innovation in work, low productivity, lack of motivation at work and turnover. Therefore, one of the factors
leading to non-productivity of human resources can be found within the employee indifference toward the organisation. Organisational indifference is a destructive factor latently degrading any organisation. Indifference in organisation represents a problem regarding which managers must take seriously the dangers of corporate indifference, employee turnover, absenteeism, negligence, lack of attachment and pride in the organisation, low motivation and finally organisation left by employees (especially those who are highly specialised and function a key asset) will have excessive costs for training, empowerment and employment. The above problems can be controlled and be regarded as capabilities for organisations that have recognised their sensitivity (Mehrabian et al., 2011). Finding out what items and qualities in others cause indifference leads to self-awareness, thereby inhibiting the indifference. The literature review suggested that despite a broad range of theoretical and practical efforts to avoid indifference and create employee motivation, little investigation has been specifically focusing on the factors contributing to organisational indifference management in the Educational system of Iran, leaving the issue shrouded in mystery. The overview of previous papers concerning the factors either directly or indirectly contributing to organizational indifference management obtained three structural, motivational and managerial factors. Regarding the factors contributing to indifference, very few studies have been conducted, focusing mainly on two or three variables. Organizational culture, motivational factors, environmental conditions, employee empowerment and leadership style are among the most important factors in improving the productivity of human resources (Mehrabian et al., 2011). Justice plays an important role in the health status of employees and the effectiveness of human resources in an organization (Elovaino et al., 2005, quoted by Jahanian and Ghodsi, 2014). The most important factors in preservation and survival of the organization in the long term lies in justice (Masterson, 2002). Sense of injustice would cause feelings of worthlessness and low self-esteem, thus distracting the individuals from their tasks (Nair, Vohra, 2010). Following the increase in the intellectual abilities of employees, new training methods, non-admonition, embracing new ideas, a sharp decline in punishment, strengthening employee satisfaction, division of power between employees etc. Therefore, employees will enjoy their work and are constantly on the dynamics, where such an organization will never encounter indifference.

Manpower is the primary capital, competitive advantage and success factor of the organization. Thus, lack of employees with good working and moral characteristics will undermine the success of the organization (Roy, Lyenger, 2005). As a result, the abilities such as decision-making, innovation and creativity, monitoring over one’s performance, accountability (Dimitriadis, 2011) and ideal traits such as dedication, altruism, generosity, work ethic etc. in employees has been known as a unique competitive advantage that leads to good behavior on the part of employees and ultimately the success of the organization. Empowerment of employees is one of these approaches adopted in recent decades leading to many positive developments in the implementation of activities. This study sought to explain and analyze the process of indifference management in the Educational system of Iran with a particular focus on Ardebel Department of Education.
Research objectives

General objective

Analyzing the indifference management in Educational system of Iran

Specific objectives

- Analyzing the dimensions and components of indifference management in Educational system of Iran
- Analyzing the causal conditions of indifference management in Educational system of Iran
- Analyzing the underlying conditions of indifference management in Educational system of Iran
- Analyzing the confounding conditions of indifference management in Educational system of Iran

Research questions

- What are the dimensions and components of indifference management in Educational system of Iran?
- What are the causal conditions of indifference management in Educational system of Iran?
- What are the underlying conditions of indifference management in Educational system of Iran?
- What are the confounding conditions of indifference management in Educational system of Iran?

Methodology

The philosophical foundation behind this study involves a quest of knowledge through the opinions of specialist participants (subject matter experts). In fact, the philosophical foundation lies in interpretative epistemology that reflects research that lead to qualitative approach. Because the views and experiences of the participants can be understood through immediate limitation under a predetermined framework realized through a qualitative approach. In addition, evidence suggests that qualitative research can provide a proper approach to exploration of newly emerging data (Creswell J. w., 2012; Creswell, 2009; Hatch, 2002; Donoghue,Punch, 2003; Marshall,Rossman, 1999; Maxwell, 1996).

This study involved the grounded theory, since it can function both as an instrument for theorization and a set of techniques for qualitative research (Biabangard, 2013). The inferring basis is inductive method, where the theory was developed through an inductive procedure involving a study on the phenomenon. In other words, the theory must be proved, explored
and completed through certain systematic methods (Strauss, Corbin, 2014). Among qualitative and interpretative methods, the grounded theory has unique advantages for researchers, because it has a high capacity to interpret complex phenomena giving more elbow room to the researcher for an in-depth examination of concepts (Mohammadpour, 2013). Grounded theory involves a field study of phenomena describing the natural locations such as hospitals, classrooms and organizations. Its main objective is an in-depth evaluation of actions, behaviors, beliefs and attitudes of individuals and groups is the same way as occurred in real life, so as to clarify the social processes in that particular field (Adib Hajbagheri, 2006). Application of this method has been recommended in situations where there is very little understanding of a phenomenon or when the existing theories entail inadequate explanation of the phenomenon (Parker, Myrick, 2011 quoted by Mohammadpour, 2013). Given that the subject of this study involved organizational indifference management so far neglected in Iranian training centers and rarely investigated, there are no theories proposed, thus requiring the grounded theory.

The population consisted of education professors at universities and educational professionals specialized in educational administration who had at least two years of management experience. Moreover, a total of 20 key experts were selected through purposive sampling based on data saturation. However, the interviews continued to 24 subjects, so as to ensure higher level of confidence. Interviews were conducted upon prior authorization. Before the interview, the subject and purpose of the study were explained to the interviewees who were then assured of information confidentiality. The theoretical data saturation refers to a point where sampling is stopped as there are no newer comments and opinions proposed. In theoretical sampling, only individuals were selected with adequate technical views and experiences in relation to the issues.

In order to collect data, semi-structured interviews were developed. In this procedure, the interviewee was given a general open-ended question concerning the subject of research, leaving their opinions without limitation in terms of the conceptual framework. The reason behind adoption of such type of interview was that the researcher would be able to explore limitlessly the comments, world views and experiences of participants, constituting the philosophical foundation of any qualitative research. It is worth noting that during the interviews and upon the permission of participants, a tape recorder was used to record data, which were then converted into a transcript. The data were validated through the following measures: 1) reviewing and analyzing the categories obtained by the sample group of experts and specialists, i.e. member checking (Maxwell, 1996; Creswell, 2012); 2) participant feedback based leaving comments and views on during the interview, in order to modify items wrongly understood by the researcher, and 3) compliance and homogeneity of findings or triangulation where the researcher can employ the partnership of another researchers for encoding and reviewing the categories, which took place as a group through validation.

Finally, the deductive grounded theory was adopted to analyse the findings based on open coding, core coding and selective coding. In open coding, data are collected from the participants, and are then coded regardless of any particular theoretical basis. In the next step, which is core coding, coded data are summarized and reduced until a broader range of categories and classes is achieved and there are more detailed codes (Creswell, 2012). In selective coding, the core phenomenon of research is examined in relation to other categories (Creswell, 2013). It is worth noting that in open coding phase, the recorded interviews after implementation are line by line reviewed, conceptualized and categorized depending on similarity, conceptual relations and common characteristics. The number of obtained codes was specified through primary conceptual propositions. In the next step extracting the categories from open codes and developing the core codes, a total of 21 concepts and then 8
major categories were obtained. These categories were labelled as motivational work, employee development, organizational culture, organizational climate, attitude and performance of managers, employee attitude, work environment and the nature of work.

**Findings**

Considering the evident relationship between the experts and subject matter, the subjects were requested to participate in the study and respond to the semi-structured interviews. What follows is the results obtained from expert interviews. In order to better organize the findings, each finding was examined in relation to the research questions.

**What are the dimensions and components of indifference management in Educational system of Iran?**

The findings obtained from this study showed that indifference management in Educational system of Iran entails 8 major dimensions; the underlying component of each has been displayed in Table (1).

**Table 1: Eight categories obtained from coding**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Category</th>
<th>Concept</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job salaries and benefits</td>
<td>Motivational work</td>
<td>Teamwork</td>
<td>Organizational climate</td>
</tr>
<tr>
<td>Assessment and promotion</td>
<td>Organizational intimacy</td>
<td>Importance of creativity and innovation</td>
<td></td>
</tr>
<tr>
<td>Physical work conditions</td>
<td>Organizational climate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific objectives</td>
<td>Organizational culture</td>
<td>Core competencies through training</td>
<td>Employee development</td>
</tr>
<tr>
<td>Commitment to the organization</td>
<td>Job-learning development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attention to employee performance</td>
<td>Behavior and performance of managers</td>
<td>Organizational trust</td>
<td>Employee attitude</td>
</tr>
<tr>
<td>Providing solutions</td>
<td>Organizational justice</td>
<td>Organizational support</td>
<td></td>
</tr>
<tr>
<td>Organizational justice</td>
<td>Designed job description</td>
<td>Nature of work</td>
<td></td>
</tr>
<tr>
<td>Lack of formalization</td>
<td>Organization structure</td>
<td>Job fitting with the expertise of employees</td>
<td></td>
</tr>
<tr>
<td>Delegation of authority</td>
<td>Decentralization</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Core coding**

In core coding, one of the components of open coding is selected as the primary concept or phenomenon (the process under study) and is then examined in the core of process, while interconnecting other categories (Strauss, Corbin, 2014). In core coding, it is essential to examine four categories of phenomena involved in data analysis aiming to formulate a theory based on research questions, covering the causal conditions, action and interaction conditions, underlying conditions, confounding conditions and outcomes (Mohammadpur, 2013).

**What are the causal conditions of indifference management in Educational system of Iran?**

These categories resulting from causal conditions or preceding circumstances refer to events or incidents leading to occurrence or expansion of a particular phenomenon (Strauss, Corbin, 2014).
The results of content analysis for the responses provided by interviewees to items such as how do you find the organizational indifference management? And factors contributing to the organizational indifference management indicated there are three main categories concerning causal conditions to create the phenomenon under study, where the open codes have been displayed in Table 2.

**Table 2: Open codes, categories concerning causal conditions**

<table>
<thead>
<tr>
<th>Open codes</th>
<th>Sub-categories</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of salaries and benefits with</td>
<td></td>
<td></td>
</tr>
<tr>
<td>assigned responsibilities</td>
<td></td>
<td>Motivational work</td>
</tr>
<tr>
<td>Equitable salaries and benefits compared with</td>
<td></td>
<td></td>
</tr>
<tr>
<td>colleagues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequacy of benefits and amenities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitality in the workplace</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessibility to essential equipment and facilities</td>
<td></td>
<td>Physical work</td>
</tr>
<tr>
<td>Sufficient space for carrying out tasks</td>
<td></td>
<td>conditions</td>
</tr>
<tr>
<td>Desirability of reward and punishment system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job-path development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee assessment based on their actual performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>— Proportional powers and responsibilities</td>
<td></td>
<td>Designed job</td>
</tr>
<tr>
<td>— Appropriate work allocation</td>
<td></td>
<td>description</td>
</tr>
<tr>
<td>— Proportion of workload with dedicated deadline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job fitting with the expertise of individual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job fitting with previous expertise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion with personality traits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>— Sympathy, empathy and cooperation between</td>
<td></td>
<td>Trust in the</td>
</tr>
<tr>
<td>employees</td>
<td></td>
<td>organization</td>
</tr>
<tr>
<td>— Promoting cooperation level based on trust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>— Trust in behavior, words and performance of the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>— Position of each individual on the basis of merit</td>
<td></td>
<td>Justice in the</td>
</tr>
<tr>
<td>— Exercising justice in dealing with employees</td>
<td></td>
<td>organization</td>
</tr>
<tr>
<td>— Meritocracy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>— Attention to the well-being of employees</td>
<td></td>
<td>Organizational</td>
</tr>
<tr>
<td>— Attention to statements and problems of employees</td>
<td></td>
<td>support</td>
</tr>
<tr>
<td>— Assistance when employees encounter problems</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In this study, causal conditions referred to conditions entailing the main factor contributing to indifference management in Educational system of Iran. These conditions throughout the analyses were based on motivational work, nature of work and employee attitude depending on the expert’s opinions. All experts agreed that the Department of Education does not pay serious attention to solving the economic problems of employees. Moreover, the full reliance of the Department of Education on the government non-profitable nature of the organization has added to the burden of issues. Job satisfaction is realized through the trade-offs in the organization, while it will curtail as long as the employee needs are not fulfilled. If real opportunities for advancement within the organization are not made
available to employees and evaluation is not based on facts, there will be escalated indifference among employees. Furthermore, the appropriateness of the powers and responsibilities and division of tasks, physical conditions of work, access to equipment and facilities necessary to carry out the tasks are among important factors contributing to indifference of individuals towards work, colleague, organization, clients and the manager. Moreover, experts emphasized that perception of employees toward the organization is one of the most important factors contributing to indifference management. Support from organization for its employees can be helpful to problems, and the fairness perceived by employees play a key motivational role in job and indifference management.

What are the underlying conditions of indifference management in Educational system of Iran?

The underlying conditions represented specific situations affecting the strategy (Strauss, Corbin, 2014). In this study, three categories of organizational culture, work environment and organizational climate were effective in strategies as displayed in Table 3.

<table>
<thead>
<tr>
<th>Table 3: Open codes, categories concerning underlying conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Open codes</strong></td>
</tr>
<tr>
<td>Specificity of organizational goals</td>
</tr>
<tr>
<td>Identified prospects by the manager</td>
</tr>
<tr>
<td>Motivational goals and objectives</td>
</tr>
<tr>
<td>Job considered as a value</td>
</tr>
<tr>
<td>Embracing changes and new working practices</td>
</tr>
<tr>
<td>Employee involvement in the activities of the organization</td>
</tr>
<tr>
<td>Formation of work-groups</td>
</tr>
<tr>
<td>Adoption of expert’s opinions</td>
</tr>
<tr>
<td>Integrity of tasks through collaboration</td>
</tr>
<tr>
<td>A spirit of partnership</td>
</tr>
<tr>
<td>Friendly interactions</td>
</tr>
<tr>
<td>Socialization outside the workplace</td>
</tr>
<tr>
<td>Interacting with respect</td>
</tr>
<tr>
<td>Manager intimacy with employees</td>
</tr>
<tr>
<td>Encouraging employees toward being creative and innovative</td>
</tr>
<tr>
<td>Raising ideas without any fear</td>
</tr>
<tr>
<td>Fostering creativity and innovation</td>
</tr>
<tr>
<td>Employees making decisions without superiors involvement</td>
</tr>
<tr>
<td>Informal communication channels</td>
</tr>
<tr>
<td>Overlooking certain guidelines</td>
</tr>
<tr>
<td>Giving each person responsibility depending on their capacity</td>
</tr>
<tr>
<td>Employee involvement in the activities of the organization</td>
</tr>
<tr>
<td>Objectives outlined by the manager and implemented by employees</td>
</tr>
<tr>
<td>Lack of formalization</td>
</tr>
<tr>
<td>Delegation of authority</td>
</tr>
<tr>
<td>Decentralization</td>
</tr>
</tbody>
</table>
In identifying and examining the behavior and performance of members at an organization, awareness of organizational culture and climate are fundamental steps. Because culture creates a collective identity helping the members of the group in coordination and compliance with policies, missions and goals of the organization (Hariudin Mohd, Borhandden, 2012). In formulating a strategy, it is crucial to identify organizational culture (Sargazi, Mohammadyari, 2014). Organizational culture plays an undeniable role in the success of business changes (Raouf, 2013). In this study, clear objectives were labeled commitment to work and motivation as culture, where the commitment and motivation together represent the work culture, which is a subset of the organizational culture. In order to understand the organization and the behavior/performance of employees, it is essential to understand the culture, since it simply facilitates enforcement of changes and sustains the new organizational orientation (Alvani, 2004). Hence, if managers are seeking to increase productivity and organizational performance, they should concentrate on the constituent factors of culture. When employees internalize the organizational values, and find their jobs so significant and motivating with feelings of solidarity with their colleagues, there will be greater commitment to the organization. Another underlying category is organizational climate. Indifference is developed and curtailed based on whether or not there is emotional intimacy in the organizational climate, creativity and innovation are encouraged and teamwork is valued.

**What are the confounding conditions of indifference management in Educational system of Iran?**

The confounding conditions are general and wide-range conditions affecting actions/interactions mechanism (Strauss, Corbin, 214). Based on interviews with experts, two categories of behavior and performance of managers, employee development were labeled as confounding conditions.

*Table 4: Open codes, categories concerning confounding conditions*

<table>
<thead>
<tr>
<th>Open codes</th>
<th>Sub-categories</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing the employee capabilities</td>
<td>Providing variety of methods and solutions to solve job problems</td>
<td>Providing solutions</td>
</tr>
<tr>
<td>Providing strategies to achieve objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aware of manager about the influence of their words on employee performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of the manager about their strengths and weaknesses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Embracing criticisms openly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Giving feedback on jobs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous evaluation of employees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The emphasis of the manager on the role of employees in improving organizational performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The ability to influence others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effectiveness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usefulness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning on the job</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practical training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous development of skills and competencies of individuals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The possibility of obtaining new work experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core competencies through training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attention to employee performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous development of skills and competencies of individuals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job-learning development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Con founding conditions</td>
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</tbody>
</table>
By providing solutions and transparent relationships with employees and focus on their performance, managers can become competent leaders for the organization. Dehghan et al. (2012) argued that the primary role of any leader is to unite individuals around key values of the organization. Educational leaders must create an organizational climate full of confidence, mutual respect, and collaboration to solve problems (Shahmansouri, Sokutarani, 2015). Employee experience is achieved through empowerment, dramatically affecting job promotion and evolution, raising the sense of being useful in employees.

Discussion and conclusions

Since exploration within the subjective world and experiences for extraction of opinions require a qualitative research method, the grounded theory was employed since it was consistent with the objective and main question of this research (Biabangard, 2013). In order to collect data, semi-structured interviews were employed. Finally, after reaching theoretical saturation, interviews were administered with 24 members of the Education system, university professors and professionals in the field of education management who had at least 2 years of management experience in Educational system of Iran. The collected data were compared and then organized through open coding, core coding and selective coding in the form of eight categories and 21 concepts. The results of analysis on the collected data were developed into a grounded theory titled the Theory of Indifference Management in Education System. It seeks to explore the process of organizational indifference management in the Educational system of Iran.

Factors contributing to indifference management

In this study, commitment to the organization and specific goals was labeled as an organizational culture. In order to understand the organization, the behavior and performance of employees, it is crucial to evaluate culture. When employees internalize the organizational
values, find their jobs motivating and meaningful with a feeling of solidarity with their colleagues, there will be greater commitment to the organization. Healthy and positive work culture in a society and specifically in an organization creates a kind of commitment which is far more valuable than personal interests of employees (Faraji, 2014). Moreover, work motivation, factors, conditions, benefits and situations triggering and directing individual behavior are desirably linked with employment opportunities, which is consistent with opinions of Jalali (2014), Amiri (2013) and Latifian et al. (2013).

In this study, satisfaction with evaluation and promotion, wages and benefits and the physical conditions of work were labeled as motivational aspects of work, which was consistent with opinions of Golparvar et al. (2010) and Seyed Javadin (2015) who found that employee satisfaction entail cognitive emotional reaction in the form of attitude toward work, and Moeedfar and Zahani (2015) who believed unsatisfied needs and job dignity are correlated with job satisfaction and Moghimi (2007) who divided job satisfaction into salary, promotions, working conditions and nature of work. In this regard, Brodaty and Burns (2012) similarly argued that job dissatisfaction leads to indifference. Hence, the more needs are fulfilled and secured, there will be higher satisfaction, thus enhancing motivation and commitment as cultural dimensions of working. Moayedi (2013) achieved a significant relationship between job characteristics and organizational indifference. Job-learning development and creation of competencies through training was labeled as employee development. The results of this study were consistent with those obtained by Isakhani et al. (2013) who argued that growth and learning opportunities were among career resources effective in belonging to the organization, Dehghan et al. (2012) who found that there is a relationship between education/empowerment and job satisfaction and organizational commitment, and Balker (2015) who believed that job satisfaction was realized through empowerment and Ehrheart (2014) who found that employee empowerment led to a prospect of overcoming indifference and attaining job satisfaction. Concepts of attention to employee performance, providing solutions and self-consciousness of manager were labeled as behavior and performance of employees. Based on extensive research of the world’s largest polling firm, Gallup, only 10% of people are talented in management. Therefore, success in business administration and management requires a variety of talents and skills, integration of which rarely happens in one individual. According to Gallup research, these five personality talents can make individuals great managers: motivation, determination, decision-making, accountability and building relations (Bastanipour Moghaddam, 2015). According to Gardner et al., managers tend to foster self-awareness and ultimately positive self-development consistent with the label in this study. This type leadership develops when the leader expands the interests of employees, provides the essential awareness and acceptance to carry out their mission and propel employees towards a direction beyond their interests and priorities of collective interests over individual interests (Stone et al., 2004). Therefore, leadership principles involve development of self and followers, which can be facilitated by empowered employees. In addition, the concepts of importance of creativity and innovation, organizational intimacy and teamwork were labeled organizational climate, which was consistent with opinions of Litwin and Stringer (1968) who found that organizational climate covers perceptions of individual about the type of organization where they works and their sense of belonging in terms of responsibility, structure, reward, warmth, support, identity, risk-taking, conflict and standards (Karimi et al., 2010). According to Hoy and Miskel (2007), it should be noted that organizational climate is a broader term referring to the perception of employees about the general workplace conditions.
Strategic categories

Strategies in the grounded theory provide solutions to deal with the phenomenon under study. In other words, strategies serve to manage how to treat, accomplish and respond to the phenomenon (Mohammadi, 2014). This study proposed four strategies, including:

Establishment of empowerment and development courses

Empowerment functions as a useful means of improving the quality of human resources and increasing organizational effectiveness. In order to achieve business success in today’s ever-changing environment, organizations require the knowledge, opinions, energy and creativity of all employees, ranging from frontline employees to top-ranking managers. To accomplish this, organizations take measure by enabling managers to encourage employees to take the initiative, honoring the collective interest of the organization with minimum supervision and duty as the owner of the organization. The purpose of empowerment is to maximize the adoption of employee capabilities in attaining organizational goals. In addition to the positive impact on organizational, employee empowerment can leave positive effects on employees. Moreover, empowerment changes employee attitude and enhances job satisfaction. Job independence, elbow room and freedom in decision-making are among additional outcomes of such attitude. However, the behavioral effects can increase the confidence of employees, increase the power of compliance, and accelerate responsiveness to customers and so on. When the job duties of employees are not fitting with their skills and interests, they are forced to carry out their duties. On the other hand, it becomes difficult for employees to be creative. Thus, employee empowering opens up a window toward promotion and success. Empowerment affects employee behavior (high performance or indifference), given that employee empowerment can provide more opportunities for freedom, improve employees’ skills and knowledge, so they attain job satisfaction, adhere to organizational goals and actions will be commensurate with the goals of the organization.

Attention to the salaries and benefits of employees and revision in laws and regulations

Reward systems are important tools that managers can use to propel employee motivation. The reward system comprises all elements of an organization such as individuals, processes, rules and decision-making activities, paid as allocation of compensatory payments and benefits to employees in exchange for cooperation (Morhead, Griffin, 2006). Rewards must meet the basic needs of employees, entail the appropriate reward policies and leave dramatic effects on encouraging employees to do the tasks. Moreover, a revision in certain laws and regulations by flexible organizational practices can stimulate more motivation in employees.

Attention to job satisfaction

Job satisfaction indicates to what extent a person loves their work and how assesses the job and whether or not there is positive feeling. The assessment refers to perceived job characteristics, job feelings and work environment (Gholipour, 2009). Job satisfaction will increase individual productivity, commitment to the organization, guarantees physical and mental health, boosts individual spirit, happy life and job skills quickly trained.

Outcomes of indifference

They are divided into two categories of personal and organizational. The organizational outcomes increase employee engagement network, meet the expectations of society, increase customer satisfaction, increased employee satisfaction, increase organizational citizenship
behavior, increase productivity and efficiency, improve how things are done, lower unfair labor conditions and increased vitality in all fields of work. Job characteristics, pre-service and in-service training, fair compensation and job satisfaction dramatically curtail the fatal disease of indifference within the organization. Hence, the human resource management systems entail all these components, leaving an impact on job satisfaction (Yazdani et al., 2015). The personal outcomes of indifference are promotion, a sense of inner satisfaction, and increased volunteer effort, commitment and participation in the tasks. When employees feel that the organization is loyal to them, there will be greater job security, while the benefits and salaries are protected by the organization, with more motivation and enthusiasm, concentrate on their tasks without any marginal issues and job insecurity, which can in turn enhance productivity of human resources.

In addition, employees supported by organizations tend to be loyal to the organization in return. They will be less likely to take occupational risks and leave the organization, because they feel faith and commitment to the organization and its objectives (Moeedfar, Zahani, 2005). Therefore, the elimination of indifference among employees of an organization, motivation and high quality, cooperation, empathy and sympathy are all meaningful. The commitment of individuals lead to a joyful environment and changes are welcome. Nobody is seeking higher salaries than accepted standards and health of employees is sustained.

**Recommendations**

- According to the results suggesting that the behaviour of managers as well as employee development are confounding factors of indifference, it is recommended that subsequent research focus on pathology of these two categories in the education system.
- Given that the organizational climate and working conditions were underlying factors of indifference, it is suggested that further research can adopt ethnographic methods to analyse organizational climate in the education system.
- Given that organizational culture played an important role in indifference, it is suggested that further research be conducted to analyse its effects.

**Limitations**

- Conservative interviewees and avoidance of talking about controversial issues
- Exclusion of several interviewees by their respective General Departments

**Acknowledgment**

This article is an excerpt from Elham Abolfazli Doctoral thesis the Ph.D. candidate in Educational Management at Islamic Azad University of Sari which has been conducted during the years 2014-16.
References


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BUSINESS EDUCATION AND SOCIAL SKILLS TO LEADERSHIP COMPETENCIES

Marija Cukanović Karavidic, Slavko Karavidic, Sladjana Vujicic

Abstract

Encouraged by the fact that the leadership has become sought and highly valued ability in this paper we want to show the importance of education in developing leadership competencies. The creative power of the leaders is in the knowledge-intellectual potential, which have become a key factor of productivity, competitiveness and economic success. Leadership is a process of selection, and then transform those choices into actions - creative thinking through the acquisition of knowledge, values and build social skills.

Personality traits and abilities may be to some extent inherited, but only with the education and continuous learning is possible to develop the necessary competencies of a true leader. The paper proves that the structure of leadership competence consists of numerous knowledge, skills, social skills and personality traits which are unavoidable.

KEYWORDS: leadership, leadership competencies, education, learning.

JEL: I25, J24

UDC: 005.336.5:005.57

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**Introduction**

An uncertain present and an even more uncertain future have a need for exceptionally capable, motivational and flexible leaders. In seeking for a new type of leader capable to successfully face an organization/company with the challenges of the time and who with her/his vision can anticipate the future, numerous sciences have been mobilized: sociology, psychology, anthropology, economics, culturology, andragogy, and applied management. The phenomenon of leadership is in the focus of researchers in everyday practice as well as being significant factors of socio-economic development. The theoretical view of leadership is based mostly on the comparison or the correlation between two comparable phenomena – management and leadership. Two views dominate in that context, the viewing of leadership as a management function and the aspect of management and leadership as two separate phenomena, which can but need not be linked. In the focus of numerous research papers were tasks, roles, and the features of a manager and a leader. According to Covey (2000), leadership is displayed on several levels or areas, on an organizational, business, interpersonal and personal level. The primary tasks of a successful leader, according to Welch, are the following (2005): to enable the employees to understand a mission, to “live and breathe” in accordance with the mission of the organization; to promote the team by training it and developing the self-confidence of the team members, to create confidence in the organization with honesty and transparency, to “exude positive energy and optimism” and to be brave and carry out bold actions.

Goleman (2006) sees the hidden power of the leader in controlling emotions, one’s own and those of others. A leader must have the power to awaken passion, strong emotions, love, optimism and hope and thus to direct the energy of the employees towards a common aim. Krouse (2012) considers that employees have knowledge which produces remarkable ideas.

How does a leader influence the employees, or in other words, how does s/he manage them? A leader’s team style encompasses a series of coordinated activities, procedures and means. The foundation of this commitment is the traits of the leader’s personality, education (knowledge), that it, her/his professional competence, the singularities and tasks of the group/organization which s/he leads, the given circumstances and other. In literature, we can find different classifications of leadership styles, from the traditional to the democratic ones, as well as autocratic and liberal styles, people-orientated and task-orientated leadership, to situational leadership styles based on competences of emotional intelligence such as resonant (visionary, democratic, affiliative, trainer) and dissonant styles (dictating tempo and commandeering) (Alibabić, 2002; Goleman, 2006; Schultz, 2006).

**What constitutes a leader’s competence?**

The way in which the leaders in an organization determine and announce the direction of activities and the organization’s strategic priorities is the basis of a leader’s competence.

The work of the leader who organizes the organization’s future by way of defining and declaring the mission of the organization which ensues from the vision, the set (ethical) values and corporation behavior is a reflection of developed leader competences through education and learning and the application of knowledge and skills in practice.

A successful leader is focused on the vision, mission and results. S/he formulates the plan of activities and the work of the organization by putting together the strategy process. At the same time, s/he sets challenges and defines the path and the way of reaching the goal,
that is, securing the desired level of the organization’s performance and the organizational activities which create additional value and furthermore, the leader acquaints the employees with this, providing an answer to the question, “How to work?”

Leaders must be aware of the scientific truth – that strategy without tactics is the most dangerous way to success, and tactics without strategy is only noise before the fall.

Management will make the strategy a continual process with changes and measuring the effect with activities and results. The results are numerous abilities, knowledge, skills, and the character traits of the leaders. The system of measuring the performance is in the function of the assessment and valorization of success which should secure a real picture of the strategy which ensues from the mission and the vision, as well as the environment - all reflecting a certain organizational context and aims of the organization. Some abilities are partly inherited, while the largest numbers are developed by studying and education.

An organization should solve problems by making itself more adaptable and more flexible for changes in accordance with the needs of socio-economic development, defining the structure which will carry out the strategic plan and program. The strength is in the ability to unite authorities, power and influence and in this way to progress in the aim of quality work and development. The art is to uncover and study a climate of mutual trust and respect, to discuss and apply the appropriate solutions, while the personal role of the leader is to stimulate creativity and innovation.

Integrity, social responsibility and an ethical performance of the leader’s personality have not been built or sustained on rational value systems due to the fact that value systems very quickly change in contemporary societies via globalization processes and through the burden of contemporary psychological, sociological, culturological and economic deviations and through the application of the newest technical and technological achievements (whereupon it is no longer enough to know just one foreign language or have basic knowledge of IT technology). There is an increasing ruling of knowledge, business communication skills, the psychological phenomena of personalities and adapting to changes. Thus, educated leaders have opted for the so-called “interpretative modalities of convictions, values, norms and presumptions of sustainable development.” They have proved to be more adept in adapting to uncertainty (external and internal changes within the organization) and processes of integration. In an organizational culture, the building of positive emotions in the contending of employees is the most effective approach in building a necessary level of empathy and trust which then becomes the main strength with which the leader can establish an integral value system.

Management and leadership

In an increasingly more complex and changeable environment, integration and competence of managers and leaders is especially relevant. While management is involved with overcoming the complexity of changes, the leader is involved with overcoming changes (Kotter, 1990). Leadership creates a vision (an achievable vision of the future) and a strategy (logic on how to realize the vision), while management creates plans (stages and time for applying strategies) and activities (turning the plan into activities). Thus, leaders and managers differ according to their roles and tasks. Results show (among other things) that managers are rational, analytical, persistent, thoughtful, authoritative, appear stabilizing and have a position of power, while leaders are visionaries, creative, motivational, flexible, innovative, researchers, and they initiate changes and have personal power (Daft, 2006). Martin (2015) in his paper How to build global leaders claims that “High-performance
organizations are more likely to define leaders based on influence rather than authority. They define influence by the ability to persuade others to consider or adopt a point of view and the ability to obtain a positive action from others” (Martin, 2015, p. 32).

In the devising and viewing of competence for contemporary management (management and leadership), we started from “a functional package of knowledge, skills, opinions, traits and abilities,” as a synergy of everything which is jointly determined by learning – education. The “functional package of competences” includes the following:

- technical abilities (knowledge of the methods, processes, procedures and techniques for carrying out some specialized activities, knowledge about a (specific) organization and skills for using relevant tools and equipment);
- interpersonal abilities (knowledge of human behavior and interpersonal processes, ability to understand emotions, opinion and motivations of others, the ability to communicate, ability/skills of establishing cooperation);
- conceptual abilities (the ability to analyze, logical thinking, creativity, inductive and deductive concluding).

Lately, this model of competence has been joined by some additional competences, especially social intelligence, systematic thinking, meta-cognition or the ability of learning and emotional intelligence (more in: Goleman, 1995; Yukl, 2006). The mental capacity of a leader comprises more than just cognitive abilities (logical deduction, perceptive cognition, memorizing important bits of knowledge), but also the ability to emotionally experience a significant amount of life situations (Milovanović et al., 2015). Contemporary management integrates managerial and leader competence. Thus, the competence of managers is based on four (areas) of competence groups:

- cognitive (the ability to analyze information and experience, and based on this, to create a concept, and then a choice and decision-making);
- motivational (ability to motivate, cooperate, create and sustain a positive climate in an organization);
- leader (skills of decision-making, presentation, communication);
- competence of achievement (orientation towards results which are achieved by setting aims, a pro-active orientation which implies an implementing of ideas and strategy).

One of the most important competences of managers can be expressed by the saying “to discern, to know how, and to wish to constantly learn.” Education and training have a large role in human development by teaching people to improve themselves and actively participate in building a nation (Radović Marković et al., 2012). Learning how to learn, self awareness – awareness of our strengths and weaknesses, as well as abilities of introspective analysis of one’s own cognitive processes and seeking a way to improve these processes are all important (Yukl, 2006).

With globalization and thereby with scientific and the technological development and social changes which ensue, also increasing is the significance and value of competences which relate to ideas (cognitive, conceptual, ability of systematic thinking), abilities of emotional and social intelligence, skills of motivating and interpersonal relations, and the ability and skill of (self)learning, that is, continuing education.
The role of education and learning in “creating” a leader

The structure and types of leadership competences provide an answer to the eternal question – are leaders born or “made”? A leader is certainly always made, by using the inherent “leadership capital” as starting point. The role of education in this process of “creation” is extremely important. Inherited or partially inherited abilities will not become leadership competences without the necessary knowledge and skills. The educational process in developing leadership competences points to the need to research all segments of this process (programs, models, types, methods, effects, etc.) in order to predict the quality of the end result.

Employee education and training is an ongoing process and one of the most frequent types of seminars are those that aim to develop leadership skills, especially in view of communication, decision making, change management, etc. (Alibabić, 2008a). Raising awareness, training and qualification of employees are the key factors in market competition (Radović Marković et al., 2012).

Pioneering research conducted by McClelland and his team in Harvard in the 1960s and 1970s of the last century showed for the first time that the skills required to turn people into successful entrepreneurs can, in fact, be developed. McClelland and his team developed competency-based training programs whose aim was to foster the desire to succeed. Due to this training, many companies became successful owing to the fact that at the helm there were those who had undergone training, focusing on achievement (Goleman et al., 2006).

The importance of successful leadership, the role of learning and education in developing leadership competences represent challenges whose answers can be found through researching types of education, programs and relevant factors in the process of developing leadership competences. In order to arrive at a comprehensive offer of competence-oriented training programs we looked at the following:

- the results of the analysis of the current offer of leadership competences development programs on a (visible) “education market”;
- the results of the evaluation of importance, i.e. rating the relevance of different training approaches toward developing leadership competences;
- the results of research on participation levels (actual and desired) in forms/types of education and learning aimed at developing leadership competences.

The leadership competences development programs available within the framework of formal education in Serbia:

- Leadership competences development programs for undergraduates. An analysis of results for individual management oriented subjects show that the available programs are aimed at acquiring knowledge (necessary for a leader), whereas their end result does not display elements of typical leadership competences;
- Within the framework of Master’s, Specialized and Doctoral studies there are programs (subjects/courses) that aim to develop leadership competences.

Leadership competences development programs within the framework of informal education:

- Programs that are part of strategic development plans of companies/organizations are implemented either in-house or away from work and take different forms, mainly through seminars, lectures and workshops;
Leadership competences development programs as part of the activities conducted by a number of government and non-governmental organizations and foundations (local and international);

Programs offered (provided by) specialized training agencies;

Leadership competences development programs as part of continuous professional development offered by institutions of higher education.

When it comes to developing leadership competences, research results clearly indicate that self-directed learning projects are an important way forward. In addition, the phenomenon of self-directed learning is increasingly becoming associated with professional development (Pedler et al., 1990), and research conducted by Kolb, Boyatzis and Winter (at the MIT Sloan School of Management in Cambridge, MA) shows that self-directed learning can make a significant improvement in people skills (Goleman et al., 2006).

The results of the importance assessment, i.e. the contribution (percentage) of individual educational paths in achieving their competence are shown in Table 1.

<table>
<thead>
<tr>
<th>Educational path</th>
<th>Share in overall competence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing leadership competences during undergraduate studies</td>
<td>8 %</td>
</tr>
<tr>
<td>Developing leadership competences during graduate studies</td>
<td>12 %</td>
</tr>
<tr>
<td>Developing leadership competences through informal education</td>
<td>41 %</td>
</tr>
<tr>
<td>Developing leadership competences through experience</td>
<td>25 %</td>
</tr>
<tr>
<td>Developing leadership competences through self-directed learning</td>
<td>14 %</td>
</tr>
<tr>
<td>Overall competence</td>
<td>100 %</td>
</tr>
</tbody>
</table>

The percentages in Table 1 show that participants in the study believe that their leadership competences were mainly developed or acquired (41%) through informal education followed by experience (25%). They believe that they have learned the least during their undergraduate studies (8%) which only confirms the results of an analysis of a number of undergraduate courses at various faculties, including those centered on economy and management. Such results come as no surprise taking into account the fact that the very concept of the majority of undergraduate courses on offer is aimed at improving knowledge rather than skills. Due to the fact that a number of post-graduate courses (specialized and Master’s) aim for an outcome that often involves leadership skills, it was expected that post-graduate courses would play a more important role in developing leadership competences. However, the result obtained was only 12% which ranked postgraduate studies as penultimate on our list of educational paths for developing leadership competences. On the other hand, it is encouraging that self-directed learning (self-education) has been recognized and indeed uses as a path towards developing leadership competences, especially in view of the fact that this particular path is especially suited to adults who are aware of their educational needs. The interpretation of results obtained, and in absence of precise research methods, can only be hypothetical. The educational offer that is accessible to working people (seminars and workshops which can be held at times suitable for people who hold jobs), could be the reason behind a higher level of participation in this type of program and the importance they have in developing leadership competences of those participating in our study.

The research results of the level of participation of managers in different types of developing leadership competences (actual and desired participation), have led to important questions in the area of developing leadership competences but could also pave the way towards finding the necessary solutions. Table 2 shows the levels of participation in different types of developing leadership skills and their desirability.
Table 2: Actual and desired participation (frequency and percentages – 200 participants).

<table>
<thead>
<tr>
<th>Types</th>
<th>Actual participation</th>
<th>Desired participation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Master studies</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Specialist studies</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>Doctoral studies</td>
<td>3</td>
<td>0.5</td>
</tr>
<tr>
<td>Seminars</td>
<td>552</td>
<td>92</td>
</tr>
<tr>
<td>Lectures</td>
<td>210</td>
<td>35</td>
</tr>
<tr>
<td>Study visits</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>Self-directed learning</td>
<td>168</td>
<td>28</td>
</tr>
<tr>
<td>Action learning</td>
<td>12</td>
<td>2</td>
</tr>
</tbody>
</table>

The table shows the disproportion between actual and desired participation. Only a small number of participants were involved in formal educational programs, as action learning is desirable and study visits are highly desirable and spending time and learning within the framework of a successful company/organization is perceived as a great professional challenge. More than 50% of our participants would opt for specialized programs if the opportunity presented itself. Seeing as specialized study programs are competence-based, intensive and practice-oriented, managers should be given a better opportunity for taking advantage of these types of programs.

**Conclusion**

According to empirical research, the structure of leadership competence is made up of a number of different competences, i.e. abilities and personality types, skills and knowledge. Some of the abilities are partially inherited but the greatest number of competences is acquired and developed through learning and education.

The educational paths for developing leadership competences are mainly found in different types of informal education. The questions raised in this paper continue to present a challenge for researchers. Leadership competences are a “fluctuating variable” similar to the demands of a typical work environment, business models and strategies are continually changing. This is the reason why education and learning in developing leadership competences is a life-long process and one that needs to be managed in order to be made as efficient as possible. What should be looked at are the following: the characteristics of a leadership competence model – the limitations and advantages of the empirical model; selection criteria (and characteristics) of the model used for researching educational needs for leaders (and competence levels) – classical models, expert evaluations, self-evaluation, “360 degree” evaluations, etc.; the characteristics and contribution of a particular type of leader training and education; the features of competence-based educational programs; standardization, accreditation and licensing processes within the framework of formal and informal leader training; the effects of education and learning on changes in leadership practices.
References


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CULTURAL INTELLIGENCE AND NETWORK ORGANIZATIONS IN SOCIETY: CASE OF TEHRAN NEIGHBORHOOD COUNCILS

Yashar Salamzadeh\(^9\), Aidin Salamzadeh\(^10\), Mirjana Radovic Markovic\(^11\)

Abstract

Network communications is one of the modern ideas in the field of organizational behavior. On the other hand, the ability to communicate with employees and understand the cultural differences between them in a multicultural environment is one of the key skills that managers and employees need them in the nowadays organizations. These skills are introduced as cultural intelligence in organizations that have ability to respond to many challenges in multicultural environments. This article was aimed to analysis the relationship between cultural intelligence and network communication. These questionnaires were distributed between 134 members at the Tehran neighborhood councils. In order to analyzing data and concluding results, SPSS, and then Pearson correlation test were used. The research was done based on structural equation modeling (SEM). The result indicated that there was significant positive relationship between cultural intelligence and network communication. Also there was significant positive relationship between each dimension of cultural intelligence and network communication. Findings show that cultural intelligence is a basic factor in network communication and confirm the main hypothesis of this study which represents the existence of a positive and meaningful relation between cultural intelligence and network communication. Furthermore, the results show that considering this kind of intelligence, especially in network organizations which has a high ethnic and cultural variety, could be very useful for improve employees and managers communications.

KEYWORDS: cultural intelligence, communication, network organizations, network communication

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UDC: 005.336.5:005.57

005.72:004

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Introduction

Nowadays most of companies in the twenty first century are multicultural. This results in several dyadic relationships where the cultures of the members differ significantly. The difference may be in: (i) language, (ii) ethnicity, (iii) religion, (iv) politics, (v) social class, etc. (Triandis, 2006; Gorji, Ghareseflo, 2011; Radovic-Markovic et al., 2014; Kanten, 2014). Cultural intelligence (CI) is conceptualized as four different intelligences residing within an individual, which are: (i) meta-cognitive, (ii) cognitive, (iii) motivational, and (iv) behavioral (Earley, Ang, 2003; Keung, Rockinson-Szapkiw, 2013). Meta-cognitive CI reflects the processes individuals use to gain and comprehend cultural knowledge. Cognitive CI is general knowledge and knowledge structures about culture. Motivational CI is amount and direction of energy applied towards learning about and functioning in cross-cultural situations. Finally, behavioral CI is the capability to exhibit appropriate verbal and non-verbal actions when interacting with people from different cultures (Ang et al., 2006; Alidoust and Homaei, 2012). Network organizations could bring individuals together who were previously unknown to one another (Fox, 2008). Moreover, network organizations can involve individuals who have different cultures, first languages, social concerns, genders, personality types, or even work experiences. Moreover, CI in network organizations especially on communications is so effective and significant. Network organizations are characterized by flexibility (Nohria, Eccles, 2000), decentralization (Arquilla, Ronfeldt, 2001), differentiation (Baker, 1992), diversity (Ibarra, 1992), lateral cross-functional ties (Baker, 1992) and redundancy (Ronfeldt, Arquilla, 2001).

Moreover, social entities and communities are of paramount importance. One could consider that in today’s societies, most of the social dilemmas are handled by social communities. In Iran, the history of social activities goes back to thousands of years ago (Daryani et al., 2011; Salazmadeh et al., 2011a, b, c, 2013). But, today, neighborhood councils play a very significant role in different cities. Then, the aim of this paper is surveying the effect of CI on communication in Tehran neighborhood councils with introducing the concepts of CI based on the theoretical overview and empirical studies. For this purpose, the researchers proposed one main hypothesis and four sub-hypotheses. Thus, the findings are discussed, and the paper concludes with some remarks and directions for future research.

Literature review

Cultural intelligence (CI)

CI or CI has a variety of meanings and definitions which could be seen as complementary to one another. CI is defined as an individual’s capability to function and manage effectively in culturally diverse settings or environments (Ang et al., 2007; Radovic-Markovic, et.al.2014). One of the most important challenges of managers and employee, at international environments, is that they could become sure to realize different views completely. Offerman and Phan (2002) defined CI as a “intelligence at environment” or the ability to operate within and across a variety of culturally diverse environments, in which individuals are prone to face a variety of values, customs, (pre)assumptions and expectations that are essentially different from their own (Moody, 2007).
CI is the ability and capability of one individual in effective performance at different positions in different cultures. It prepares insights about individual’s abilities and capabilities to overcome multi-cultural situations, involving at inter-cultural trades and performance at different working groups (Lugo, 2007). As mentioned earlier, CI is composed of four parts: (i) meta-cognition, (ii) cognition, (iii) motivation, and (iv) behavior. High level individuals use all these four parts and are more prone to succeed (Ang et al., 2007; Earley, Peterson, 2004; Ng, Earley, 2006). According to these four elements, the following propositions are proposed.

**Meta-cognition**

Meta-cognition is defined as an individual’s knowledge or control over cognitions that leads to deep information processing (Ford et al., 1998; Ang et al., 2007). It is focused on the ability to process information stored in memory in order to guide attention, make sense, process the knowledge, as well as the individual’s goals, emotions, motives, and external stimuli. It is not sufficient to simply know oneself in order to obtain high level of meta-cognition; individuals must be able to be flexible in their self-concept, and have the ability to integrate new components into their self-concept (Earley, Ang, 2003; Thomas, 2006).

**H1:** Meta-cognition has a significant relationship with communications of Tehran Neighborhood councils

**Cognition**

Cognition refers to application of self knowledge, the social environment, and processing information (Earley, Ang, 2003). Basically, it involves the general knowledge about the structures of a culture (Earley and Ang, 2003; Ng and Earley, 2004). Cognition is information gained from experience and education that includes specific practices, norms, customs, and conventions, including universal facets of culture as well as culture-specific nuances (Ang et al., 2007).

**H2:** Cognition indicator has a significant relationship with communications of Tehran Neighborhood councils.

**Motivation**

The motivation aspect of CI involves a person’s interest to learn and function in cross-cultural situations with different cultures (Ang et al., 2006; 2007). This facet of CI includes three primary motivators: (i) enhancement (one’s will to feel good about himself/herself), (ii) growth (one’s will to challenge and improve himself/herself), and (iii) continuity (desire for continuity and predictability in one’s life) (Earley et al., 2003, 2006; Ng and Earley, 2004).

**H3:** Motivation has a significant relationship with communications of Tehran Neighborhood councils
Behavior

As mentioned earlier, the final facet of CI is behavior, or the action aspect of the construct. It includes a person’s capability to exhibit suitable verbal and non-verbal behaviors when he/she interacts with others from different cultures (Ang et al., 2006, 2007; Earley et. al., 2006), and to normally interact proficiently with individuals from diverse cultural backgrounds (Thomas, 2006). This may also include the inhibition of displaying certain behaviors (Earley and Ang, 2003), and, in some cases, the recognition that not interacting may be appropriate (Thomas, 2006).

H4: Behavior has a significant relationship with communications of Tehran Neighborhood councils.

Network Organizations and Communications

Network organizations, which are different from previous types of organizations in several respects, are collections of organizations with links that tie them to one another (Snow, Miles, 1992). There are abundant variations on the network organizational forms such as strategic alliances, joint partnerships, research and development consortia, cartels, and large international projects. In the 1980s, plans of many organizations used to depend mostly upon the decisions of other organizations; they noticed that their problems are bigger than they can solve them by themselves. Also they became aware that their attempts to handle environmental contingencies often create unexpected problems (Gray, 1985; Fox, 2008). Furthermore, increased environmental complexity and turbulence led to organizations expanding their boundary-spanning activities in order to include collaboration with other organizations and integrating entities (Buono, 1997). Relationships among organizations have been established since organizations hope to decrease elements of risk and uncertainty by joining other players in a typical market, and to improve their resource level, including both material resources and the information they use to guide their decisions and actions (Powell, 1987).

This was mainly discussed in theories such as Resource Dependence Theory (RDT), and traditional theories of power, which claim that resources are available in an environment and any organization should interact with others in order to gain power, accessing the resources (Davis, Cobb, 2010). Recently, it has been discussed that relationships among organizations could also help them share vital knowledge, which is mainly considered as intellectual capital. This type of knowledge sharing can be termed collaborative commerce, which is normally shared between groups of network organizations. Another dilemma is team work among the individuals working in different organizations of a network and the organizations themselves, which lead their internal information systems to be opened, and improves innovation level (Rockart, 1988; Salamzadeh et al., 2015). These relationships are, basically, used to construct mutual public confidence among organizations themselves and their customers (Stuart, 2000).

The relationships among these network organizations are complex and volatile. Then, one might believe that deriving a universal model of network communications is impossible, or even hard to achieve. A model which elaborates the relationships, communications, and highlights the relevant properties (e.g. see, Oberg,Walgenbach, 2008; Maglajlic, Helic, 2012). Moreover, it might seem unfeasible to make abstractions of micro level interactions to comprehend macro tendencies and directions. Nevertheless, different levels of complexity are considerable. Krackhardt (1994) argues that there are four potential constraints on
communication and other networks, which are as follows: (i) *The Law of N-Squared*: in a network organization, the number of possible links raises geometrically with the number of individuals, (ii) *The Law of Propinquity*: the probability of two people communicating is inversely proportional to the distance between them, (iii) *The Iron Law of Oligarchy*: the propensity of social systems, even democratic ones, to end up under the control of a few individuals, and (iv) *The problem of over embeddedness*: habitually individuals are likely to seek out their old standbys, the individuals they have learnt to trust, the ones they depend on, to deal with new problems, even though they might not be the relevant ones (Kim et al., 2006; Fox, 2008; Wellman et al., 2014). In sum, in the existing literature on network organizations, quite a few measures are discussed to differentiate such organizations from bureaucratic ones. Regarding the network organizations, the following hypotheses are proposed:

**H5:** Roles of individuals in network has a significant relationship with CI.

**H6:** Individuals have a significant relationship with CI.

**H7:** Dyads have a significant relationship with CI.

**H8:** The whole network has a significant relationship with CI.

**Methodology**

The research model presents critical factors defining cultural intelligence. After interviews with experts of the field, and reviewing the literature, the model is designed (Figure 1). Then a field research is conducted and the required data was gathered from a survey, in which members of Tehran neighborhood councils were the main respondents. Table 1 shows the dimensions and indicators of the study. The population included the members of Tehran neighborhood councils, and thus, random sampling technique was used to determine the required number of samples (n=136). Validity of the model was proved through expert validity. For this purpose, professors, experts, specialist, and experts of the neighborhood council reviewed the questions. For assessing the internal consistency of the questionnaire, Cronbach’s Alpha was used that is obtained 0.85.

![Figure 1: Research model](image-url)
Table 1: Dimensions and indicators of communication (source: Albrecht, Bach, 1997; Monge, Contractor, 2001).

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roles of individuals in network</td>
<td>Group members; isolate; bridge, liaison, star, gate keeper</td>
</tr>
<tr>
<td>Dimensions of analysis for individuals</td>
<td>Centrality; connectedness; diversity; accessibility</td>
</tr>
<tr>
<td>Dimensions of analysis for dyads</td>
<td>Strength; symmetry; direction; stability; multiplexity; openness</td>
</tr>
<tr>
<td>Dimensions of analysis for whole network</td>
<td>Size; heterogeneity; mode of communication; density; clustering</td>
</tr>
<tr>
<td>Meta- Cognitive</td>
<td>Planning, Awareness, Checking</td>
</tr>
<tr>
<td>Cognitive</td>
<td>Culture-General Knowledge, Context-Specific Knowledge</td>
</tr>
<tr>
<td>Motivational</td>
<td>Intrinsic interest, Extrinsic interest, Self-efficacy to adjust</td>
</tr>
<tr>
<td>Behavioral</td>
<td>Verbal behavior, Non-verbal behavior, Speech acts</td>
</tr>
</tbody>
</table>

Results

According to demographic data, more than 69 percent of respondents were male. More information is shown in table 2. Descriptive statistic (frequency, mean, standard deviation) is shown in table 3. According to research data from table 3, the factors of Meta-cognitive, cognitive, motivational and behavioral had the highest scores respectively (3.78, 3.6, 3.57, and 3.56) in Tehran neighborhood councils.

Table 2: Demographic data of population

<table>
<thead>
<tr>
<th>Sex</th>
<th>Number</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>93</td>
<td>69</td>
</tr>
<tr>
<td>Female</td>
<td>41</td>
<td>31</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th>Number</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school</td>
<td>21</td>
<td>15</td>
</tr>
<tr>
<td>Graduate</td>
<td>32</td>
<td>24</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>55</td>
<td>42</td>
</tr>
<tr>
<td>Master</td>
<td>19</td>
<td>14</td>
</tr>
<tr>
<td>PhD</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>
### Table 3: Measures of variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Frequency</th>
<th>Average</th>
<th>Standard Deviation</th>
<th>Coefficient of variation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meta-cognitive</strong></td>
<td>I develop action plans before interacting with people from a different culture</td>
<td>134</td>
<td>4</td>
<td>1.062</td>
<td>0.265</td>
</tr>
<tr>
<td></td>
<td>I am aware of how my culture influences my interactions with people from different cultures</td>
<td>134</td>
<td>4</td>
<td>1.053</td>
<td>0.263</td>
</tr>
<tr>
<td></td>
<td>I adjust my understanding of a culture while I interact with people from that culture</td>
<td>134</td>
<td>4.01</td>
<td>1.004</td>
<td>0.25</td>
</tr>
<tr>
<td><strong>Cognitive</strong></td>
<td>I can describe the different cultural value frameworks that explain behaviors around the world</td>
<td>134</td>
<td>3.93</td>
<td>1.092</td>
<td>0.277</td>
</tr>
<tr>
<td></td>
<td>I can describe the ways that leadership styles differ across cultural settings</td>
<td>134</td>
<td>3.97</td>
<td>1.057</td>
<td>0.395</td>
</tr>
<tr>
<td><strong>Motivational</strong></td>
<td>I truly enjoy interacting with people from different cultures</td>
<td>134</td>
<td>3.96</td>
<td>1.151</td>
<td>0.29</td>
</tr>
<tr>
<td></td>
<td>I value the status I would gain from living or working in a different culture</td>
<td>134</td>
<td>4</td>
<td>1.038</td>
<td>0.259</td>
</tr>
<tr>
<td></td>
<td>I am confident that I can persist in coping with living conditions in different cultures</td>
<td>134</td>
<td>4</td>
<td>1.024</td>
<td>0.265</td>
</tr>
<tr>
<td><strong>Behavioral</strong></td>
<td>I change my use of pause and silence to suit different cultural situations</td>
<td>134</td>
<td>4</td>
<td>1.048</td>
<td>0.262</td>
</tr>
<tr>
<td></td>
<td>I modify how close or far apart I stand when interacting with people from different cultures</td>
<td>134</td>
<td>3.99</td>
<td>1.070</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td>I modify the way I disagree with others to fit the cultural setting</td>
<td>134</td>
<td>4</td>
<td>1.034</td>
<td>0.258</td>
</tr>
</tbody>
</table>
Table 4: Variable means

<table>
<thead>
<tr>
<th>Rank</th>
<th>Dimension</th>
<th>Amplitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Motivational</td>
<td>3.78</td>
</tr>
<tr>
<td>3</td>
<td>Meta-cognitive</td>
<td>3.6</td>
</tr>
<tr>
<td>4</td>
<td>Cognitive</td>
<td>3.57</td>
</tr>
<tr>
<td>5</td>
<td>Behavioral</td>
<td>3.56</td>
</tr>
</tbody>
</table>

As shown in table 5, effect of volume external communication had the highest rank with mean rank of 4.3 and effect of Volume external communication had the lowest rank with mean rank of 3.49 mean distribution of opinions of respondents to dimensions of cultural intelligence and questions of research in turn are shown in table 5 and 6. In order to determine the relationship between research variables, the Pearson correlation test was utilized. As indicated in table 6, there was a direct and significant relationship between Meta-cognition and communications (r=0.81), and Cognition with communications (r=0.41), and Motivation with communications (r=0.368) and Behavior with communications (r=0.726). Also, there was a direct and significant relationship between Roles of individuals in network with CI (r=0.311) and Dimensions of analysis for individuals with CI (r=0.728) and Dimensions of analysis for dyads with CI (r= 0.468) and Dimensions of analysis for whole network with CI (r= 0.582).

Table 5: Mean distribution of opinions of respondents to questions of research

<table>
<thead>
<tr>
<th>Rank</th>
<th>No. of question</th>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21</td>
<td>Effect of Volume external communication, on cultural attitude of staff</td>
<td>4.3</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>Non-verbal communication in other cultures</td>
<td>3.77</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
<td>Type of communication within the organization</td>
<td>3.64</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td>Effect of Responsibilities and roles individuals in of organizational communication, on cultural perceptions</td>
<td>3.62</td>
</tr>
<tr>
<td>5</td>
<td>19</td>
<td>Effect the size and number of members, on cultural attitudes of staff</td>
<td>3.61</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>Change in verbal behavior</td>
<td>3.59</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
<td>Changes in speaking rate appropriate to different cultural situations</td>
<td>3.58</td>
</tr>
<tr>
<td>8</td>
<td>18</td>
<td>Effect of communication with the same organization on reducing or increasing cultural understanding staff</td>
<td>3.58</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>Change in Nonverbal behavior</td>
<td>3.56</td>
</tr>
<tr>
<td>10</td>
<td>22</td>
<td>Effect of size and the number of members in the organization on the employees' motivation</td>
<td>3.56</td>
</tr>
<tr>
<td>11</td>
<td>23</td>
<td>Effect of Lack Relations with similar organizations in reducing or increasing employees' motivation</td>
<td>3.56</td>
</tr>
<tr>
<td>12</td>
<td>16</td>
<td>Effect of Variety tasks and roles in the organization on the culture of the organization</td>
<td>3.55</td>
</tr>
<tr>
<td>13</td>
<td>17</td>
<td>Effect of Lack communication with similar organizations in reducing or increasing cultural perception staff</td>
<td>3.55</td>
</tr>
<tr>
<td>14</td>
<td>9</td>
<td>use of hesitated and quiet suit different cultural situations</td>
<td>3.54</td>
</tr>
<tr>
<td>15</td>
<td>11</td>
<td>interested in communicating with people from different cultures</td>
<td>3.53</td>
</tr>
<tr>
<td>16</td>
<td>13</td>
<td>Effect of organizational status and cultural perception</td>
<td>3.51</td>
</tr>
<tr>
<td>17</td>
<td>12</td>
<td>feedback of communicating with people from different cultures</td>
<td>3.5</td>
</tr>
<tr>
<td>18</td>
<td>20</td>
<td>effect of Volume external communication, on cultural attitude of staff</td>
<td>3.49</td>
</tr>
</tbody>
</table>
A total of 23 questions were asked about the relationship between cultural intelligence and network communication. The respondents were asked to select their responses by choosing the number that best applied to them. The options were presented on a 5 point Likert scale with 1= very low, 2= low, 3= average, 4= high, 5= too high. The questions for cultural intelligence were divided into four sections: meta-cognitive, cognitive, motivation and behavioral and questions for cultural intelligence were divided into four sections: Roles of individuals in network, Dimensions of analysis for individuals, Dimensions of analysis for dyads, Dimensions of analysis for whole network. Of the eight sections, it may be observed that the mean scores ranged between 3.49 and 4.3. This suggests that the respondents’ scores on average were between being average and too high with statements of items. The question with the highest mean score asked "Non effect of Volume external communication, on cultural attitude of staff" (Q21). "effect of Volume external communication, on cultural attitude of staff" (Q22) had the lowest mean score.

Table 6 summarizes the results of our survey that all of hypotheses are accepted with level of confidence %95 and coefficient of correlation between 0.311 for H5 to 0.808 for H1. This research has 8 hypotheses (hypotheses numbers 1 to 4 are about relationships between variables of “cultural intelligence” and “communications”, while hypotheses number 5 to 8 are about the relationships between “network communications” and “cultural intelligence”. As shown in table 6, all the hypotheses are accepted.

Table 6: Summary of results

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>level of confidence</th>
<th>Sig</th>
<th>coefficient of correlation</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Meta-cognition has a significant relationship with communications of Tehran Neighborhood councils</td>
<td>0.95</td>
<td>0.00</td>
<td>0.808</td>
<td>Accepted</td>
</tr>
<tr>
<td>H2: Cognition indicator has a significant relationship with communications of Tehran Neighborhood councils</td>
<td>0.95</td>
<td>0.00</td>
<td>0.41</td>
<td>Accepted</td>
</tr>
<tr>
<td>H3: Motivation has a significant relationship with communications of Tehran Neighborhood councils</td>
<td>0.95</td>
<td>0.00</td>
<td>0.368</td>
<td>Accepted</td>
</tr>
<tr>
<td>H4: Behavior has a significant relationship with communications of Tehran Neighborhood councils</td>
<td>0.95</td>
<td>0.00</td>
<td>0.726</td>
<td>Accepted</td>
</tr>
<tr>
<td>H5: Roles of individuals in network has a significant relationship with CI</td>
<td>0.95</td>
<td>0.00</td>
<td>0.311</td>
<td>Accepted</td>
</tr>
<tr>
<td>H6: Dimensions of analysis for individuals has a significant relationship with CI</td>
<td>0.95</td>
<td>0.00</td>
<td>0.728</td>
<td>Accepted</td>
</tr>
<tr>
<td>H7: Dimensions of analysis for dyads has a significant relationship with CI</td>
<td>0.95</td>
<td>0.00</td>
<td>0.468</td>
<td>Accepted</td>
</tr>
<tr>
<td>H8: Dimensions of analysis for whole network has a significant relationship with CI</td>
<td>0.95</td>
<td>0.00</td>
<td>0.582</td>
<td>Accepted</td>
</tr>
</tbody>
</table>
Table 7: Relationship between dimensions of cultural intelligence and network communication

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Meta cognitive</th>
<th>Cognitive</th>
<th>Motivational</th>
<th>Behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roles of individuals in network</td>
<td>0.098</td>
<td>0.276</td>
<td>0.287</td>
<td>0.142</td>
</tr>
<tr>
<td>Dimensions of analysis for individuals</td>
<td>0.254</td>
<td>0.187</td>
<td>0.216</td>
<td>0.376</td>
</tr>
<tr>
<td>Dimensions of analysis for dyads</td>
<td>0.210</td>
<td>0.198</td>
<td>0.216</td>
<td>0.376</td>
</tr>
<tr>
<td>Dimensions of analysis for whole network</td>
<td>0.181</td>
<td>0.098</td>
<td>0.154</td>
<td>0.186</td>
</tr>
</tbody>
</table>

The means, standard deviations and correlations among the variables in the study are presented in Table 7. Correlations in general reflect the expected relationships between the components of cultural intelligence and network communications. Among dimensions of cultural intelligence, behavioral has highest correlation with dimensions of network communications (Dimensions of analysis for individuals, Dimensions of analysis for dyads). Also Meta cognitive has lower correlation (Roles of individuals in network, Dimensions of analysis for whole network). However cognitive dimension has low correlation with Dimensions of analysis for whole network (0.098), looking at the research hypothesis about the correlations among various dimensions of cultural intelligence we can get all dimensions of CI has significant relation with dimensions of network communications.

Conclusion

In this paper, the relation of cultural intelligence and network communications was analyzed. Findings show that cultural intelligence is a significant factor in shaping network communications. Confirming the main hypothesis of this study also represents the existence of a positive and meaningful relation between cultural intelligence and network communications. Moreover, results of Pearson’s correlation test indicate that there is a positive relationship between the cultural intelligence as an independent variable and network communications (dependent variable) in Tehran neighborhood councils. Then, by increasing the cultural Intelligence of members, members’ communications will be increased and cultural intelligence is an excellent criterion to be taken into account for the members and managers communications. Moreover, motivational CI and the behavioral CI are highly correlated with communication indicators. Also, the results show that members of Tehran neighborhood councils need to acquire and improve their cultural intelligence human skills in order to fulfill their extra-organizational tasks and increase their communications with costumers or other members.

By the way, findings of this research are in line with similar research works which show a positive relationship between CI and networks, such as Monge and Contractor (2001), Earley et al. (2006), Lugo (2007), etc. Furthermore, in organizations which have a high cultural variety and complexity, cultural intelligence helps the organization managers compromise with the different cultural and value qualities and characteristics of their members such as Tehran neighborhood councils. In active organizations in multicultural environments, cultural intelligence beside operational skills could guarantee the organization success, so choosing, educating, and evaluating the managers in such organizations shouldn't be limited to technical and scientific abilities, and the ability to communicate efficiently and specially cultural intelligence should be considered as an effective criterion in employing managers in such organizations. Hiring managers and employees with high cultural intelligence in organizations, it would be prevented to load reinforcing cultural intelligence costs (Ang et al., 2006, 119).
Also the results of this study show that cultural intelligence could be the answer to many problems and issues in different socio-cultural contexts. Considering this kind of intelligence especially in network organizations which has a high ethnic and cultural variety could be very useful for improving employee-managers communications. In addition, evaluating and advancing cultural intelligence in organizations, while keeping the present cultural capitals in organizations, cause improving their communications in network environments. Thus to promote this kind of intelligence in organizations, some suggestion are presented for managers including self-reviewing of managers' cultural knowledge, increasing awareness regarding cross-cultural interactions, identifying different cultures, respecting other cultures, engaging in other cultures, and paying attention to the possibility of cross-cultural interactions in real conditions.

Reference


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SNOWFLAKE MODEL OF REGIONAL COMPETITIVENESS - EVIDENCE FROM SERBIA

Darko Vukovic, Dusan Markovic, Azra Hanic

Abstract

The competitiveness of the region is ability to be productive and maintain a high standard of living. In this paper, we have created Snowflake model of regional competitiveness considering not only economic and social factors, but also infrastructure, innovations, geo-natural variables, institutional factors, culture and tourism. This model can be applied in any country or group of countries. The model shows the competitiveness of the region in three ways: 1) quantitatively - by the index of regional competitiveness, 2) ranking the region compared to other regions and 3) it possesses visual characteristic - represents snowflake of competitiveness. As part of our analysis, we measured the regions of Serbia. The reason is that Serbia has the largest regional differences in Europe, which was an additional motive to test the model.

KEYWORDS: regional competitiveness, Snowflake model, index of regional competitiveness, factors of regional competitiveness, indicators of regional competitiveness, regional drivers

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332.122

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Introduction

While the Adam Smith presented a Theory of Absolute advantage in his book An Inquiry into the Nature and Causes of The Wealth of Nations (1776) which explains the benefits of international trade and represents one of the earliest theories of the concept of competitiveness, it passed almost 200 years when appeared papers in the scientific literature that analyze regional competitiveness. Regional competitiveness becomes an object of scientific literature since the 1990s, primarily connected with the names of Michael Porter (1990) and Paul Krugman (1991a, 1991b, 1994).

Scientific confrontation of these two authors and their opposite opinions have influenced on the evolving ideas of regional competitiveness. Since then, many authors have analyzed this issue (Cho 1994; Rugman et al. 1998; European Commission 1999; Dunning et al. 1998; Huggins 2003; Martin 2004; Kitson et al. 2004; de Vet et al. 2004; Lengyel 2004; Cho – Moon 2000; Kitson et al. 2008; Snieška and Bruneckienė 2009). But, after more than two decades, two key issues are still discussed: “What is regional competitiveness? How to measure regional competitiveness?” Issues are not simple. Moreover, it turned out that there is no unanimity on this issues.

Each author has its own definition which is similar in nature, but represents different methodologies or viewing angle of competitiveness. Addition to this, the definitions of this concept are also differing according to the level of measurement of competitiveness. The level at which the competition is defined is the most important aspect of this concept (Annoni, Kozovska 2010; Kitson et al. 2004). Therefore, competitiveness is defined on the macro level (OECD 1992, European Commision 2003; Schwab, Porter 2007), micro level (IMD 2000, 2004; Krugman 1996; Powell 2001; Martin et al. 2006), and from The Sixth Periodic Report (European Commission 1999) appears most definitions of competitiveness at the regional level (European Commission 2003; Huggins 2003; Gardiner et al. 2004; Kitson et al. 2004; Bristow, 2005; Meyer, Stamer 2008; Annoni, Kozovska 2010; Vukovic, Wei 2010; Vukovic et. al. 2012).

In this paper we define the competitiveness of the region as ability to be productive and maintain a high standard of living. If we even say that there is a relative consensus about the definition of regional competitiveness, the differences in the opinions of the authors are resulted from the differences in creating a model of regional competitiveness, on one side and/or different selections of factors or drivers of competitiveness, on the other side. Regardless of whether observed regional output as the final result of the measurement of competitiveness (Martin, 2005) or competitiveness is expressed as productivity (Krugman, 1994), almost all models of regional competitiveness are based on the measurement of certain factors.

However, no matter what kind of form has a model of regional competitiveness, studies have shown the following: a) competitiveness cannot be based on measuring only the economic and social factors, it has to be approached with multifactorial measuring (Lengyel, 2003; Kitson et al., 2004; de Vet et al., 2004; Huggins, 2005; Snieška, Bruneckienė, 2009) and b) the creation of a composite index provides the most accurate measurement (Freudenberg, 2003; Wignaraja et al., 2004; IMD, 2004; Giovannini et al., 2005; Saisana et al., 2005; Huggins, 2005; Snieška, Bruneckienė, 2009). Due to the variety of factors, the process of measuring of regional competitiveness is complex and the term competitiveness becomes a difficult and confusing (Snieška, Bruneckienė 2009).

The purpose of this paper is to create a model of regional competitiveness which will include, analyze and measure a number of different of factors, which can determine the competitiveness of certain regions.
The Model

Snowflake model assumes that each region builds its competitive position on the basis of factors which have a competitive advantage. Compared to the most of the models, which are based on economic and social factors, this model includes both formal and informal institutions, infrastructure, innovation, and geographic location. Each of these factors depends on the specific groups of indicators, which may be visually presented in the form of crystals of snowflakes. Snowflakes model comprises the following stages:

1. In the first phase the main factors of regional competitiveness are determined. The model refers only to those factors that have a regional influence. The factors that are characteristic for the national level are not included in the model. For example, macro-economic factors do not affect the inter-regional competition at NUTS 2 or NUTS 3 level. However, when it comes to the region at the level NUTS 1 (which can be applied even to the whole country), then it can take into account national factors. The model is based on eight factors: the economic factor, the social factor, infrastructure, innovations, the human factor, geo-natural factor, informal institutions and the property rights protection, culture and tourism. The model estimates the ability of the region to use the factors of competitiveness in order to build its competitive position among other regions. The number of factors affects the complexity of the model, based on which it provides a measurement of all aspects of regional competitiveness. In this way, the problem of measurements of only economic or social factors is overcome. However, a limitation of this model is exactly the natural structure of the snowflake which has eight points. The model could not have seven or nine factors, because there wouldn’t have a form of snowflake. Therefore, the informal institutions and the protection of property rights are presented in framework of the same factor. However, due to their nature and the connections this restriction is not large. The same is true for the factor of culture and tourism.

2. The second stage refers to the determination of indicators that influence the factors of regional competitiveness and their values. At this stage the key decision is made: Which indicators determining factors of regional competitiveness? All factors of the model are identical for all regions of different countries, but selection of same of indicators for these factors is often not possible. Due to historical and socio-political differences as well as differences in the organization and the priorities of the statistical services of different countries, some indicators are not measured or can be measured by indicators which are similar to those from Snowflake model. Bearing this in mind, the selection of indicators is a complex and difficult task since it requires the selection of substitutes (if there is no data for a particular indicator). If unrepresentative indicators are selected for a specific factor, its measurement may provide misleading information about the competitiveness of the region. This phase represents the qualitative part of development of the model, because it includes a selection of 78 indicators and sub-indicators. Specifically, factors of the regional competitiveness are showed by forty-eight indicators where some of these indicators are disaggregated at thirty sub-indicators (Table 1). In this way, the accuracy of measurement of individual indicators has increased. In contrast to many other models of regional competitiveness that measure only indicators (without their decomposition), the previous feature makes Snowflake model very rare (sub-indicator model). The purpose of measurement sub-indicators is the fact of quality of presentation of specific variables.
Table 1: Factors, indicators and sub-indicators of Snowflake model of regional competitiveness

<table>
<thead>
<tr>
<th>Factors</th>
<th>Indicators and sub-indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>The economic factor</td>
<td>GDP</td>
</tr>
<tr>
<td>(Refers to the economic strength of the region. This factor includes the manufacturing, investment and financial performance of the region, as well as the ability of the region to employ citizens and provide adequate wages)</td>
<td>Financial performance</td>
</tr>
<tr>
<td></td>
<td>The number of companies with net profit</td>
</tr>
<tr>
<td></td>
<td>The number of companies with net loss</td>
</tr>
<tr>
<td></td>
<td>Entrepreneurship</td>
</tr>
<tr>
<td></td>
<td>Number of companies</td>
</tr>
<tr>
<td></td>
<td>Number of entrepreneurs</td>
</tr>
<tr>
<td></td>
<td>Insolvency of companies exceed 180 days</td>
</tr>
<tr>
<td></td>
<td>The spread of clusters</td>
</tr>
<tr>
<td></td>
<td>Employment</td>
</tr>
<tr>
<td></td>
<td>The number of employees</td>
</tr>
<tr>
<td></td>
<td>The number of employees in the economy</td>
</tr>
<tr>
<td>The average net wage</td>
<td></td>
</tr>
<tr>
<td>Investments in capital</td>
<td>Investments in capital assets</td>
</tr>
<tr>
<td></td>
<td>Capital</td>
</tr>
<tr>
<td>The social factor</td>
<td>Number of flats and houses</td>
</tr>
<tr>
<td>(This factor right shows the ability of the region to provide social and health care to its citizens, as well as living space. The social factor also includes the negative impact of corruption, which reduces the quality of life in the region)</td>
<td>The value of residential building</td>
</tr>
<tr>
<td></td>
<td>Corruption</td>
</tr>
<tr>
<td></td>
<td>The prevalence of corruption</td>
</tr>
<tr>
<td></td>
<td>Average bribe in RSD (Republic Serbia Dinar)</td>
</tr>
<tr>
<td></td>
<td>Investments in health and social care</td>
</tr>
<tr>
<td></td>
<td>Budget expenditure in health and social care</td>
</tr>
<tr>
<td></td>
<td>The number of medical personnel</td>
</tr>
<tr>
<td></td>
<td>The number of doctors and dentists</td>
</tr>
<tr>
<td></td>
<td>The number of pharmacists</td>
</tr>
<tr>
<td>The infrastructure factor</td>
<td>Length of the roads</td>
</tr>
<tr>
<td>(The quality of infrastructure affects not only the quality of life of citizens, but also on the adoption of many investment decisions. This factor includes the most vital parts of infrastructure, measuring the quality of roads, railways, air transport and electric power infrastructure)</td>
<td>Investments in infrastructure</td>
</tr>
<tr>
<td></td>
<td>Investments in fuels</td>
</tr>
<tr>
<td></td>
<td>Investment in transportation and storing</td>
</tr>
<tr>
<td></td>
<td>Investment in informations and communications</td>
</tr>
<tr>
<td></td>
<td>A modern road surface</td>
</tr>
<tr>
<td></td>
<td>The quality of railways</td>
</tr>
<tr>
<td></td>
<td>Connectivity of air transport with foreign countries</td>
</tr>
<tr>
<td></td>
<td>The quality of electricity network</td>
</tr>
<tr>
<td>The factor of innovations</td>
<td>Research &amp; Development</td>
</tr>
<tr>
<td>(Innovations are the most important driver of competitiveness in modern economies and their regions and crucial in innovation driven economies. The use of modern technology and the adoption of new knowledge increased productivity and strengthens the competitive position of the region)</td>
<td>The number of organizations engaged in R &amp; D</td>
</tr>
<tr>
<td></td>
<td>Number of employees in R &amp; D</td>
</tr>
<tr>
<td></td>
<td>Expenditures for R &amp; D</td>
</tr>
<tr>
<td></td>
<td>Investment in innovations</td>
</tr>
<tr>
<td></td>
<td>The number of registered patents</td>
</tr>
<tr>
<td></td>
<td>Published research papers</td>
</tr>
<tr>
<td></td>
<td>The use of modern technology</td>
</tr>
<tr>
<td>The human factor</td>
<td>The population of working age (15-64)</td>
</tr>
<tr>
<td>(The quality of human capital depends largely on the age structure of the population and the quality of education. Those regions that have the highest percentage of the working-age population and highly educated people are able to achieve higher productivity and gain a competitive advantage over other regions)</td>
<td>Highly-educated population</td>
</tr>
<tr>
<td></td>
<td>Budgetary expenditures in education</td>
</tr>
<tr>
<td></td>
<td>Investments in education</td>
</tr>
<tr>
<td></td>
<td>Quality of education in schools</td>
</tr>
<tr>
<td></td>
<td>The quality of studies at universities</td>
</tr>
<tr>
<td>The geo-natural factor</td>
<td>Land area (km²)</td>
</tr>
<tr>
<td>(The utilization of this factor depends from the size of the territory, climate benefits, the availability of natural resources and its position)</td>
<td>The forest area (km²)</td>
</tr>
<tr>
<td></td>
<td>The agricultural land (km²)</td>
</tr>
<tr>
<td></td>
<td>Geo-climatic advantages</td>
</tr>
<tr>
<td></td>
<td>Advantages of the geographic location</td>
</tr>
<tr>
<td></td>
<td>Climate benignity</td>
</tr>
<tr>
<td></td>
<td>Waste</td>
</tr>
<tr>
<td></td>
<td>Hazardous waste</td>
</tr>
<tr>
<td></td>
<td>Total discharged wastewater</td>
</tr>
<tr>
<td></td>
<td>Water supply</td>
</tr>
<tr>
<td></td>
<td>Total water supply</td>
</tr>
<tr>
<td></td>
<td>Investments in water supply and waste management</td>
</tr>
<tr>
<td>Informal institutions and the property rights protection factor</td>
<td>Confidence</td>
</tr>
<tr>
<td></td>
<td>Confidence in politicians</td>
</tr>
<tr>
<td></td>
<td>Confidence in business institutions</td>
</tr>
</tbody>
</table>
Informal institutions are „soft“ factors which in most cases can not be measured quantitatively. In some regions this could be a key factor in their development. Protection of property rights is very important for all business entities in the investment decision-making.

<table>
<thead>
<tr>
<th>The culture and tourism factor</th>
<th>The quality of government services</th>
</tr>
</thead>
<tbody>
<tr>
<td>(The touristic potential of the region can have a great influence on its competitiveness. The tertiary sector in many regions is the basis of their economic activity. Culture does not have a major impact on the economic position of the region, but affects the satisfaction of many people residing in that territory)</td>
<td>The safety of property rights</td>
</tr>
<tr>
<td></td>
<td>The share of the gray economy in business activities</td>
</tr>
<tr>
<td></td>
<td>Judicial independence</td>
</tr>
<tr>
<td></td>
<td>The attractiveness of the business environment</td>
</tr>
<tr>
<td></td>
<td>The number of cinemas</td>
</tr>
<tr>
<td></td>
<td>The number of theaters</td>
</tr>
<tr>
<td></td>
<td>The number of libraries</td>
</tr>
<tr>
<td></td>
<td>Issued publications</td>
</tr>
<tr>
<td></td>
<td>Expenditures for the arts and recreation</td>
</tr>
<tr>
<td>Tourism</td>
<td>The number of tourists</td>
</tr>
<tr>
<td></td>
<td>Total tourist overnight stays</td>
</tr>
</tbody>
</table>

1. Indicators and sub-indicators of regional competitiveness are measured in the third phase. They are different in their nature and structure, which is the reason why their measurement requires the use of different units of measure. On the one hand, the complexity of the measurement of indicators is an advantage of this model, since it encompasses a large number of different indicators that affect the competitiveness of the region. On the other hand, violates the principle of simplicity and creates more possibilities for incorrect estimates or calculations, which can be expressed as the limitation of the Model.

2. In the fourth phase, composite index of regional competitiveness is created and calculated. The index measures 8 factors, constituting of 78 indicators and sub-indicators (Figure 1). All measured factors and their indicators can be ranked. The sum of the values of all factors creates the index of regional competitiveness. Each factor has six of indicators, which in the aggregate provide the value of measured factor. For more precise measurements, certain indicators are decomposed into sub-indicators. The numbers of sub-indicators are not the same for all indicators. Some of indicators and sub-indicators are shown as negative value (the share of the gray economy in business activities and the number of companies with a net loss), because increase in their value reduces regional competitiveness. The expression of regional competitiveness can be represented as:

\[
\text{Index of regional competitiveness} = \text{The economic factor} + \text{The social factor} + \text{The infrastructure factor} + \text{The factor of innovations} + \text{The human factor} + \text{The geo-natural factor} + \text{Informal institutions and the property rights protection factor} + \text{The culture and tourism factor}
\]
Figure 1: Factors and indicators of Snowflake model of regional competitiveness

Notes: Index of regional competitiveness is marked in bold letter, the factors are highlighted in blue, sub-indicators in italic letter and indicators and sub-indicators which are measured by survey are highlighted in red.
Sub index of regional competitiveness can be expressed as:

\[ X_i = \left( \frac{x_i}{\bar{X}} \right) \div \left( \frac{p_i}{P} \right) \times 100 \]

Where \( X_i \) is the index value for a particular region, \( x_i \) is the value of indicator in the region, \( X \) is the value of indicator for the country, \( p_i \) is population in particular region and \( P \) is total population in the country.

The obtained values of sub index of certain indicators appreciate the differences in the population of each region. In this manner, the differences are easily expressed in the region in relation to the level of the territory, as well as the differences between the obtained values of the various regions. The purpose of this sub-index is to shows the strength of each region. However, the sub index has the biggest disadvantage because aggregates “apples and oranges”. Since sub index favoring those indicators which have the highest standard deviation and decreases the significance of those indicators which have a lower standard deviation, it is necessary to divide the term with standard deviations of each indicator. In addition, all indicators have the same significance and cannot express the qualitative side of the measured sub index. Index can be expressed as (Huovari et al. 2001):

\[ \frac{Sub\ index}{\delta} = \frac{X_i}{\delta} = \left( \frac{x_i}{\bar{X}} \right) \div \left( \frac{p_i}{P} \right) \times 100 \div \delta \]

Wherein \( \delta \) represents the standard deviation of \( X_i \) indicator. To avoid the problem of overestimates of index or even its underestimates, the index is necessary to multiply by 100 (even 1000), or in some cases divide it with the same amount, in order to obtain the value with same number of decimal. Another disadvantage of standardized index that Model solves is equalization of factor’s strength in regional competitiveness. It would be wrong to equate the strength of indicators GDP and the number of theaters or employment and the number of pharmacists in a region. The method is very complex, since it gives the author possibility to estimate value of the index. On the other side, provides the most correct measurement of indicators, because avoids a trap of “same importance” of factors. It is important to note that the countries and regions are distinguished by their natural and social characteristics so values of the same indicators do not have the same importance.

In the last phase, index of regional competitiveness is analyzed.

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*Figure 2: The strongest and the weakest structure of snowflakes competitiveness and the rank of competitiveness.*
Model graphically shows the structure of snowflakes competitiveness (Figure 2). The darkest shade of blue, indicates that the competitiveness of factors or their indicators is the largest, with a value of rank I. The brightest shade of blue, indicates that the competitiveness of factors or their indicators is smallest, with a value of rank IV. White fields of the Model (with a value of rank V), indicates that there are no data for the factors and their respective indicators. In some countries this assumption is unavoidable. For example, the data for the region of Kosovo and Metohija have a value of rank V, because they are unavailable or there is no possibility of appropriate assessment. The range of blue shades can be larger depending on how many regions certain country is divided. For example, if the country has 20 regions, then the Model shall have 20 shades of blue. The same thing applies to number of ranks.

**Continental regions of Serbia: Background**

Serbia covers an area of 88,502 km², with population of 7,186,862 citizens. The Law on Regional Development (2009) defines regions in Serbia as statistically functional territorial entities that are set up for the needs of planning and implementing the policy of regional development in conformity with the nomenclature of statistical territorial units at level 2. The Law on Regional Development has defined 5 statistical territorial units which correspond to NUTS level 2. Those are: 1) Region of Vojvodina, 2) Belgrade Region; 3) Šumadija and Western Serbia Region; 4) Southern and Eastern Serbia Region; 5) Kosovo and Metohija Region (Figure 3). For the purposes of this research, competitiveness is measured at this territorial level.

![Regions in Serbia](http://pretraga2.apr.gov.rs/APRMapePodsticaja/)

**Figure 3: Regions in Serbia**

**Notes:** By the United Nations Resolution 1244, Kosovo has a special status within the Federal Republic of Yugoslavia of which Serbia is the successor.
Results

After the calculation of index values of all indicators, we have calculated the factors of regional competitiveness which are based on certain indicators (see Fig. 1). In this calculation, there are also negative indicators that reduce the value of the represented factor, such as: waste, corruption and the share of the gray economy. Index of regional competitiveness is determined by the sum of all factors of regional competitiveness. Results of indexes and factors of regional competitiveness are presented in Table 2.

Table 2: Results of measurement of factors of regional competitiveness, the value of the index of regional competitiveness in Serbia and their ranks.

<table>
<thead>
<tr>
<th>Regions / Index of regional competitiveness / (rank)</th>
<th>The economic factor</th>
<th>Infrastructure</th>
<th>The human factor</th>
<th>Innovations</th>
<th>Geonatural factor</th>
<th>The social factor</th>
<th>Culture and Tourism</th>
<th>Informal institutions and the property rights protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgrade Region - 10,59 (I)</td>
<td>2,1274 (I)</td>
<td>1,74832 (I)</td>
<td>1,6485 (I)</td>
<td>2,0272 (I)</td>
<td>0,2595 (IV)</td>
<td>0,30633 (II)</td>
<td>1,1633 (II)</td>
<td>1,3053 (I)</td>
</tr>
<tr>
<td>Southern and Eastern Serbia Region - 7,14 (IV)</td>
<td>1,349 (IV)</td>
<td>0,920678 (IV)</td>
<td>1,3482 (IV)</td>
<td>0,2848 (IV)</td>
<td>1,0891 (III)</td>
<td>0,24459 (IV)</td>
<td>0,892 (III)</td>
<td>0,9625 (IV)</td>
</tr>
<tr>
<td>Šumadija and Western Serbia Region - 9,71 (II)</td>
<td>1,3975 (III)</td>
<td>1,219044 (II)</td>
<td>1,4343 (III)</td>
<td>0,3277 (III)</td>
<td>1,8818 (I)</td>
<td>0,30167 (III)</td>
<td>2,0553 (I)</td>
<td>1,1369 (III)</td>
</tr>
<tr>
<td>Region of Vojvodina - 9,33 (III)</td>
<td>1,4945 (II)</td>
<td>1,028668 (III)</td>
<td>1,6411 (II)</td>
<td>1,5091 (II)</td>
<td>1,3324 (II)</td>
<td>0,37119 (I)</td>
<td>0,6588 (IV)</td>
<td>1,2951 (II)</td>
</tr>
<tr>
<td>Kosovo and Metohija Region - n/a (V)</td>
<td>n/a (V)</td>
<td>n/a (V)</td>
<td>n/a (V)</td>
<td>n/a (V)</td>
<td>n/a (V)</td>
<td>n/a (V)</td>
<td>n/a (V)</td>
<td>n/a (V)</td>
</tr>
</tbody>
</table>

Source: Authors calculations

Notes: (I), (II), (III), (IV), (V) are ranks of regional competitiveness

Belgrade is the most competitive region in the majority of factors: the economic factor, infrastructure, the human factor, innovations, informal institutions and the property rights protection (rank I for all factors), while at least competitive in geo-natural factor (rank IV). Southern and Eastern Serbia Region has the lowest value in almost all factors, where the lowest-ranking are: the economic factor, infrastructure, the human factor, innovations, informal institutions and the property rights protection and the social factor (Figure 4a). Šumadija and Western Serbia Region is the most competitive in the geo-natural factor and culture and tourism, while in other factors are middle positioned. Region of Vojvodina is the most competitive in the social factor and at least competitive in a factor of culture and tourism, while for the other factors are middle ranked (Figure 4b).
(a) Belgrade Region and Southern and Eastern Serbia Region

(b) Šumadija and Western Serbia Region and Region of Vojvodina

Figure 4: Snowflakes of competitiveness

(c) Kosovo and Metohija Region
Belgrade Region has an Index value 10.59 and shows that it is far more competitive than Southern and Eastern Serbia Region with the Index value 7.14. In percentage terms, Belgrade Region is more competitive than Southern and Eastern Serbia for 67.42%. Compared to the region Šumadija and Western Serbia Region and Region of Vojvodina, Belgrade is competitive for 8.31 and 11.89%, respectively, when comparing the percentage differences in Index value. Therefore Belgrade Region has ranked I.

Differences between regional competitiveness Šumadija and Western Serbia and Vojvodina are very small. Šumadija and Western Serbia Region are more competitive compared to Region of Vojvodina for 3.91%, when comparing the percentage differences in Index value. With this in mind, Šumadija and Western Serbia Region have rank II and Region of Vojvodina has rank III. These regions are more competitive compared to Southern and Eastern Serbia Region, which have rank IV. Competitiveness of Kosovo and Metohija Region was not possible to measure, because there are no available data for most indicators. By the United Nations Resolution 1244, Kosovo has a special status within the Federal Republic of Yugoslavia of which Serbia is the the successor. In this analysis, it could be logically concluded that this region is at least competitive with respect to all regions. Because of these facts, Kosovo and Metohija Region has the rank V and is not marked by shades of blue (Figure 4c).

**Conclusion**

Larger number of different factors comprehensively presents our definition that the competitiveness of the region is ability to be productive and maintain a high standard of living. The same standard of living and productivity depend not only on economic performance, or the number of schools, universities and hospitals in a region. Likewise, the institutional support is also important, as well as quality infrastructure, science and technology development and other variables that affect the quality of life in a region. The number of variables that affect the productivity and standard of living is certainly higher, but it is impossible to include all. On the other hand, some authors measure only economic and social factors or even just GDP as a proxy for human well-being (Armington,Acs 2002; Royuela,García 2013), factors of entrepreneurship (Storey, 1994; Kirchhoff et al., 2002; Lee et al. 2004), human capital factors (Thompson, 1965;Lucas 1988), territorial capital (Camagni, Capello 2013) or space and quality (Jansson – Waxell 2011). Others measure certain economic and social variables termed as creative industries and the creative class (Florida 2002; Chapain and Comunian 2010; Chapain et al. 2013; Dzudzek – Lindner 2013) which became popular in the literature in the last ten years. There are much more examples. This just proves our statement at the beginning of this paper that that most authors can agree on the definition of regional competitiveness, but differences arise in various methodologies or different views of competitiveness.

How is possible comprehensively express the issue of regional competitiveness? Only by measuring a large number of factors and their indicators. We believe that only on this way can fully explore this issue. More specifically, there are a number of indicators that are impossible to obtain with quantitative methods, but whose presence is important in creating an index of regional competitiveness. This primarily implies psychological indicators whose data can be collected only by interview with experts (government experts, representatives of companies that have regional significance, the scientific community). Bearing this in mind, we have measured 78 indicators which are grouped into eight factors of Snowflake model of
regional competitiveness. Taking advantage of a large number of indicators, which are included in eight factors of competitiveness, we succeeded to overcome the problem of a measurement of only economic and social factors. Also, Snowflake model can be applied in any country. It allows measurement of similar indicators if the same indicator does not exist in regions where regional competitiveness is measured. This characteristic of the model gives an advantage because it can be applied in the countries (regions) which does not have the same statistics. On the other hand this characteristic is also its limitation, since errors may occur in the selection of a substitute indicator.

Snowflake model has a several important features: 1) It can be used as a tool of socio-economic analysis of regional competitiveness, because it determines the strengths and the weaknesses on the regional level. 2) In making strategic decisions, it can be used as a tool for strategic planning, keeping in mind the importance of increasing regional competitiveness for a particular country. 3) It informs about the degree of regional competitiveness and quality of life, business conditions, the efficiency of government in the region, etc. Finally, if we say that this model is not unique because it measures a large number of factors and their indicators (in recent years have appeared analyzes that included a number of factors and indicators), then, it is particular because it has a characteristic of graphic (the visual) impression.

References


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LEVEL OF TOLERANCE TO CHANGES IN VOJVODINA ENTERPRISES

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Abstract

The aim of the paper is directed towards researching the degree of resistance to changes in small, medium and large enterprises in Vojvodina. In accordance with the theoretical analysis the subject of the empirical part of the paper is the analysis of tolerance to changes in small, medium and large enterprises in Vojvodina, conducted on the basis of a questionnaire about tolerance towards changes by S. Marušić. The results of which are obtained show that: the most tolerant to changes are large, followed by small and medium enterprises. The scientific goal of this paper is that on the basis of the results obtained conclusions and examples of good practice are made that can contribute to the study of resistance to changes in small medium-sized and large enterprises. The practical aim of the research is the application of the results of resistance to changes in small, medium and large enterprises, for more efficient implementation of the process of changes in organizations.

KEYWORDS: tolerance, resistance to changes, change management in SMEs and large enterprises

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005.591.4

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**Introduction**

The main characteristic of modern social and economic life in its every aspect are changes. Managing the process of change within companies is one of the key elements in establishing and improving the quality of products and services in the new economy (Arsenijevic, 2012, pp. 1269-1275). One of the conditions for the creation, functioning and development of SMEs is the relationship between government and public opinion according to the role, importance and problems of small and medium-sized enterprises (Kastratović et al., 2013, p.51).

However, equally important are the willingness and ability of employees to be actively and adequately involved in the process of changes, as one of the significant factors affecting the efficiency, profitability, reputation and survival of the organization.

**Theoretical bases**

**Defining organizational changes**

Change management can be defined as the process of changing or modifying an existing organization. Organizational changes have their pace and dynamics of development. Both in theory and in practice it is now considered that changes, rather than stability, are the natural state of the organization. The changes are the cause of development, and sometimes the cause of failure (Čabrilo, 2010, pp.75-81). People tend to resist changes, wanting to preserve the behavioral routines and procedures (Lojić, Đurić, 2011, p.307).

Change management is the process, tools and techniques to manage the people-side of business change to achieve the required business outcome and to realize that business change effectively within the social infrastructure of the workplace (Hiatt, 2013, p. 64) numerous theories explain the basic cause of human reactions to change (Grubić-Nešić, 2010, pp. 331-345). However, research shows that people who react negatively to changes, feel that they have something endangered, something that they need or something they consider valuable (Arsenijević, 2011, pp. 6278-6285) Since the social environment is subject to constant changes, this means that the underlying assumptions that were valid yesterday, can even tomorrow become invalid and can easily go in the wrong direction (Kastratović, 2008, p.22).

**Defining Small and Medium Enterprises**

The definition of micro, small and medium-sized enterprises, according to the standards of the European Union is based on the recommendation of the European Commission. (Official Journal L 124, 2003, p. 36). In order for a company to be recognized as a micro, small or medium it should meet two conditions: The requirement on the number of employees – the number of employees in the company should be within the specified limits; One of the two financial indicators: a. the total annual revenue should be less than or equal to the allowed, b. the total assets/liabilities should be less than or equal to the allowed.
According to the Accounting Law of Republic of Serbia, (2013) the companies should meet two of three criteria to be categorized as small or medium-sized enterprises:

Table 1: Criteria

<table>
<thead>
<tr>
<th>Criteria – Serbia</th>
<th>Small</th>
<th>Medium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of employees</td>
<td>&lt; 50</td>
<td>From 50 to 250</td>
</tr>
<tr>
<td>Total revenue</td>
<td>&lt; € 2.5 mil.</td>
<td>€ 2.5-10 mil.</td>
</tr>
<tr>
<td>Total assets (assets)</td>
<td>&lt; € 1 mil.</td>
<td>€ 1-5 mil.</td>
</tr>
</tbody>
</table>

The review of the condition of companies in Vojvodina for 2014.

Based on available data, we can conclude that the calculation of macroeconomic aggregates covered 93,150 companies in the Republic of Serbia. On the territory of Vojvodina there were 24279 companies in 2014, of which: 21094 micro, 2472 small, 583 medium (Department of Statistics of RS, 2014).

Empirical research

The research subject and objectives

In line with previous theoretical analysis the subject of empirical research is the analysis of tolerance to changes in small, medium and large enterprises in Vojvodina. The main problem is to determine the overall level of tolerance towards changes and three aspects of tolerance: the aspect of tolerance of accepting novelties, new and unexpected situations, the aspect of skills of managing in the complexity of a large number of unsettled and incomplete information, the aspect of ability to manage in the aspect of solving the unclear situations in which decisions should be made in companies.

The result that can be considered as an average tolerance is 3, everything below it is insufficient, and above is satisfactory or excellent (Marušić, 2000, p.205).

The research tasks

In order to prove or disprove the research hypotheses, it is necessary to implement the tasks of research. Necessary within this paper is: examine the tolerance to changes of employees in organizations being researched; examine the tolerance to changes in various aspects; establish whether there are differences in tolerance between the examined companies; establish whether there are differences in terms of demographic characteristics of the respondents in the surveyed enterprises.
The research hypotheses

Based on the subject and objective of the research the hypotheses were defined. The basic research hypothesis H0 started from is as follows: We assume that the total tolerance to changes in the examined companies in Vojvodina is at a satisfactory level.

The auxiliary hypotheses:

(H1) We assume that tolerance to changes from the aspect of tolerance to acceptance of novelties in the examined companies, and according to type, is the highest in small enterprises.

(H2) We assume that tolerance to changes from the aspect of the ability of managing in the complexity of disordered, incomplete information in the examined companies, and by type, is the largest in large companies.

(H3) We assume that tolerance to changes from the aspect of resolving unclear situations in which decisions should be made in the examined companies, and according to the type is the lowest in medium companies.

The research methods

The qualitative and quantitative approaches were combined, the so-called triangulation method. The techniques and instruments were selected as part of the descriptive research method. The analytical and synthetic, and statistical method was applied. From research techniques in the process of collecting data, we applied: interviewing, surveying and scaling. The instrument we used is composed from the questionnaire for determining the level of tolerance to changes (standardized questionnaire from the book "Human Resource Management" by Švetlo Marušića.

The research sample

The sample consisted of employees of both sexes, aged twenty to over fifty years, of different length of service, as well as of different levels of education in the three categories of companies - small, medium and large. The research covered a total of 752 respondents from all categories of enterprises. All three categories of enterprises are based in Vojvodina. The sample adapted to analytical needs of this research, is deliberate. Surveying of respondents was conducted in the period from 24.05.2012 to 27.05.2012.

The research results display

We have obtained the results based on the questionnaire analysis. The questionnaire "Tolerance towards changes" was analyzed according to the given key by Marušić (2000, p.205) of the model where the results are observed from four aspects: the overall level of
tolerance towards changes, tolerance to acceptance of novelty, the ability of managing in the complexity of disordered, incomplete information, the situations in which decisions should be made. The questionnaire contained 16 questions which were analyzed and processed according to the given key. Distribution of answers according to the key, and the total result of tolerance to changes is given in the following Graph 1.

The questionnaire contained 16 questions which were analyzed and processed according to the given key. Distribution of answers according to the key, and the total result of tolerance to changes is given in the following Graph 1.

The overall level of tolerance towards changes is 4.06 which is an acceptable result considering that it is the result which can be considered an average tolerance of 3.00, anything below that is insufficient, and above is satisfactory, or exceptional. In the case of small enterprises, we can say that the overall tolerance to changes is satisfactory. Tolerance to acceptance of a novelty is 4.40. The ability of managing in the complexity of disordered, incomplete information is 4.08. Solving the situation in which decision making is needed is 3.52.

In the medium enterprise the total level of tolerance towards changes is 3.85, which is also an acceptable result considering that it is over 3.00. In the case of medium-sized enterprises, we can say that the overall tolerance to changes is acceptable. Tolerance to acceptance of a novelty is 3.82. The ability of managing in the complexity of disordered, incomplete information is 4.03. Solving the situation in which decision making is needed is 3.48.

In a large enterprise the total level of tolerance towards changes is 4.34, which is also an acceptable result considering that it is over 3.00. In the case of large enterprises, we can say that the overall tolerance to changes is more than satisfactory. Tolerance to acceptance of a novelty is 4.30. The ability of managing in the complexity of disordered, incomplete information is 4.56. Solving the situation in which decision making is needed is 3.54.

The respondents in large companies showed the greatest overall level of tolerance. They also showed the highest tolerance in coping with the complexity of disordered, incomplete information and the lowest in solving the situations in which decisions should be made.
**Discussion**

Based on the comparative results shown in Graph 2, we can conclude that the employed in large companies are the most tolerant to changes.

Based on the comparative results shown in Graph 2 we can conclude: the employees of large companies have the highest overall level of tolerance to changes; the employees in small enterprises have the highest level of tolerance to acceptance of novelties; the employees of large companies have the highest level of the ability of managing in complexity of disordered, incomplete information; while the value of the results of the ability of solving ambiguous situations in which they need to make decisions is equal in all three forms of enterprises where still the highest score is shown by large companies; the situations where decisions should be made in all three forms of enterprises is equally low, still the lowest score is indicated in medium enterprise.

From the results we can conclude that: 1. From the aspect of the overall tolerance in the first place is the large enterprise, followed by a small and the medium enterprise showed the lowest result. 2. From the aspect of tolerance to acceptance of novelties in the first place is the small enterprise followed by large and final is the medium enterprise. 3. From the aspect of the ability to manage in the complexity of disordered, incomplete information in the first place is the large enterprise followed by the small and medium enterprise. 4. From the aspect of solving the unclear situation in which decisions should be made in the first place is the large company.

Based on the comparative results shown we can further conclude: the employed in medium-sized enterprises have the lowest overall level of tolerance to changes; the employed in medium-sized enterprises have the lowest level of tolerance for the acceptance of novelties; the employed in medium-sized enterprises have the lowest level of the ability to cope in the complexity of disordered, incomplete information; while the value of results in the ability of solving unclear situations is the greatest in large enterprise followed by small and medium enterprises noting that the differences in results are almost negligible.

Following the presented research findings, we approached to establishing their compliance with the set research hypotheses.

The H0 assume that the total tolerance to changes in the examined companies in Vojvodina is at a satisfactory level is confirmed. The auxiliary hypotheses set at the beginning of the research were also confirmed.
Conclusion

Considering the trend applied to more frequent and faster processes of changes both globally and in our country, as well as considering the results of the research we conducted, the activities that would be appropriate to implement in small, medium and large enterprises are as follows: raising awareness about the necessity for changes in companies, raising awareness about the benefits of innovative changes within companies, creating a clear vision and strategy in the process of changes, the inclusion of employed in developing this vision, communicating the vision should be a common activity of all employees, conducting detailed analysis of market needs for the purpose of assessment of the justification of entering the process of changes, developing strategy of changes, a detailed analysis of existing capacity, reorganization and management training. The proposed measures that would contribute to reducing resistance to changes through the inclusion of employees into teams: set high demands at work and challenging goals, the existence of participation in goal setting and decision making, certification and presentation of the abilities, division of labor by the strongest qualities of the team members, the consolidation of benefits achieved through changes and the launch of further changes, monitoring and improving staff competencies, determination of the possibilities of employees’ progress, implantation of innovative approaches in the culture of the organization.

The contribution of this paper can be also reflected in identifying a new level of accountability of managers in the Republic of Serbia. To what extent will the companies be successful in the process of transition and changes depends and will even more depend in the future on the managers leading the companies.

References


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ECONOMIC EFFICIENCY OF WATER PROTECTION WITHIN ENVIRONMENTALLY FRIENDLY AND INTEGRATED WATER RESOURCES MANAGEMENT

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Abstract

Economic efficiency of water protection means having a program to control and make water resources achieve water and environmental status targets. The goal of this paper is to point to the importance of economic efficiency of water protection which has a direct impact on the results of any environmentally friendly and integrated water resources management and produces effects measurable at the water-user side. In particular, this paper aims at specifying basic economic elements and limitations of water protection present in environmentally friendly and integrated water resources management systems. Achieved status targets of water resources are the basic parameters which contribute to full integrated management of waters in time and space. Economic efficiency is needed for water and environmental status targets to be achieved in a proper manner and with the right economic instruments and measures. The economic instruments and measures depend on economic policies that govern taxes, charges, fees and the like. Economic efficiency is more comprehensive than cost efficiency which, in environmentally friendly water management, pertains to institutional and operating costs of the measures imposed. The basis of economic efficiency is made of relationships between different offers that enable achieving specific environmental and water status of water resources. From an economic standpoint water protection comes down to achieving such status of water that allows efficient use of water in integrated water management and ecology.

KEYWORDS: economic efficiency, water protection, ecology, water management, water quality.

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UDC: 005:[502.171:546.212

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**Introduction**

The basic dilemma concerning priority setting in making economic decisions about water protection and ecology is which of them will enable establishing an efficient regulatory and/or economic system. There are two basic theoretic approaches in this: the approach of normative economics and that of positive economics. Economists supporting values of the normative economics and those supporting positive economics have different approach to the question as to whether charges and fees should be introduced for water protection as fiscal (fixed) parameters that existed in the past or should there be a tariff (a price) charged for the use of public resources and the use-value of water. The difference in the approach is a result of different understanding of economic functions, elements and processes which are connected to pure public and public resources and values contained in the use-value of water.

**A Water Protection System and Ecology in Water Management**

Water is a natural resource, not a commodity, and services are those that enable achieving its quality targets, or its use-value. Thanks to the services provided, polluted water from a deteriorated natural resource is transformed into good natural resource and new economic resource. Water protection not only requires government regulations but clearly defined functions and elements that serve as a basis for establishing administrative and business processes in economic and financial structures and systems. Transforming the use-value of water from unused natural resource into economic resource occurs because organizations operating in the water sector are oriented towards increasing economic efficiency. Such orientation implies defining administrative activities and the use of buildings, devices and facilities based on normative and technological basis and measures.

The existing technology, the production and the attitude of citizens towards water accelerate water pollution which requires well-designed water and environmental protection. Water protection is possible on condition that discharging or receiving polluted water is subject to prohibition, different conditions or limitations. The primary concern is to choose between different preventive, technological, economic, regulatory or other solutions that would enable achieving good quality of water at the side of natural persons and legal entities that pollute it. The second important condition lies in the treatment before the used water is released into a recipient body of water and water facilities. Third is achieving the quality target by physically, chemically, biologically and ecologically treating the water area and the drainage basin. There is another special option which is to leave the water to clean itself in the watercourse or for the water to be released into a larger watercourse.

Water protection, as a field, can be grouped according to: (a) pressures and impacts of natural factors and human activities concerning water and environmental protection, protected areas and water usage; (b) changes in the nature of movement and fluctuations in water quality; (c) the methods and procedures for achieving the goals of water protection; (d) types and methods for the implementation of service processes; (e) the ways and methods of providing and performing water protection services; (f) the needs and demand of the public and users, and taxpayers - beneficiaries and (g) the applicable laws on water protection.

Water protection system consists of the elements such as various physical, chemical and biological characteristics of water and technological systems and economic factors which define the limits of allowed impact on water systems wherever there is water protection.
management. The water system can be considered an eco-system given that it includes mutually interconnected factors of different intensity, pressure and effects on water and the environment that require ecological balance. Ecological balance implies sustaining natural diversity, supporting biological production, developing methods to eliminate negative pressures and impacts on water, promoting economic efficiency from the demand for water through services provided by the water sector.

Basic elements of any water policy and water management activity fall under the following areas: (1) water protection and ecology, (2) water (power) services and (3) other activities.

Ecological Aspects of Water Protection

Water protection includes all changes of the condition and status of water, water services and activities of the public, that is, all the types and manners of influence and pressures caused by natural, economic and other factors resulting from human activities on surface water and ground water and includes specific types of revenues, sources of finance and financial means spent on services and investments. This area targets bureaucratic (administrative) coordination to specify and position water protection and environmental protection within water management. The water quality is determined by means of theoretic and practical elements and methods in chemistry, physics and biology. The water quality, for purposes of water and environment protection, is determined depending on the ecological status of water. Ecological status requires determining (Annex V, EU Water Framework Directive) biological, hydro-morphological, chemical and physical characteristics and general and specific elements of pollutants. Annex V of the WFD sets out in detail specific types of elements relevant for ecological and chemical statuses which require establishing a supervisory, operating and scientific monitoring but also additional monitoring. The results of monitoring are used within an integrated water management system to determine the condition and to specify ecological status which may be (1) poor, (2) unsatisfactory, (3) satisfactory, (4) good and (5) excellent. Such ecological status is combined with chemical status which may be good or bad. Reaching a specific ecological status depends on social, political and in particular economic efficiency and ability to create conditions for accountability of legal entities and natural persons that pollute water and benefit from higher and added value.

Water Services

Water services in the field of water protection include specific public and private (economic/waterpower) services that concern receiving and retaining used water within surface water and ground water, together with collection of waste water and water drainage and operations of waste water treatment facilities. Public services pertain to administrative and regulatory activities related to water protection and environmental protection, while private services are activities aimed at achieving the water quality targets. Waterpower services are series of tasks, works and processes used by a service provider to meet the needs, wants and demand for water expressed by the population, industry, agriculture and other economic and non-economic stakeholders.

The services supplied are accompanied by instruments for chemical, biological, physical and ecological measures which need to be taken in order to make water reach the predetermined level of quality and in particular the desired ecological level and potential. Such measures and
instruments (Bajčetić, 2012.) represent values applicable to human, financial and material resources. Resources and financial means that need to be spent are determined according to the condition and status of water that needs to be treated. The offered water protection should contain quantitative and value indicators that measure the existing and the required water quality. These indicators are drawn from analyses of the measured water quality; applied measuring techniques and possibilities of purchasing resources in the market (inputs). The supply includes calculations for particular measures; specific costs; specific payers of waterpower services, that is users and taxpayers; reports on the quality and ecological potential of water before and after applying measures; specific types and values of use-value of water; economic and market influence on doing business at the user-side and influence of services on economy and gross domestic product.

Other Aspects

Other activities concern organized activities of the public which, although without any influence on the condition and status of water, must be accepted by makers of water policies and by the water sector. These activities may be used to influence the water sector through citizens’ associations which propose measures of more efficient water protection. Citizens’ activities are voluntary and are carried out within special forms of association.

Given the subject of water protection, irreplaceability, importance and characteristics of water needed for systemic actions aimed at increasing rationality and efficiency in water protection, the government has the leading role in this area. It reflects in creating legal framework and conditions that will enable application of economic and financial measures in water protection. The contents, functions and the interdependence of parameters are of particular importance for shaping the legal framework, economic characteristics and types of biological, physical, chemical and ecological elements in the water management system in the field of water and environmental protection.

Economic Elements and Relationships in Water Protection

From economic point of view water protection and ecology are a subset of economic policies, instruments and measures that enable meeting the required use-value of water and water and environment quality targets and secure conditions for integrated water management. Economic instruments and measures are used to meet the needs, wants and interests of the population, businesses, and are used in the interest of environmental protection and sustainable development.

Water quality management includes legal norms and measures (laws, rules and sanctions), economic measures (taxes, charges, prices, state grants, loans, finances provided from various funds, economic influences on gross domestic product), institutional measures (state measures and measures of territorial and political communities), political and social instruments (public relations and trust), spatial planning (integration of various interests that meet in space), scientific – research approaches (sampling, analysis, scanning and new solutions) and technological measures (efficiency of procedures).

The EU Water Framework Directive (WFD) suggested using the so-called COMMPS procedure to determine a list of priority substances which will be subject to basic, subsequent and additional protection measures. The application of the COMMPS procedure depends on the
characteristics of water and a database of hazardous and damaging substances. The WFD recommends using other methods and analyzing and updating the COMMPS procedure every four years.

Also, defining and application of limit values of emissions according to BREF – Best Available Technology Documents and BAT - Best Available Technology documents that are needed for the implementation of the Directive on Integrated Pollution Prevention and Control (Dalmacija, 2010), are particularly important questions. The best available techniques use standard methods for testing water and waste water (ISO, APHA, AWWA, WPCF, WEF, ASTM, AOAC), and in terms of problem solving, especially the problem with sludge, water protection directives are directly applied. Chemical, biological, hydromorphological and physical-chemical elements of the quality and status of water are contained in the WFD and other EU water directives.

Because of its natural attributes and use-value of water, and primarily because of services, water is an economic resource that sustains life and all types of economic activities in the country. Direct, indirect and nontangible use-values of water and the value of services are measured by supply, price and demand, that is, by costs and revenues. The possibilities offered by use-values of water are determined based on different factors that influence economic relations of the water sector and its environment. Those factors are as follows: spatial and time dimensions; the existence of object of trade (service); the existence of service providers, and users (polluters); relationship between the government, the taxpayer-user and charges, taxes and prices; the existence of institutions that influence economic relations (various directorates, agencies, funds, PWC, WC, organized users, companies and natural persons); established economic rules for water protection that provide framework for economic processes; defined models for determining the level and types of protected water, especially for the types and scopes of ecological condition and status of water; government’s and societal obligations regarding water protection which are embodied in given and implemented supply of service aimed at addressing the problem with pollution and specific economy of water protection and ecology in macroeconomic framework.

Economic characteristics of water protection efficiency are contained in the supply, demand and prices of services and „prices“ of water protection, that is, in charges and in particular in taxes. In a mixed economy, which is most widespread, when the government rules or the market are isolated they become inefficient as economic coordination mechanisms of water protection.

The water sector directly offers services that secure water quality and include operations of facilities and devices for water treatment and use of chemical, physical, biological and ecological measures. The main purpose of such services is to alter key characteristics of „discharged“ water and to return it into its natural condition without causing damage to the environment, the population, economy or sustainable development.

The offers of the required or specific water quality are based on a database of water and environmental protection management which includes various types of pollution. Quantifying the causes and the bad effects of water pollution and environmental pollution is done through the ratio of the risk of pollution and services offered by the water sector. Concepts taken from the Environmental Management System – EMS and Environmental Management Accounting – EMA (Mijanović, 2008) are used for calculation of such ratio. Both of these concepts are applied by companies and because of the risk component they are included in offers of services. In drawing up an offer, elements, data and information provided by users are taken into account (Mijanović, 2008), and EMA includes (Marković et
al., 2012): energy and material accounting, financial management connected with environmental protection, estimates of products’ life cycle, cost estimates and measures’ impact assessment and cost calculation for externalities.

Demand for water protection (Bajčetić, 2012) is a request for addressing problems with water pollution based on two groups of measures: market measures and measures stemming from direct application of laws. Demand occurs because of the needs and wants for solutions to raise economic efficiency at the polluters’ side and in the water sector by means of operating (basic) measures and incentives. It means being able to charge polluters at a price or charge formed based on actual social costs. By making polluters pay for removal of pollution they are forced to either establish treatment procedures for the expressed demand or to stop polluting water. The other way is for the government to prescribe mandatory standards of water pollution, that is, quality standards for receiving used, waste and polluted water.

An efficient and the simplest solution for addressing the problem of pollution is to impose fees or taxes on water pollution (depending on the discharge into a natural watercourse or an artificial water body), that is a tariff for services provided to polluters proportional to the quantity and types of pollution. If no taxes or charges for pollution are paid producers specify the price that is equal to their private limit costs. The quantity of pollution is proportional to the scope of production of the polluter with fixed limit costs of pollution of each produced unit, which is the reason to introduce taxes or charges by produced unit which equal the limit costs of pollution. Costs may become an incentive for the polluter when socially acceptable level of pollution may be achieved thanks to services used to address the problem of pollution.

The water sector, that is, the government may propose and conclude agreements on the use of transferable permits which determine maximum possible level of water pollution (demand) for legal entities and natural persons (users). In addition to terms and conditions pertinent to the quantity of pollution, such agreements regulate relationships between the water sector and the polluter concerning the location, space and time of water pollution; types of pollutants; rights and financial obligations of the polluter and the water sector; applied criteria from the offered permit and terms and conditions for expiry of the permit. The agreed terms and conditions may include, as special market conditions, the transfer of pollution rights from one party to another, that is, conditions for trading permits.

Figure 1 graphically shows how the water sector determines market relations for specific quantities of pollution for which permits are offered and issued. Permits are offered based on the conditions which are created by previously specified and taken procedures for receiving polluted (used and waste) water and in particular, depending on the possibility for biological, chemical and physical measures to be applied in water treatment (contained in waterpower services). The supply curve (offers) is vertical because it is created by precisely specified conditions that govern the level and quantity of pollutants that can be discharged into a watercourse. The curve that denotes demand for permits is created by the degree and quantity of pollution and the price of services which eliminate the pollution. When the conditions of pollution are taken into account, the price is determined as point A on the curve of demand for the price C which determines the quantity and satisfies the demand. When the water sector is not treating water by applying physical, chemical, biological and ecological measures, that is, when is not providing a previously defined water quality, the quantity of possible pollution discharged into water is dropping while the price is rising (point C₁) and the offer is new and higher (for the quantity in point Q₁). If physical, chemical, biological and ecological measures are intensified, new conditions will occur and that will represent lower offer for larger quantities of pollution (quantity Q₂) and at lower price (point C₂). Lower offer and price occur
because of the previous high price of pollution for larger quantities of pollution and the change in the price and quantities causes cyclic change in demand, because when the price is rising the quantities of pollution drop and vice versa. Demand is subject to continuous change and quantities of pollution and the price depend on the supply, that is, on the measuring results and analysis of the selected measures.

![Diagram](image)

*Figure 1: Demand and market relations in water protection from pollution*

Willingness to solve pollution problems reflects in the change in demand that has to be lower than the balanced (previous) offer (the line above the demand curve in Figure 2). The decision on the quantity and the degree of pollution is under the influence of market relations and the economic decisions made based on the difference in the relationship between costs and benefits.

**Externalities and Economic Limitations in Water Protection**

Sufficient and good water quality changes under the influence of human activities and produces external effects which may be positive or negative, that is useful or harmful. External effects are not accounted for in the price of the services, and they are unidirectional and reciprocal, and the emphasis is put here on natural persons and legal entities that produce bad effects by polluting water and causing damage to water users, the water sector, the environment, and sustainable development. Water is polluted by used and waste water from sewers, industrial facilities, mines, water discharged from agricultural, forest and construction land, from landfills and other areas of human activities.

Externalities (Stiglic, 2004) are phenomena caused by the use of water or water pollution, affecting people who do not want to pay for the benefit, or prevention of damage, even though they are the result of human activities and natural processes that take place outside the market exchange. As regards the use of water, externalities occur when a person contributes to the benefits of others, or damage to others by using water (consumption). Externalities are transferred to the third parties who pay for water services, but not necessarily to those who do not pay for water supply and usage.

According to the economics of the public sector the problems with external effects are addressed (Stiglic, 2004) by applying the theory of property rights and the theory of welfare state. The theory of property rights argues that the problem of external effects can be
addressed by establishing property rights. Water as a natural resource has no owner, and property rights are exercised through the use right. There is another theory known as the Coase Theorem which argues that bargaining of two sides will help address the problem of externalities. The theory of welfare state argues that the problem of externalities is addressed through government’s intervention and by internalization of costs of externalities which is done through taxation and subsidies. Taxes are used to prevent damage from pollution and are considered a fine or a price of risk. Such taxes are also known as Pigovian taxes (named after British economist Arthur Pigou) which are introduced to the extent equal to the damage, that is equal to marginal costs of efficient production for each unit of emission or the quantity of quality of water.

Subsidies (Aleksić et al., 2008) are the second most frequently used method for addressing the problem of pollution used in the event of negative externalities and they represent a form of financial assistance provided to polluters by the government.

**Conclusion**

Economic efficiency of water protection stemming from a responsible approach to ecology and water resources management is directly proportional to the total and, in particular, to sustainable development as a basic human need for economic growth and equity in the distribution of water resources. This paper clearly pointed and demonstrated dependence of basic economic elements of water protection whose combination enables achieving efficiency. Economic elements contained in the paper, confirm that the efficiency in the protection of water is a special result important for the definition of any ecological system and integrated water management. Because of that, economic efficiency of water protection should be considered a value relevant for achieving the ecological and water status targets of water resources in integrated water management. Economic efficiency of water protection depends on a water management system or on the procedures and processes that enable achieving the status targets of water that satisfy the needs of living beings, requirements of sustainable development and the interests of the population and economy.

The logic of economic efficiency in the protection of water is reflected in a larger value of the ecological status of water and the status of water as a natural resource. The better quality status of water as a resource obtained by water protection the better conditions for obtaining additional value for users of water and achieving greater economic results in the country.

There may be different approaches to determining the type and evaluation of water protection depending on whether economic policies are applied by using the classical, neoclassical, neo-liberal or other economic theories. Economics of water and ecology protection is a particular area within water management and the country’s economy. This area requires wider studies to reach economic instruments and measures for the optimization of costs and benefits. Research in economics of water protection is in direct correlation with many economic areas and disciplines.

Any established economic system in the protection of water is expected to be efficient, effective, affordable and equitable, and in particular, not to reduce, but to boost the growth of gross domestic product. The economic system must be established through the interaction of two subsystems which pertain to regulations and market exchangeability between services and water obtained by water protection.
References


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CAN MINOR FRUIT CULTIVATION CHANGE THE LIVELIHOOD OF THE MARGINAL PEASANTS? A CASE STUDY FROM BANGLADESH

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Abstract

Lemon (lebu) cultivation, a minor fruit production activity, is increasingly becoming popular among the marginal peasants. The present study aimed at exploring the potentials of lemon production and its impact on the changes in the livelihood pattern of the rural farmers as well as its impact on women empowerment. Based on qualitative and quantitative data collected from Mymensingh district in Bangladesh in 2015, this paper argues that life and livelihood of the citrus producer has significantly changed over the last decade. Income from the sale of lemon is the principal livelihood means and gender non-differentiated participation in the production process further enhanced the sustainability of the livelihoods. It also contributed to employment generation for those who are not directly involved in the lemon cultivation such as power tiller driver, irrigation pump driver, fertilizer & pesticide retailer, small lemon collector, lemon supplier in the study area. Moreover, increased participation of women in the citrus cultivation has changed not only their economic well-being but also social status, honor, planning and decision making power, and self-esteem. This study also shows that marginal and vulnerable poor women including landless women, female member of women headed household and widows significantly benefited from citrus cultivation. Yet, lack of cooperative society, financial support, credit facility, technical support, storage facility and marketing support are identified as the potential problems to achieve a sustainable growth of lemon production activity.

KEYWORDS: citrus production, livelihood, marginal peasants, women empowerment

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UDC: 338.439.4:634.33(549.3)

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Introduction

Lemon (lebu), a citrus fruit (Citrus limon) of Indian origin is gaining popularity among the farmers due to good economic prospect. Although their production is concentrated in Sylhet, Chittagong and the Chittagong Hill Tracts region of Bangladesh, it is getting popular in many other parts of the country. According to Bangladesh Bureau of Statistics, about 16000 metric tonnes of citrus fruits were produced in the country in 2008-09 and its production increased to 21000 metric tonnes during 2009-10 (BBS, 2015). Although it is not a major fruit and not widely produced, due to climatic and soil condition as well as expanding market and export potential, there is a sharp rise in the commercial lemon production.

Citrus is an important source of Vitamin C. In Bangladesh about 93 percent of people are vitamin C deficient since the mean intake of Vitamin C is far below from the recommended dietary allowance (Ahmed et al., 1998; Nielsen, 2000; Hels et al., 2003; Khan, Ahmed, 2005). Therefore, increased production of citrus could potentially provide the people with necessary vitamin C. Moreover, homestead and community cultivation as well as commercial production could be an important contributor in the total citrus production. Consequently, it could be a potential source of livelihood for many rural poor people. For example, previous studies on small-scale agriculture show positive impact on the improvement of the livelihood of the rural poor farmers. For example, Kabir et al., (2012) shows how small entrepreneurs in agriculture sector can achieve sustainable livelihood through access to a range of livelihood assets. They found a positive and significant correlation between small agriculture enterprise and improvement of livelihood. Salehin et al., (2009) showed a significant increase in annual income, food consumption expenditure, housing environment and family status of the framers due to the adoption of new agricultural technologies. Despite of growing interest in lemon farming, there is no significant study on the subject. Therefore, the present paper aims at exploring the role of lemon production on livelihood status of rural marginal peasant in Bangladesh. The main objectives of the paper are:

- to explore the potentials, problems and probable solutions of lemon production in Bangladesh
- to assess the impact of citrus production on changes in the livelihoods of the marginal peasant
- to investigate the women’s participation in citrus production and its impact on women’s empowerment.

Methodology

For the purpose of this study, both qualitative and quantitative methods of data were used. For the present research Kathalia, a village situated in Daogaon union Parishad in Muktagacha Upazila of Mymensingh district was purposively selected. Yet, in the selection process, the researcher consulted with IFDC project staff who is implementing IFDC project in cooperation with the department of agriculture extension (DAE). The selection of the study area was based on the following main consideration:

- The area is enriched in lemon production
- Availability of lemon producers in clusters
- Easy accessibility to the village because of better communication facilities
Cooperation from the respondents was exponents, expected to be high and possibility of getting reliable data and finally

No study of this type was done previously in the area

The researcher used both quantitative and qualitative information to produce the paper. Qualitative information were primarily collected by the researcher through Focus Group Discussion, transact walk and field observation and in-depth interviews during January-March 2015. Researcher conducted in-depth interviews with 21 farmers (male-10 and female-11) with the use of semi-structured interview schedule. However quantitative data were gathered from Upazila officials, respective government department, and different study report.

Result and discussion

Trends in lemon production in Bangladesh

Lemon has been the part of homestead gardening in Bangladesh since long. However, it has come to the spot light in the early 2000s and has increasingly become popular among the poor farmer. Thus, we see a drastic rise in the production citrus over the last decade. For example, during 2004 while the total citrus production was approximately 5000 metric tons, it became doubled in 2006. The following graphs show the growth in production of lemon over a decade in Bangladesh.

Figure 1: Trends in Lemon Production in Bangladesh Source: BBS (2015)

Moreover, compared to the main crop i.e. rice and other crops lemon production tend to be more profitable. The following graph compared the net profit of lemon production to other crops.
Lemon production in the study area

In Kathalia, lemon cultivation has started about eight to ten years ago. In this area rural farmers used to cultivate banana and pineapple before lemon cultivation. However, they turned to lemon production in large volume due high market price. In lemon cultivation practice, farmers in Kathalia introduced different types of modern lemon varieties of lemon. They collected high yielding lemon varieties from Sylhet, Tangail, and Manikgonj. They collected cuttings of Elachi, Kagozi, and Colombo lemon variety from different locations of the Bangladesh.

![Figure 2: Comparison of lemon and other crops in terms of production cost and net profit](image)

Source: BBS (2015)

Descriptions of the Varieties

There are three type lemons under cultivation in Kathalia. These are Ealchi lebu, Kagozi lebu and Colombo lebu. Kagozi lebu is produced for only one time in a year, in March- April. Elachi lebu and Colombo lebu are produced in all time. Colombo lebu has two kinds e.g. Manikgong Colombo lebu and Mymensingh Colombo lebu. Manikgong Colombo lebu has better production than Mymensingh Colombo lebu. Colombo lebu can tolerate water logging for seven to eight days.

<table>
<thead>
<tr>
<th>Local name</th>
<th>Common name</th>
<th>Scientific name</th>
<th>Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elachi lebu</td>
<td>Lemon</td>
<td>Citrus limon</td>
<td>BARI lebu-1,2,3 BAU lebu-2, BAU lebu-3</td>
</tr>
<tr>
<td>Kagozi lebu</td>
<td>Lime</td>
<td>C.aurantifolia</td>
<td>BAU kagozi lebu-1</td>
</tr>
<tr>
<td>Colombo lebu</td>
<td></td>
<td></td>
<td>Colombo-Manikgong, Colombo-Mymensingh</td>
</tr>
</tbody>
</table>

The farmers prefer the grafting seedling for their lemon garden because within one year of transplanting it gives fruit. In that area, the farmers prefer nine foot distance between plants. About 400-500 seedlings are transplanted per acre.

Farmers use fertilizer and organic matter in their lemon garden. Cost of gardening is almost about 5000 taka per acre. They use urea, triple superphosphate (TSP), muriate of potash (MOP) as fertilizer, and cow dung as organic matter.
Crop diversification occurred in Kathalia due to lemon production. Before lemon cultivation two or three crops were produce there. After lemon cultivation, five or more inter crops (sathi foshol) like Papaya, Zinger, Turmeric, Onion, Garlic, Kolocasia. Different types of vegetables are produced in the lemon field as intercrop, which increase the cropping intensity of that locality as well as increase the income from different crops, and ultimately it improves the economic status of the community.

Besides the lemon cultivation, they produce rice, winter season high value vegetables like cabbage, cauliflower, tomato etc. They also raise livestock and poultry in their homestead area, which helps them to additional income for their family needs.

Lemon cultivation also changed the infrastructure of Kathalia. Local government division constructed a puccka road for creating linkages with the different growth center of that area like Rasulpur, Gabtoli, Madhupur and Muktagacha. People supply their product very easily to the different location of the country and they get fare price of their product.

**Why respondents are more interested for more lemon production?**

Field data revels that there are many factors behind the adoption of lemon cultivation instead of other crops. Some of these are identified as follows:

- Maximum and quick return compared to other production
- Market demand of the products
- Proper site utilization
- Low investment cost
- Higher employment opportunity
- Opportunity to increase standard of living
- Opportunity to maximize crop diversification
- Reduce pressure on natural forest

**Lemon production and sustainable livelihood**

One of the most significant impacts of lemon cultivation is the conversion of fallow high land into productive lemon orchard and consequently adding unemployed workforce into production wheel. The area now under the lemon production used to be fallow land. Although this cultivable land is suitable for cereal crops, they are also appropriate for horticultural crops like lemon and other fruits. Since these are mainly khas (government) land and consequently became fallow land. This ownership condition of the land made it difficult to get access to it for cultivation. Moreover, the people who are engaged in lemon production are landless, day labor and unemployed and hence are considered as marginal population. Therefore, government decision to lease out the land for 99 years now made it easy for the marginal farmers to start lemon cultivation.

Involvement of the marginal peasants in lemon production brought much fortune to the people. Before lemon cultivation, people of Kathalia suffered in a number of ways. They lived in a poor condition. Due to the involvement in lemon production, annual income of the households has increased in many folds. Their yearly income reached up to 50000-60000
Taka from one acre lemon field, deducting all types of production cost. Many of the participants used to live in house made CI sheet and mud, but they now won house made of brick and CI Sheet. Most of the family now won tube-well. They also have mobile phones. The households in most cases use safer sources of water for drinking (tube well water 99.5%) as well as for other purposes. Majority of the households (61.2%) using hygienic latrine while 39 % use unhygienic latrine (e.g. pit latrine without slab, flush to unsafe hole or hanging latrine and no latrine/bush/open field). The proportion of open or hanging latrine is lower in the study area compared to national estimate.

In addition, the section that follows we will explain every components of sustainable livelihood frameworks in order to see whether the lemon farmers have achieved sustainability in their livelihood.

Natural assets (access to lemon land): In the study area there was limited access to the natural assets like forest land, khas land, public water bodies etc. When the landless people got the access to the khas land by registering under the government Department, they are now entitled for the same. They are now using this khas property for their livelihood to make better income and increase employment opportunity

Physical assets (improved house built): Since they are engaged in the lemon production, their workforce giving them the opportunity of earning and thus helping them to meet their basic needs. Most of the lemon growers are now self-employed and have improved housing accommodation, sanitation, better physical assets.

![Figure 3: Livelihood assets of lemon producers in Kathalia](image)

Social assets (social networks): The people of the Kathalia are now connected to multiple networks and stakeholder due to their involvement in lemon production. Lemon cultivation bridged a linkage with the lemon businessman, intermediary as well as the local market. Thus they are incorporated in the market and the supply chain. Yet, this social networks are still very limited and mostly within the local area.

Human assets (health services, education): With ten years of experience of lemon production in the field and by themselves, the lemon growers are now skilled enough. Their knowledge and awareness has also increased. They are now getting better education, healthcare and other livelihood facilities as well.
Financial assets (capital/income, credit): Lemon production is a year round enterprise which required labor force throughout the year. Thus people of Kathalia are now getting regular earning from lemon production as well as by selling labor in the same enterprise. The financial assets of lemon producers have been increasing for the last 10 years.

Women’s participation in lemon production and empowerment

In-depth interviews with the female farmer reveal economic empowerment women in Kathalia and their increased access to the market. In cultivation and production process, most of the women are involved as female labor. Thus, women of Kathalia got regular job (from 8 am to 4pm) in the lemon production field, and they earned Tk. 200.00 to 300.00 daily, which contributed in maintaining their family expenditure. Lemon cultivation also increased female participation in community. The information presented in the table below shows women’ involvement in different lemon production practices.

Table 3: Types of lemon production activity and nature of participation by men and women

<table>
<thead>
<tr>
<th>Production activity</th>
<th>Men participation</th>
<th>Women participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting/seedlings preparation</td>
<td>yes</td>
<td>Limited</td>
</tr>
<tr>
<td>Land preparation</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Budding of lemon</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>nursing of bud (watering)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Transplanting of the lemon cuttings</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Fertilizers application</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Intercultural operations</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Irrigation</td>
<td>Yes</td>
<td>No but limited</td>
</tr>
<tr>
<td>Pest &amp; disease control</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Harvesting of lemon</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sorting</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Packaging</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Sale in the market</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

During the field visits it was found that along with household members (male, female and children), hired labors (both male and female) were also involved in lemon production. Production activities were dominated by joint participation of male and female include seedling raising, gap filling, irrigation, plant protection and post harvest activities (Table 3). The involvement of female was higher in seed storage, seed drying, plant protection, gap filling, threshing, scooping, and irrigation, while male was more involved in seedling raising, land preparation, transplantation and weeding and mulching (Table 3). Children were also found to assist mostly in irrigation, gap filling, threshing and seed drying. Male hired labors were mostly engaged in seedling raising, land preparation, manures and fertilizer application, transplantation and weeding and mulching. Women worked as hired labors mainly for roughing and scooping.

In the study area it was observed that the women along with their husband decided some household decisions like purchasing food, buying cloth and family planning. In case of child education, health and sanitation and daily household expenditure, women had high decision making power in their house. Husband share the lemon selling money among their female members of the family. They take decision jointly with their female members of the family for arranging marriage ceremony of their family members.
Harvard Analytical Framework: Women empowerment in Kathalia

The Harvard Analytical Framework is described as a “gender analysis framework” (Rao et al., 1991; Williams et al., 1994), and tend to focus on who has access to and control of different resources (Overholt et al., 1985.) Based on the Harvard Analytical Framework on Women Empowerment, this study shows that women in Kathalia gained high access to different livelihood assets such as housing, household utensils, crops and vegetables, ornaments, poultry, education, saving etc. However, they have high control over only very few assets such as ornaments which traditionally belong to women. Although women have medium access to income, they don’t have control over it. With regards to land, women have low access and no control over it. Although women have high access to saving, they lack the control over it. The following table shows a detail list of livelihood assets and state of access and control over by the women in Kathalia.

Table 4: Harvard Framework on Women empowerment in Kathalia

<table>
<thead>
<tr>
<th>Content</th>
<th>Access to</th>
<th>Control over</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>Land</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>House/building</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Ornaments</td>
<td>High</td>
<td>No</td>
</tr>
<tr>
<td>Household utensils</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Crops and vegetables</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Poultry (bird)</td>
<td>High</td>
<td>No</td>
</tr>
<tr>
<td>Homestead</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Labor</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Education</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Different skill based training</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Awareness session</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Income</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Profit</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Expenditure power</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Treatment</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Savings</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Political power</td>
<td>Medium</td>
<td>High</td>
</tr>
</tbody>
</table>

Problems and possible solutions

There are acute infestation of some pests and diseases in lemon cultivation. Lemon butterfly (*Papilio demoleus* L.), green caterpillar, leaf miner (*Phyllocnistis citrella* St), die back (*Colletotrichum gloeosporioides*), leaf scald, canker (*Xanthomonas axonopodis*), greening (*Candidatus liberibacter asiaticus*) create a high production loss. Farmers use different types of pesticides and insecticides for reducing their yield loss.
The total irrigated area of the village is 60 percent of cultivable land and the remaining 40 percent is rain fed. Irrigation problem in the dry season is a common problem of the study area. Long time draught reduces the lemon production which has impact on the cost of production. Yield loss reduces the profit margin of the lemon farmers. In order to reduce the yield loss, they took some group initiatives, such as establish Deep Tube Well (DTW) and Shallow Tube Wells (STW) irrigation pump near their lemon garden. There are seven STWs and one DTW in the study area. There are no storage facility and processing plant for lemon in Kathalia. In the peak season while there is high production of lemon, the producers get low prices compared to the off-season. The lemon producers get minimum technical support from the pesticide dealers. They lack proper technical guidance and support from DAE as well as from other development partners in that area. Hence, the lemon cultivators are suffering from low production instead of potential yield of lemon. Local middlemen are now controlling the lemon business throughout the year and the producers have to sale their lemon as per the prices set by the middleman. Moreover, the lemon cultivator cannot bargain for higher prices as there is no other market opportunity in Kathalia.

Farmers took micro credit from different NGOs like BRAC, ASA, BURO Bangladesh, Gameen Bank, ASPADA and local Rupali Samabai Samity to support their small business, crop production, cow-goat-poultry rearing etc. Almost 80% villagers got loans from NGOs before starting the vegetable and crop production. Though lemon cultivation stated 10-12 years ago, still there is no cooperative for lemon growers. Even, the lemon producers did not able to form a common interest Group so that they will fight for their interest and to promote a financial institutional development.

**Conclusion**

Livelihood of Kathalia community exclusively depends on lemon cultivation. All other economic activities revolve around lemon production practices. Before citrus cultivation, the socio-economic situation of Kathalia community was very poor. After introduction of lemon cultivation in the area in 2000, the socio-economic situation of the area has changed gradually. They earn more money from the lemon cultivation and spend more for their family need. Women became empowered over the decade. Female members of the family now contribute to in decision making process. Rural poor women including land less women, women headed family member, widow are now added to the productive forces. They work in the lemon field and earn 200-400 Taka daily. It has increased women participation in different socio-cultural programs. Lemon cultivation has created other employment opportunities for the local people like power tiller driver, irrigation pump driver, fertilizer & pesticide retailer, small lemon collector, lemon supplier etc. All these contribute to the overall economy the study area. Yet, there are some limitations also. Lack of cooperative society, financial support, credit facility, technical support, storage facility and marketing support create problems for achieving sustainability in lemon production.
References


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THE INCREASING IMPORTANCE OF EFFECTIVE RISK MANAGEMENT IN BANKING -FINDINGS FROM SERBIA

Dejan Vukosavljevic 25, Danijela Vukosavljevic 26, Gordana Jelic 27

Abstract

The subject of the research presented in this paper is risk management, with a special study of banking sector. Research goals include determining the degree of importance and influence of risk management of internal and external risks to a more favorable environment for business success of banks in strategic terms, in the long run. In this sense, the key results of the empirical research on the territory of Serbia in 2015 on a sample of 34 financial institutions, of which 26 were banks, has been provided. The results were processed by statistical and mathematical methods and confirmed the validity of the defined hypotheses, that the importance of effective risk management in banking is growing, as well as the reporting system. The contribution of this research is in a scientific assessment of the importance of various risks, determination of the dominant theoretical and empirical knowledge supporting wider further research in this area in the banking industry.

KEYWORDS: Banks, Risk management, Logistic regression, Reporting hierarchy, Non-performing loans

JEL: G21, G28, G31

UDC: 005.334:336.71(497.11)

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Introduction

In modern conditions, especially in terms of the global banking business there are numerous risks that challenge the individual banking business, fee or at the very least a change that affects the outcome of the increasing uncertainty of the transaction, and generally increase the uncertainty of the realization of earnings. Achieving profitability in terms of increased competition and the growth of risk becomes a challenge for modern banking management, as well as for insurance (Piljan et al., 2014), and IT industry (Jevtic, Vucekovic, 2014). With the development of investment banking and the process of globalization of the financial system or the global operations of banks, there was an increase of additional risks that banks face in their operations. The global economic crisis, escalated in 2008 confirms this paper, when inadequate, unprofessional and somewhat hazardous behavior of the labor banking management, led to the mortgage crisis in the US, which is still reflected in the serious financial crisis in the world, and especially in the US and Europe, which is higher in order to protect the European Council adopted the directive on the protection of capital.

In 2013, the average total debt (earnings before interest, taxes, depreciation and amortization) increased significantly; loans with fewer restrictions such as stocks and income are also dramatically augmented. Banks use customer behavior before and after the crisis and modeled deposits. Smaller banks (according to EBRD data), in Europe have increased their long-term assets from 17% in 2006 to 31% in 2013 (Aleksic et al., 2014).

At the end of March 2015, the banking sector in Serbia is operated through the organizational network of 1,765 business units (22 fewer than at the end of 2014), with 24,753 employees (353 employees less than in the previous quarter).

Although all banks are independent legal entities which operate in accordance with local regulations conservative, developments in the euro area affect the banks in Serbia over the so-called: “psychological channel”, (Farsi et al., 2014). The risks to the stability of the financial system - external and internal increase in the Serbian banking, international environment has reinforced its influence in particular: the introduction of sanctions, Russia and the sharp fall in oil prices, the strong depreciation of the ruble in late 2014 and the lowering of the credit rating. In Serbia there are four Greek banks, which at the end of 2014 had a total market share of about 14%. The presence of Russian banks in Serbia is limited to two banks (market share of about 4% at the end of 2014). Thanks to strong domestic deposit base, which has shown growth resulting in a period of crisis and balanced measures of the National Bank of Serbia, the risk of external debt repayment, although present, is not at alarming levels and constantly monitored and analyzed.

According to the National bank’s data, at the end of the first quarter of 2015, the banking sector in Serbia has expressed long open foreign exchange position in the amount of 14.1 billion dinars, while the foreign exchange risk at the level of 4.21%. Banks in Serbia do business with net long positions in euros (10.41 billion) and US dollars (3.04 billion pounds), while in Swiss francs (1.44 billion pounds) have a net short position. The ten largest banks in Serbia by net balance sheet assets category, accounted for 76.2% of the total net assets of the banking sector in 2015, with 75.5% and 78.0% in terms of total loans and total deposits of the banking sector. Banks criteria in terms of willingness to take risks are extremely high and the lack of quality demand is the main limiting factor for credit growth (especially in the economic sector).

The banks’ position is: the most important foreign currency deposits, which in October 2015, were worth 10.230 million euros, followed by capital and reserves (5,086 million euros), demand deposits (2.120 million euros), dinar savings and time deposits (1,557 million
euros) and government deposits (EUR 451 million). These are the basic position of liabilities of commercial banks, which can be further divided by maturity of sources for financing business by economic sectors and other criteria (debit sources of financing). According to the Serbian National bank’s date from 2015, non-performing loans (NPL) in the banking sector amounted to 426 billion dinars, or nearly 3.5 billion euros, what is an about 22 percent of total loans. Trends doubtful in non-performing loans demonstrate that for banks could be a very big problem. The methods of hedging should vigorously be more develop and implement, as illustrated by the data in the tables coming from the Balkans.

Although the reserve for estimated losses is still sufficient to NPLs do not threaten the stability of the financial system, the high share of these loans has a negative impact on the propensity of banks to take a risk and credit growth and represents a systemic risk. From the large number of variables that could affect the dynamics of NPLs, three in the case of Serbia demonstrated reliable predictable effect: (1) the exchange rate, (2) the seasonally adjusted real net wages and (3) the reference rate of interest. Lending and portfolio quality indicators show that the total net loans of the banking sector (in nominal value) at the end of 2015 increased compared to the previous period.

**Literature framework**

The phenomenon of risk has been mentioned in 1821 in the Arabic writings, in 1621 in the English documents, associating it with the possibility of loss, injury or other harmful or undesirable circumstances; as an opportunity or situation involving such a possibility (Alastair, 2010).

Many theorists define it differently, among which are significant:

According to Aven (2007), the risk is equal to two consequences dimension and associated uncertainties; The risk is the uncertain result of an event or activity in relation to the value (Rosa, 1998).

In the technical context, the concept of risk has a specific meaning. It is widely used in the causes, probability, or emergency that may, or may not occur, the decision on condition known probability. Terje and Ortwin (2009) are considered to be separated following common characteristics of risk: The risk is equated with the situation in which there is a possibility of occurrence of an adverse event. In economics, under the harmful event, risk means a loss, or an unexpected expense. From the theoretical point of risk, it is considered to be uncertainty about the outcome of an event, in a situation where there are two or more rival options. The banks, insurance, investment funds and other financial institutions are all faced with certain risks. Their task is to be properly directed and managed by them, in order to first of all take full advantage of the business enterprise, and losses to a minimum. In the banking sector, it is not only on the depositary function of banks, credit, investment, the dinar and foreign affairs, or any other function of work in the bank, but a subject of new regulatory of National banks, International financial institutions, Basel Agreements. The risks are very numerous and many times each causally connected and have an impact on the total business of the bank. The expansion of banks, especially investment banking influenced the expansion of the number of risks to which banks are exposed (Rose, Hoyland, 2004). According to the International Standard Classification, each bank is mainly exposed to the following risks: credit, liquidity, payments, interest rate risk, foreign exchange, operational risks including IT and human resources’ risks.
Research

For the purpose of the paper, it has been realized an empirical field research in 2015, on the sample of 37 financial institutions, of which 24 banks in Serbia on the risk management issues were. An interview questionnaire has been compound of open and closed type of questions. Respondents were asked about the importance of individual risks, both internal and external. All the factors of risk are ranked according to their importance. Respondents have given answers also on how they consider the importance of an planned and continues reporting in risk management.

Methodology

The hypothesis of the research is defined as: H1. The importance of the effective risk management in the Banking increases. The hypothesis is validated by specific method of statistical analysis, which is quantitatively shown the impact of each risk factor on banks operations. The qualitative interpretation of the received responses analyzed in several ways by statistical methods was divided into further groups:

- The first group of statistical methods are the basic methods of descriptive statistical analysis of the observed data, certain dominant characteristics of the research sample, calculate the corresponding frequency response of individual subjects: the absolute and relative (percentage), the numerical parameters of the survey some basic statistical parameters, the mean and standard deviation for each of the hypotheses, and the poll question in the questionnaire;

- In the second group statistical test was used, depending on the individual variables of the sample, Pearson's $\chi^2$ (Chi-Square) test of independence of certain characteristics (of a given sample), and then in determining (in) dependence between the remaining individual responses of observed within the sample. For this purpose of the research an initial hypothesis (H0) of Independence characters was introduced. It assumes that the value of the observed variables do not depend on the core business, which given bank performs.

- The analysis was made by the model of multiple regression analysis (Eng. Multiple Regression Analysis). The main role of this analysis is to describe the link between one output (dependent) and two or more input (independent) variables. Thus, it was constructed the corresponding multidimensional regression model, adjusted to given data, this is the most efficient, acceptable model describing the relationship between a set of independent variables that affect the value of the output end, the dependent variable. The goal of the was to find the model that is best suited to the data, or the most economical, but still acceptable model that describes the relationship between a dependent variable and a set of independent variables that describe it. In the paper, they are called-the proportion (share) of affirmative answers of respondents (responses are coded with "1"), the ratio of the number of these responses in relation to the total number of responses of all surveyed banks. In this way, the proportion is a special variable that characterizes the structure of the sample, or the respondents' answers to every single question survey, which is justified by the process of its introduction.
For the regression coefficients, which are assessed on the basis of the data calculated in this research, it was used the original source code, i.e. special series of software copyright procedures written in statistically-oriented programming language "R". This programming language is mainly designed and easier and simpler of statistical analysis.

On the basis of estimates of regression coefficients determined by the quantity and quality of the resulting regression, has been expressed the connection, degree of agreement logistical functions with empirically obtained, the observed data. To this end, it was used: Standard error estimates, the coefficient of determination, as quantitative indicators of the quality of the theoretical model which empirical data set "fits the" appropriate regression model. This scientific methods formally support the validity of the proposed hypotheses.

**Key research findings**

In statistical analysis of risk management, types of risks performed by banks, the internal and external risks have been analyzed. Table 1, shows the total number of positive responses of 34 members (percentage), and the standard deviation for all eleven defined variables, i.e. kinds of risk.

**Table 1: Number of observations, the mean value and standard deviation of risk types of financial and banking companies**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Types of risk that the company follows</th>
<th>No. of positive responses</th>
<th>Proportion (p)</th>
<th>Stand. deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_1$</td>
<td>Market risk</td>
<td>0</td>
<td>0,0000</td>
<td>0,0000</td>
</tr>
<tr>
<td>$X_2$</td>
<td>Strategic risk</td>
<td>8</td>
<td>0,2353</td>
<td>0,1799</td>
</tr>
<tr>
<td>$X_3$</td>
<td>Risk of financial reporting</td>
<td>18</td>
<td>0,5294</td>
<td>0,2491</td>
</tr>
<tr>
<td>$X_4$</td>
<td>Risk management</td>
<td>17</td>
<td>0,5000</td>
<td>0,2500</td>
</tr>
<tr>
<td>$X_5$</td>
<td>Reputational risk (image)</td>
<td>18</td>
<td>0,5294</td>
<td>0,2491</td>
</tr>
<tr>
<td>$X_6$</td>
<td>Human resources risk</td>
<td>19</td>
<td>0,5588</td>
<td>0,2465</td>
</tr>
<tr>
<td>$X_7$</td>
<td>Operational risk</td>
<td>16</td>
<td>0,4706</td>
<td>0,2491</td>
</tr>
<tr>
<td>$X_8$</td>
<td>Liquidity risk</td>
<td>19</td>
<td>0,5588</td>
<td>0,2465</td>
</tr>
<tr>
<td>$X_9$</td>
<td>Credit risk</td>
<td>10</td>
<td>0,2941</td>
<td>0,2076</td>
</tr>
<tr>
<td>$X_{10}$</td>
<td>Equity and funding risk</td>
<td>18</td>
<td>0,5294</td>
<td>0,2941</td>
</tr>
<tr>
<td>$X_{11}$</td>
<td>Other</td>
<td>10</td>
<td>0,2941</td>
<td>0,2076</td>
</tr>
</tbody>
</table>

Significantly, respondents expressed a positive attitude with respect to risk management in the broadest sense, encompassing very uniformly greater numbers of risk: the risks of human resources and liquidity, and the risks of financial reporting, reputation (image), capital and funding. All these risks in the process of governance has led more than half of the respondents, while exactly half of them singled out risk management. This shows that banks and institutions in the banking sector are very dependent on the performance of its business of capital and financing, liquidity, reporting of financial interests which wrapped timely decision making and prevent the negative impact of risks, but also of quality staff and IT technology operational risks, which are becoming global growing opportunity lies and threats.

**Table 2: Realized value, attitude scale (OR), legit function and the estimated value of coefficient of logistic regression (banking institutions).**
Variables | Types of risk | OR | Regression coefficient | Standar. Error
--- | --- | --- | --- | ---
Regression constant | | | 0.3642 | 0.2917
X2 | Strategic risk | 0.3077 | -0.1623 | 0.2084
X3 | Risk of financial reporting | 1.1250 | 0.1512 | 0.1940
X4 | Risk management, governance | 1.0000 | 0.0109 | 0.1945
X5 | Reputational risk (image) | 1.1250 | 0.0620 | 0.1766
X6 | Human resources risk | 1.2667 | 0.3205 | 0.1881
X7 | Operational risk | 0.8889 | 0.3278 | 0.1753
X8 | Liquidity risk | 1.2667 | 0.2440 | 0.1935
X9 | Credit risk | 0.4167 | -0.0745 | 0.2117
X10 | Equity and funding risk | 1.1250 | 0.4280 | 0.1948
X11 | Other | 0.4167 | -0.0262 | 0.2764

Total error (Q): 0.2671
Coefficient of determination (R²): 0.8751
AIC: 35,431

Displayed are observable values relations scale (OR-odds), then the estimated value of parameter logistic regression and, finally, the appropriate standard error estimates. All of these values, as in the case of the previous statistical regression analyze were obtained by software programming procedure, implemented in the programming language "R". Negative values of regression coefficients are present in variable unnamed types of risk, but partly related to strategic and credit risk.

On the other hand, the highest number of estimated values of coefficients of logistic regression, obtained from the above-mentioned software procedure, are positive, pointing to a positive correlation of these variables with the dependent, i.e. with the amount of total income of banks.

Looking at the size of the estimated positive regression coefficients, it is easily observed that particularly high value has the risk of equity and funding and right then, "shoulder to shoulder" following coefficients of operational risk, as well as the risk of human resources. Finally, it was emphasized that all quantitative indicators of quality achieved regression ties have again "favorable" numerical value.

By comparing the obtained values of regression coefficients can be seen that, different types of internal risks have different impacts on the operations of the surveyed banks. Risk average values are slightly more pronounced in risk capital and financing, and reputational image, while others are average values significantly lower and do not exceed the level of positive effects of 10%. As expected, the most banks appointed at risk of equity and funding (25.69%), followed by the positive impact of credit risk management (nearly 18%). There is a significant and positive effect managing reputational and operational risk.

In the case of external risks significantly greater positive impact of risk management has at financial-banking institutions. The degree of correlation, expressed Pearson, varies depending on the type of researched risk. It is the most visible in the liquidity risk (99.92%), while in the case of market risk and financial reporting correlation only slightly exceed 10%. On this basis, it is clear that the management of a variety of internal and external risks of banks have specific impacts on their business, which were confirmed as accurate hypothesis.
The validity of hypothesis H1 has been checked too, by special interviewing respondents about their perceptions of the importance of risk management and plans in the next period (2016 to 2018), to improve risk management. The majority of financial and banking institutions, risk management considers important or even very important (Figure 1).

**Figure 1: Diagram of respondents' attitude on risk management importance (financial and banking institutions).**

**Do you plan to improve risk management in the bank in the period, 2016-2018?**

**Figure 2: Diagram on risk management improvement plans**

**Conclusions**

Key issues of risk in the banking industry, health and performance of banks, increased risk metrics and regulatory actions, pointing to the work of the strategic environment of high risk, competition from inside the industry and non-bank companies, low interest rates, changes in business models are more important issues for banking profitability and sustainability.

Because of that the research results presented in this paper are theoretical actual and funded. The research methods used are appropriate and validated the Hypothesis of the research, that the importance of effective risk management in banking is increasing.

It is also supported with increased regulatory penalties, increased sophisticated cyber-attacks and information security risks, banks are faced with.

The risks in banks are typically the banking business, so there is no neutral banking transactions are not without risks and the adoption of new instruments, new techniques and strategies, financial engineering, new banking products, especially financial derivatives. For
bankers and lenders in general, the uncertainty increases with changes in interest rates, changes in deposits and the borrower not able to serve its loan repayment obligations, but also under the influence of such factors as deregulation, moral hazard, as well as the entry of banks into tasks that previously were not traditional banking.

As a discipline, risk management is more recent and has evolved from the insurance business, because the traditional assurance processes could not effectively and economically solve the problems of risk in all situations.

References


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MEETING THE COMING ORGANIZATIONAL RISK CHALLENGES IN HUMAN RESOURCES

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Abstract

The research presented in this paper concerns challenges of organizational risk in the field of human resources. Research goals are to determine the degree of importance and influence of human risks in order to achieve a more favorable environment for successful business. The empirical research has been conducted in Serbia during 2015, with a sample of 43 companies from the Processing industry. There were mathematical and statistical methods, multiple regression analysis and logistic regression used. Group’s core results showed that over 80% of production companies are aware of the human resources risks and their importance for the business. The contribution of this paper is to prove the scientific significance of the upcoming risks of human resources establishing theoretical and empirical knowledge about the need to improve organization approach to managing these risks.

KEY WORDS: Human resources, Challenges, Organisational risks

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005.96

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Introduction

Focusing on trends, potential changes in important assumptions, development, production companies are increasingly concentrate on minimizing the negative effects. Every firm in processing industry face various risks, which components determination is complex due to great heterogeneity and difficulty in separating business from owner / management (St-Pierre, Bahri, 2006). Globally, the high level of risk in all spheres of business, competition, talent, technology implementation, and R&D, and insufficient level of return associated with them are present (International trade centre, 2009). According to Alpa (2005), the most pressing challenges they face in human resource spectrum are: high degree of employee turnover, management risk (Omolaja, 2015), inadequate management knowledge, shortage of skilled staff, market changes.

The function of risk management is becoming more and more a source of added value in the process of their strategic planning.

The growing awareness of the organization on the necessity of constant innovation, which is directly related to the conversation sector human resources (Sljivic, et al., 2015). New areas of risk that will be increasingly important in the coming period they are related to the organizational culture and the ability of employees to more effectively encourage customer retention development of their preferences, indicating a change in mindset and priorities for corporate leaders. It is essential for enterprises in production to be able to effectively manage risks to survive in highly competitive and slowing down economic conditions. The results show that these enterprises have inadequate resources and restricted know-how and new technologies (Jevtic, Vucekovic, 2014) generally confronted wide-ranging risks of human resources. This paper with its research results supports the importance of monitoring of human resource risks in organizations and management.

Literature overview

The traditional risk management considers risk as distinct threat focusing on downsizing the possible losses from risk events (Investopedia, 2013). According to Stephen, D. (2001) enterprise risk management concerns the process through which business entities in different sectors can measure, govern, and monitor risks from all sources, in order to increase the value of shareholder stake in business. Thus, organizations need to adapt an integrated approach of risk management to mitigate human resource risks, (Olson, Desheng, 2008) to meet the requirement of and sustainability and business growth. As proposed by (COSO, 2004) the risks management in an processing firm would include further interrelated components which must be integrated with the management process: the internal environment comprises of the core philosophy of an enterprise, which influences the risk consciousness of its workforce; objective setting; recognition of possible events that, if occur, will affect the organization, and then conclude whether those events exemplify prospects or whether they might negatively affect the organization’s ability to effectively implement strategy and accomplish goals; risk assessment and response; control activities; ICT information and ongoing monitoring


**Research description**

The basis of this paper is the empirical research conducted on the territory of Serbia, in 2015, in order to examine the attitudes of 43 companies from processing industry on organizational risk, especially those coming from the area of human resources.

The possible effects of various aspects of these risks on business performance, survival and development of the companies are explored.

**Methods used**

A methodological model questionnaire and interview guideline was developed in consultation with the applied methods of Social Research (Floyd, Fowler, 1984).

Analysis of results obtained from the survey were carried out on the basis of the hypothesis:

**H0 : The management of organizational risk in human resource sector has a positive impact on corporate performance of the processing company;**

whose verification is determined by the degree of influence and the importance of managing organizational risks in the fields of human resources, in order to achieve a more favorable environment for successful enterprise business.

There are used methods of:

- descriptive statistical analysis of the observed data; determine the mean value and standard deviation;
- Statistical testing depending on individual variables sample
- The model of multiple regression analysis
- Logistic regression (Jaccard, 2001; Hessels, 2008) to find the model that best suited to data, from the information criterion (AIC) as a quantitative indicator of the general agreement obtained theoretical model in comparison to the empirical data set.

**Key research results**

Characteristics of the surveyed companies and their statistical indicators are shown in Table 1. The first column of Table 1 shows the attribute modalititete five characteristics, and observation of the first group of survey questions. Then, in the next column can be seen response value relative (percentage) frequencies. Finally, the last column of Table 1 contains the corresponding values of Pearson $\chi^2$ statistics, along with the corresponding p-value. These values indicate the significance of the difference between the theoretical value and the expected frequencies within one and the same modality (attributive) characteristics.
Table 1: Main characteristics of interviewed processing companies

<table>
<thead>
<tr>
<th>Description</th>
<th>Percent</th>
<th>$\chi^2$-statistics (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private enterprise</td>
<td>46.90%</td>
<td>34.29** (1.72E-07)</td>
</tr>
<tr>
<td>Part of holding</td>
<td>23.01%</td>
<td></td>
</tr>
<tr>
<td>Public</td>
<td>8.85%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>21.24%</td>
<td></td>
</tr>
<tr>
<td>Position of interviewed person</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td>30.97%</td>
<td>2.65 (0.4495)</td>
</tr>
<tr>
<td>Manager</td>
<td>20.35%</td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td>23.89%</td>
<td></td>
</tr>
<tr>
<td>Consultant</td>
<td>24.78%</td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 100,000€</td>
<td>26.55%</td>
<td>0.805 (0.8483)</td>
</tr>
<tr>
<td>100,000-500,000€</td>
<td>27.43%</td>
<td></td>
</tr>
<tr>
<td>500,000-2,000,000€</td>
<td>23.89%</td>
<td></td>
</tr>
<tr>
<td>Higher than 2,000,000€</td>
<td>22.12%</td>
<td></td>
</tr>
<tr>
<td>Revenue realised</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inland</td>
<td>83.19%</td>
<td>49.78 (1.72E-12)</td>
</tr>
<tr>
<td>Foreign markets</td>
<td>16.81%</td>
<td></td>
</tr>
<tr>
<td>Impact of organisational risks on revenues in 2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenues sustainability</td>
<td>43.36%</td>
<td>5.12 (0.0775)</td>
</tr>
<tr>
<td>Revenues decrease</td>
<td>28.32%</td>
<td></td>
</tr>
<tr>
<td>Revenues increase</td>
<td>28.32%</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05, **p < 0.01

Based on the observed values of characteristics relating to the legal form of the enterprises surveyed, almost half of the sample are private independent enterprises from the processing sector. Observing the structure of positions of respondents within companies, it can be seen their relatively equal representation in the sample. This fact was formally confirmed by the relatively small value of the Pearson statistic ($\chi^2 = 2.65$). The next memorandum describes the level of income of the enterprises surveyed in 2015. It is observed a relatively equal representation of companies within the sample, i.e. represented in almost equal numbers of companies with different levels of income. This is confirmed by statistics, the value of Pearson ($\chi^2 = 0.805$), which compared with other factors here has by far the lowest value. Next, follow the label that describes the sources of income of the enterprises surveyed. Here is dominant number of those revenues realized within the home country (more than 80% of the sample). Only a small portion, less than 17% of companies their income comes from the business abroad.

In the last survey question companies answered how the various organizational/human resource risks impact the amount of their income in 2015. Slightly less than half of the
respondents have confirmed this effect, stated that the influence of different organizational risks led to the sustainability of their income. Finally, an equal number of surveyed companies argued that the impact of the risks highlighted the reduction of actual sales, and believes that the risks are increasing their impact on revenue in 2015.

The second part analyzes the basic characteristics of surveyed companies determined the interdependence of their main activities in terms of the three above-mentioned characteristics: revenue realized in 2015, sources of income, as well as the risk impact on revenues. For this purpose, it is used another form of the Pearson $\chi^2$ test, the so-called test characteristics independence, which describes in detail the theoretical principles of the previous section.

### Table 2: Number of observations, the mean value and standard deviation of human resource risks in processing companies

<table>
<thead>
<tr>
<th>Variable</th>
<th>Kind of risks enterprises monitor</th>
<th>No.positive responses</th>
<th>Proportion $\rho$</th>
<th>Standard dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_1$</td>
<td>Human resource risks</td>
<td>41</td>
<td>0,3628</td>
<td>0,2312</td>
</tr>
<tr>
<td>$X_{11}$</td>
<td>Other</td>
<td>2</td>
<td>0,0177</td>
<td>0,0174</td>
</tr>
</tbody>
</table>

### Table 3: Realized value, attitude scale (OR), legit function and the estimated value of coefficient of logistic regression (processing companies)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Kind of risks</th>
<th>OR</th>
<th>Regression coeff.</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regresiona konstanta</td>
<td></td>
<td>0,51031</td>
<td>6,76E-02</td>
<td></td>
</tr>
<tr>
<td>$X_6$</td>
<td>Human resource risks</td>
<td>0,5694</td>
<td>0,03253</td>
<td>5,66E-02</td>
</tr>
<tr>
<td>$X_7$</td>
<td>Organisational risks</td>
<td>0,5694</td>
<td>0,09968</td>
<td>5,51E-02</td>
</tr>
</tbody>
</table>

**Total error (Q):** 0,2761

**Determination coeff. ($R^2$):** 0,8260

**AIC:** 42,281

In the second part of the statistical analysis on types of human resource risks is described by mutual influence of dichotomous variables ($X_1$, $X_2$, ..., $X_{10}$), describing: the participation of the enterprises surveyed in managing organizational risk, compared to the level of their earned income in the previous 2015. year. Based on the dichotomous nature of the variables that describe the above internal risks which potentially managed surveyed entities, heir interconnectedness and dynamic structure, described by logistic regression analysis, shown as an appropriately chosen model (Figure 1).
Figure 1: Organisational risks in human resources of processing companies

Legend: 54,44% = Capabilities and availability of employees; 45,36% = Omissions in the work of employed; 23,17% = Job security; 3% = Other.

For the purpose to see the effect of different human resource operations as prospective risk of the companies, it has been formed part of the questionnaire with six specific survey questions (dichotomous variables). The values of absolute frequency and therefore the proportion of positive responses of respondents are by far, (Figure 2), the most pronounced in fluctuation risk / retention of employees. Followed by confirmation responses influence the risk of a training plan that would be tailored to the needs and the time of the company, while the frequency of other risk types of human resources, such as the number of abandoned and replaced jobs, often leaving key personnel, the number of legal labor disputes against the company is much less frequent.

Figure 2: The impact of human resource risks, positive responses of the processing industry firms

Similar conclusions can be reached by statistical analysis of estimation of regression coefficients which, together with the OR values, and the corresponding standard errors of assessment, are shown in Table 3. Here are obtained (mostly) positive values, which confirms the validity of the hypothesis A0 to manage organization risk in the field of human resources.
has a positive impact on the operations of the companies. The only negative value of the estimated regression coefficient corresponds precisely to risk aspect- fluctuations rate, and retaining employees who have the highest incidence of positive respondents' answers.

The quality of the resulting logistic regression model confirmed the values of appropriate quantitative indicators.

Table 3: Realized value, attitude scale (OR), legit function and the estimated value of coefficient of logistic regression, all researched aspects of human resource risk

<table>
<thead>
<tr>
<th>Variables</th>
<th>OR</th>
<th>Regression coeff.</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regresiona konstanta</td>
<td>0.4731</td>
<td></td>
<td>4.12 E-02</td>
</tr>
<tr>
<td>X1 Fluctuation rate</td>
<td>0.7937</td>
<td>-0.0644</td>
<td>5.18 E-02</td>
</tr>
<tr>
<td>X2 Training plan adopted to enterprise needs</td>
<td>0.3780</td>
<td>0.0153</td>
<td>6.03 E-02</td>
</tr>
<tr>
<td>X3 No.of abandonedt and replaced jobs</td>
<td>0.1300</td>
<td>0.1140</td>
<td>1.00 E-01</td>
</tr>
<tr>
<td>X4 Frequent quit of key staff</td>
<td>0.0865</td>
<td>0.1399</td>
<td>1.16 E-01</td>
</tr>
<tr>
<td>X5 No.of labor disputes against the enterprise</td>
<td>0.0865</td>
<td>0.1806</td>
<td>9.87 E-02</td>
</tr>
<tr>
<td>X6 Other</td>
<td>0.1078</td>
<td>0.0154</td>
<td>1.05 E-01</td>
</tr>
</tbody>
</table>

Total error (Q): 0.2668
Determination coeff. (R²): 0.8677
AIC: 30.840

Conclusions

Operational risk is present in the everyday functions and services of the organization. Accordingly, these risks may arise from the risks of movement and quality of human resources, property, information systems or processes involved in providing the expected or necessary products or services.

The research results presented in this paper have proven the validity of the hypothesis. Those organizational risks in the field of human resources are of great impact on sustainability and growth of processing companies.

Oposite of the current practice where the most risk activities tend to be understood reactively, thereby reducing the ability of the available resources to mitigate the risk, in future modern business a structured approach to Enterprise Risk Management would be needed, day to day operations and organizational alignment in the field of human resources to the company’s mission and objectives. Through effective human resource risk identification, assessment and mitigation, a processing company would be able in global environment to unlock the valuable upside of risk and create competitive advantage, inevitability, safety, efficacy, flexibility, self-assurance and create value.
References


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‘ENTERPRISE RISK MANAGEMENT’
ESSENTIAL FOR SURVIVAL AND
SUSTAINABLE DEVELOPMENT OF MICRO,
SMALL AND MEDIUM ENTERPRISES

Reena Agrawal

Abstract

The part that Micro, Small and Medium Enterprises (MSMEs) play, both in developed and developing countries, cannot be over emphasized and therefore their existence and survival is a matter of concern not only for the policy makers but also for the researchers. Large number of MSMEs die the same year that they are established. The current research was taken up to understand how MSMEs manage their risk and whether enterprise risk management is essential for survival and sustainable development of MSMEs. The objective of the research was to (1) understand the peculiar nature of the MSMEs which make them vulnerable, (2) explore the various risks confronted by MSMEs, (3) understand how the MSMEs manage their risk, (4) understand ‘Enterprise Risk Management’ and its components and (5) explore the relevance of ‘Enterprise Risk Management’ for the survival and sustainable development of MSMEs. The results show that MSMEs by virtue of their size, inadequate resources and restricted know-how generally confront wide-ranging risks. In MSMEs the management of risk is concentrated in the hands of the owner-managers and there are no systemic linkages between the planning and risk management. Therefore, this study stresses the need for integrating an effective enterprise risk management system with planning and administration within the MSMEs, to avoid fatal consequences.

KEYWORD: risks, risk management, enterprise risk management, sustainable development

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UDC: 005.334:334.7
Introduction

According to Luper and Kwanum (2012), Micro, Small and Medium Enterprises (MSMEs) constitute 99 per cent of all enterprise in Singapore, 95 per cent to 99 per cent of business entities in Organization for Economic Co-operation and Development (OECD) countries. In South Africa the rate is equally high with 90 per cent being MSMEs contributing 80 per cent of employment in the country. In India they contribute 8 percent of the national GDP, comprises 50 percent of total manufactured exports, 45 percent of people employed in Indian industries and 95 percent of all industrial units (Ravi, 2009). So it may be rightly said that Micro, Small and Medium Enterprises (MSMEs) play significant role in industrialization, economic growth and sustainable development of an economy (Ariyo, 2005). According to CBN (2011) and Luper and Kwanum (2012), MSMEs are crucial to the growth of any economy, as they have potential for generation of employment, upgradation of local technology, promotion of entrepreneurship amongst indigenous people and forward assimilation with large-scale organizations. According to FSD (2007) and Azende (2012) MSMEs may look trivial or insignificant but they actually they lay down the foundation of an economically steady country. The plausible advantages which MSMEs renders to a country’s economy include: contribution in terms of production of goods and services, job creation with relatively small capital outlay, reduction in income disparities, development of skilled and semi-skilled labors and alleviation of poverty (Rogerson, 2001). They strengthen both forward and backward linkages amongst communally, financially and geologically diverse sectors of an economy, thereby integrating indigenous people in economic mainstream of the country and also create prospects to cultivate and nurture entrepreneurial and managerial skills within a country (FSD, 2007). As MSMEs are engine for economic growth (Kpelai, 2009), their survival and sustainability is crucial not only for them, but also for the growth and development of a nation as a whole (Ife, 2011).

Micro, Small and medium enterprises (MSMEs) operate in the same business environment as the large corporate houses, but without associated benefits like adequate capital and efficient manpower. They also confront growing competition and pressure fueled by de-regulation, liberalization, globalization and technological disruptions. Berry et.al., (2002); Laforet, Tann, (2006) stated that many micro, small and medium enterprises tend to flourish in difficult times due to closeness to their clienteles, openness to adapt change, malleability and agility, but several others become subject to external blows. Raghavan (2005) noted that MSMEs sectors usually have sole proprietorship and partnership lead by owner-managers. Schultz, (2001) said that MSME owner-managers need to be aware of potential risks, be conversant with risk identification and risk mitigation (Leopoulos et al., 2006), or else they can suffer catastrophic consequences. (Kirytopoulos et al., 2001; Banham, 2004) in their study found that MSMEs need to incorporate risk management into their day to day operations, to combat uncertainties in the business environment, safeguard desired yield and ensure survival and sustainability.

Objective of the Study

The current research was taken up to understand how Micro, Small and Medium Enterprises manage their risk and whether enterprise risk management is essential for survival and sustainable development of MSMEs. The objective of the research was to (1) understand the peculiar nature of the MSMEs which make them prone to risk, (2) explore the
various elements of risk which are usually confronted by MSMEs, (3) understand how the MSMEs manage their risk, (4) understand ‘Enterprise Risk Management’ and its components and (5) explore the relevance of ‘Enterprise Risk Management’ the survival and sustainable development of MSMEs.

**Peculiar Nature of MSME**

Micro, Small and medium enterprises by virtue of their size and the mode of operation are subject to numerous risks. The various peculiarities of MSMEs enterprises, which makes them vulnerable are limited access to finance, inadequate capital, instability, no records lack of proper records, lack of technology, lack of entrepreneurial and management skills, small scale operations with low growth potential (Mwaniki, 2006). Raghavan (2005) pointed out that MSMEs, due to their insignificant size and inherent limitations, might not have sufficient wherewithal, to manage and control risks, which make them susceptible to enterprise risks.

**Risks Specific to MSME**

Like every organization MSMEs face several risks. Determining the components of risk in MSMEs is complex due to great heterogeneity and difficulty in separating business from owner / management (St- Pierre and Bahri, 2006). According to Institute of Charted Accountants (Alpa, et al. 2005) and Singapore Government (2012), the most pressing challenges faced by MSMEs were: high degree of employee turnover, shortage of skilled staff, IT risk, market changes and image impairment. Raghavan (2005) identified the key risks being faced by MSMEs as: business entity which results in absence of professional approach and excess reliance on one or two persons; lack of leverage on financial structure; intensive competition; insufficient profits; poor recovery of book debts; inability to cope with technological advancement, high employee turnover and shallow business understanding among MSMEs. Globally, MSMEs experience difficulty in securing finance because of the high level of risk and insufficient level of return associated with them (St-Pierre & Bahri, 2006; International trade centre, 2009). Risks towards MSMEs can also be classified on the basis of their sources like: risks posed by customers, risks posed by suppliers, risks posed by staff, etc., (CPA Australia, 2009). According to Cotner and Fletcher (2000), the overall risk of MSMEs is a by-product of ‘financial risk’ and ‘business risk’, with business risk comprising risk categories such as management risk (inadequate management knowledge, etc.), commercial risk (client risk and market risk) and technological risk (technology implementation, and R&D etc.).

**Risk Management in MSMEs**

Generally, MSMEs have been defined as high risk ventures with little or no structure for managing risks. According to Federation of European Risk Management Associations (2002) MSMEs were no different from other organizations, but their sizes made them vulnerable to risk, and they rarely have adequate resources to employ dedicated risk management professionals. Mwaniki (2006) in the study revealed MSMEs had weak risk assessment and management strategies in place. Often MSMEs had lack of business records, inadequate staff training, lack of
relevant skills to for good decision making, inadequate capacities to manage risks. Ingirige et. al., (2008), observed that MSMEs specially suffered from poor planning, susceptibility to cash flow disturbances, lack of capital for recovery, unsuccessful interactions with national agencies, infrastructure problems, myopic mindset and organizational culture and access to technical know-how to tackle perceived exposure to risk.

**Enterprise Risk Management**

As businesses grows so does the risks. Thus, organizations need to adapt an integrated approach of risk management to mitigate risk. The concept of ‘Enterprise Risk Management’ was developed in the mid-1990s (David, O. & Desheng, W., 2008) to meet the requirement of business growth and risk management. Stephen, D. (2001) extracted the Casualty Actuarial Society definition of ‘Enterprise Risk Management’ as: The process through which business entities in different sectors can measure, govern, exploit, finance and monitor risks from all sources, in order to increase the value of shareholder stake in business. While traditional risk management considers risk as distinct threat, ‘Enterprise Risk Management’ views risks in the context of overall business strategy, and advocates to identify, measure, respond to and prevent or monitor risks and uncertainties. Traditionally risk management focuses on downsizing the possible losses from risk events, whereas ‘Enterprise Risk Management’ encourage management to identify risks with both the possibility of inherent gain and potential adverse impact (Investopedia, 2013). The two most well-known ‘Enterprise Risk Management’ frameworks include one by Casualty Actuarial Society (CAS) and the other by Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Casualty Actuarial Society conceptualized ‘Enterprise Risk Management’ as a means to increase the value of an organization and the process of ‘Enterprise Risk Management’ was governed by the nature of risk: hazard risk, financial risk, operational risk and strategic risk (CAS, 2013). COSO’s ‘Enterprise Risk Management’ framework is much comprehensive in nature and comprises of eight interrelated components which need to be integrated in the management process to ensure effective and efficient use of resources, resulting in financial profit along with compliance of laws and regulations.

**Components of ‘Enterprise Risk Management’**

As proposed by (COSO, 2004) the ‘Enterprise Risk Management’ consists of eight interrelated components which must be integrated with the management process. The interrelated elements are explained below:

- **Internal Environment**: The internal environment comprises of the core philosophy of an enterprise, which influences the risk consciousness of its workforce and formulates the base for enterprise risk management. It incorporates discipline and code of conduct. Internal environment thus contains establishment’s risk management beliefs; it’s risk appetite; responsibility of the board of directors; the integrity, ethical values, capability of its workforce; the way management allocates duties, authorities, responsibilities and nurtures its people.

- **Objective Setting**: Every organization faces a wide range of risks both from the internal and external sources, and therefore the establishment of clear objectives becomes a prerequisite to effective event identification, risk assessment, and risk
response. The objectives need to be set at strategic level, encompassing the goals and objectives earmarked for operations, reporting, and compliance. Objectives should be brought in line with the organization’s risk appetite, which drives risk tolerance in the organization.

- **Event Identification:** Management needs to recognize possible events that, if occur, will affect the organization, and then conclude whether those events exemplify prospects or whether they might negatively affect the organization’s ability to effectively implement strategy and accomplish goals. Events with adverse impact epitomize risks, which necessitate management’s assessment and response. Events with positive impact epitomize opportunities, which management needs to channelize into its strategy and objective-setting procedures.

- **Risk Assessment:** Risk assessment helps an organization to contemplate the extent to which probable events will have an impact on accomplishment of goals. Management evaluates events from two viewpoints - probability of occurrence and the effect it will create. It normally uses a combination of qualitative and quantitative methods for evaluation. Risks are measured on both an in-built and a residual basis. The positive and negative impacts of potential events should be scrutinized, on individual aspects and on group, and also across the organization.

- **Risk Response:** After having evaluated the pertinent risks, management then determines how it will respond to it. Responses may consist of risk evasion, risk minimization, risk sharing, and risk acceptance. Before finalizing its response, management evaluates the consequences of the response in terms of: probability and impact, costs-benefits analysis, possibility of crafting residual risk. Management also tries to identify any opportunity that might be existing, and formulates an organization-wide, opinion of risk, to decide whether overall residual risk is within the organization’s risk appetite.

- **Control Activities:** Control activities include the guidelines and processes that make sure that management’s risk responses are carried out effectively. Control activities take place all over the organization, at all levels and in all functions. They include a wide range of activities as varied as - approvals, sanctions, authentications, settlements, appraisals of operating performance, security of assets, and classification and allocation of duties and responsibilities.

- **Information and Communication:** Relevant information is recognized, seized, and transferred in a manner and timeframe that allows people to carry out their respective tasks. Information system procures data both from the internal and external sources, makes available necessary information for managing risks and making informed decisions. Effective communication occurs only when there is free flow of information from top to bottom, from bottom to top and across all departments. It is necessary that all personnel understand their own role in enterprise risk management, and also how their individual activity relates to the work of others. There should also be effective communication with external parties, such as clientes, merchants, officials, and stockholders.

- **Monitoring:** Enterprise risk management can be accomplished through ongoing monitoring and evaluations. Ongoing monitoring usually transpires in the normal course of management activities. The scope and frequency of discrete evaluations is principally governed by the assessment of risks and the effectiveness of ongoing monitoring processes and techniques. Any shortcoming in the procedures must be reported to top management and the board of directors.
**Discussion & Conclusion**

Unlike large corporates where the decision making is based on pure analytics and objectivity, the decision making in MSMEs is majorly based on subjectivity and the judgment of the owner-managers. The impediments to MSME success are numerous and varied, and include inherent organizational obstacles such as low education, lack of training and poor managerial skills; business-related glitches such as poor market access, stiff competition, and the entrepreneur’s inability to understand market expectations; and economic environmental issues such as inflation, recessionary trend etc. In an MSME it is the primarily responsibility of the owner-managers to manage the business operations and potential risks. MSME owner-managers’ ignorance of the potential risk and the tools to measures and minimize those risks usually restricts the risk management techniques to risk avoidance and risk transfer through insurance covers. Most risk activities tend to be understood reactively, thereby reducing the ability of the available resources to mitigate the risk. By implanting a structured approach to ‘Enterprise Risk Management’ within MSMEs day to day operations, prospective benefits such as reducing the overall risks, minimization of probable losses, reduction in cost, organizational alignment to the MSME’s mission and objectives can be realized. In order to initiate a sound ‘Enterprise Risk Management’ MSMEs first need to be aware of the prevailing challenges being faced by similar enterprises, both in the domestic and international scenario. This will form the basis of consciously planned and systematic risk management practice, which goes much beyond common sense. An ‘Enterprise Risk Management’ creates a competitive advantage, especially in times of crisis because it helps in identifying lucrative prospects and imminent hazards, and facilitates better corporate governance. Through effective risk identification, assessment and mitigation, MSMEs can unlock the valuable upside of risk and create competitive advantage, inevitably, safety, efficacy, flexibility, self-assurance and create value. The holistic integration of the ‘Enterprise Risk Management’ with vision, mission, goals and activities of MSMEs would definitely result in their longevity and sustainable development.

**References**


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HIDDEN LOSSES IN FINANCIAL REPORTING AND THE MANNER OF HIDING CASE SERBIA - PART TWO

Nenad Kaludjerovic 32, Slobodan Stanojevic33, Marijana Ljubic34

Abstract

There has always been a dilemma whether financial statements are a reflection of the real situation. When financial statements are subject to various conveniences in order to be presented according to the wish of the purchaser, it leads us to the dilemma when and how this happens. This thesis deals with the attempt to start to solve the dilemmas where and when manipulative actions in financial reporting occur. We have carried out researches on selected samples of money losing companies for the period from 2010 to 2013, on the example of financial indicators of the companies which operated in Serbia. Detection of manipulations by means of which loss is hidden in financial statements is very important for the state economy. Under these conditions, development of an adequate method in this area is limited with the international standards of financial reporting. Numerous qualitative and quantitative methods have been used for evaluation of the real and objective components of losses in order to reflect the level of losses in the economy much better. However, in our conditions, there is an universally accepted method which can foresee and evaluate all events and actions that detect hidden losses in financial statements. This thesis presents methods of evaluation (quantitative and qualitative data mining) and how they may be applied in detection of hidden losses in financial statements, by trying to identify a combination of methods which satisfies real needs of a certain task best.

KEY WORDS: creative financial statements, hidden losses, qualitative methods, data mining

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UDC: 657.632(497.11)

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Introduction

During the last 4 years we have dealt with financial indicators of the economy of the Republic of Serbia, which were continuously burdened with reported losses as well as with the fact that the net effect of business economy ended with losses at the end of a calendar year. Besides this, it should be added that, during the last 4 observed years (2010-2013), there has been a total of 5029 companies, with total assets over 6.315 million euros, which went bankrupt. The report on the economy of the Republic of Serbia and comparative indicators for the period from 2010 to 2013 indicate a dramatic downfall of the total economic activity, followed by reduction of financial independence. Such condition of economic activity resulted in reduction of the rate of employment. Namely, Serbia belongs to the group of countries with the highest rate of unemployment, and it precedes in Europe with the highest cumulative rate of inflation and the lowest rate of total investments. Losses of Serbian economy record the growth of 12.260 million euros in 2010, through a projected loss up to 4.716 million euros in 2012, while this loss is smaller in 2013, amounting to 4.115 million euros. However, it should be analyzed separately whether these disclosed data show real losses or more precisely business effects, this is, positive or negative financial results (loss or profit). The reason for this lies in the fact that, according to the methodology of detection, positive or negative financial result also comprises the elements of creative combinations, which enable the employers to postpone the truth about business situation and give them the possibility to mislead other financial institutions. This is why we have devoted ourselves to these researches, in order to detect where this manipulation, this is creativity in financial reporting, occurs. Hidden losses affect macroeconomic factors and they depend not only on these factors (market, business dealings and legislature), but also on microeconomic factors (resources, quality of production, organization, management motives, business environment, political environment etc.) at the same time. In this research, we have tried to detect those factors of losses which are not visible, precisely, which are hidden in financial statements and which affect proper expression of business results (net profit - money earning companies or net loss – money losing companies). We have tried to find out where manifestation form of hidden losses appears in financial statements and where it is annulled or hidden in a manipulative way. Hiding through various forms of financial reporting belongs to manipulative methods, by which reporting of negative business effects is postponed (if a business entity is a money losing company) or fictitious positive effects simulated (if a business entity is a money earning company). Such practice, which became domesticated, left significant consequences on Serbian economy. It is well known that business entities with losses and big assets were liquidated summarily and creditors mostly damnified in economic transformations of the Republic of Serbia, due to financial deregulation. The proof of taking such measures is frequent bankruptcies. The phenomena of continuous losses, evaluation of general causes of their occurrence and their appearance are not analyzed professionally enough. This thesis deals exactly with detection of hidden losses, by revealing manipulative (qualitative) and quantitative (hereinafter referred to as Data Mining – DM) methods of detection of hidden losses, with special emphasis to analysis of characteristics of losses in private and public sector. As a material for this researches, we have used the sample of 1000 companies, 500 money losing companies and 500 money earning companies, thereby taking care to include small, medium and big companies as well as to comprise companies of different organizational form (limited liability companies, joint-stock companies, public enterprises and other companies). The subject of observation are financial statements for 2010, 2011, 2012 and 2013.
Methodology of research

The method of research will be represented in that way that analysis of ratio indicators will be conducted on the selected samples and these ratio indicators will be observed in the context of data mining analysis at the same time. If it is found out that the data obtained in one method of analysis will be valid for another method as well, the category of financial statement which changes business result significantly will be evaluated. Besides the selected method of sampling, key indicators which affect the financial result will be taken into consideration. We will join such indicators in the context of actually associated indicators and through such manner of correcting of the selected financial statements we will conduct other analysis through ratio indicators and Data Mining – DM.

Data from the sample and their representation in total data

Table 1: Overview of Cash earnings of companies (Review 1)

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<td>for economy</td>
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<tr>
<td>which submitted and registered financial statements</td>
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<tr>
<td>sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of (companies) samples</td>
<td>508</td>
<td>501</td>
<td>501</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>% of sample share</td>
<td>0.53%</td>
<td>0.47%</td>
<td>0.47%</td>
<td>0.53%</td>
<td></td>
</tr>
<tr>
<td>Total financial profit in Serbia according to submitted reports in million euros</td>
<td>3,054 €</td>
<td>4,382 €</td>
<td>3,803 €</td>
<td>3,108 €</td>
<td></td>
</tr>
<tr>
<td>sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presented profit in million euros</td>
<td>2,203 €</td>
<td>2,471 €</td>
<td>2,776 €</td>
<td>2628 €</td>
<td></td>
</tr>
<tr>
<td>% of sample share</td>
<td>72.13%</td>
<td>56.38%</td>
<td>73.01%</td>
<td>84.56%</td>
<td></td>
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<tr>
<td>for economy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total financial loss in Serbia according to submitted reports in million euros</td>
<td>4,016 €</td>
<td>3,572 €</td>
<td>3,476 €</td>
<td>1,738 €</td>
<td></td>
</tr>
<tr>
<td>sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presented loss in million euros</td>
<td>544 €</td>
<td>2,813 €</td>
<td>3,310 €</td>
<td>342 €</td>
<td></td>
</tr>
<tr>
<td>% sample share</td>
<td>13.55%</td>
<td>78.76%</td>
<td>95.21%</td>
<td>19.68%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors

We have conducted the analysis of business results, this is detection of hidden losses as well as the manners of losses or profit production applying qualitative and DM methods, based on the selected sample of financial statements: Balance Sheet and Profit and Loss Account. The primary data are taken from business results (net profit in relation to net loss) and elements of financial results (balance accounts and ratio indicators), which were presented in the report on the economy of the Republic of Serbia in 2010, 2011, 2012 and 2013, published by the Republic Business Registers Agency on its website (www.apr.gov). The selected sample of 95002 companies, which is the total number of registered companies operating in the Republic of Serbia, reported the profit
of 3803 million euros, while the profit of 2203 million euros was analyzed in the sample of 508 money earning companies, which is 72.13% for 2010.

The selected sample of 107363 companies, which is the total number of registered companies operating in the Republic of Serbia, reported the profit of 4382 million euros, while the profit of 2471 million euros was analyzed in the sample of 501 money earning companies, which is 56.38% for 2011.

The selected sample of 106539 companies, which is the total number of registered companies operating in the Republic of Serbia, reported the profit of 3054 million euros, while the profit of 2628 million euros was analyzed in the sample of 500 money earning companies, which is 73.01% for 2012.

The selected sample of 94362 companies, which is the total number of registered companies operating in the Republic of Serbia, reported the profit of 3108 million euros, while the profit of 2203 million euros was analyzed in the sample of 508 money earning companies, which is 84.56% for 2013 (Review no. 1).

It is evident that the number of companies in the sample is insignificant, for example, 5% for 2012, while value indicators for the sample, in relation to population of the companies in Serbia, are represented with about 74%. Value indicators of money losing companies are represented with 96%, this is 19.68% in 2013, which indicates that there are few companies being the key generator of the loss of Serbian economy.

Variables

We have divided the most significant features which we used in this analysis in two groups. The first group of features consists of the data reported in financial statements: balance accounts, to which we added total turnover due to more precise loss analysis, namely: other incomes, other expenses, financial incomes, financial expenses, summarized material expenses which are reported in financial statements as well as unproductive costs. Another group of variables consists of the results obtained from ratio analyses, such as: EBIT, income on working capital, net result rate before taxation, number of days of payment, reduced liquidity ratio, contribution margin etc.

Methods

We have analyzed the identification of hidden losses by applying two methods: qualitative and quantitative. From the aspect of qualitative method, it has to be pointed out that a dominant component is expert reasoning, acquired from a decades-long practice in the domain of commercial, public sector and forensic accounting and auditing. By the method of reasoning, key balance accounts and circulation indicators, which are mostly significant for detection of hidden losses of Serbian economy, have been determined. Application of quantitative methods is based on the application of discovering of hidden, this is, submerged knowledge in the data (Data Mining). The technique of classification, which is conducted through supervised machine learning, is typical for these methods as well as classification of relevant features which determine losses versus profit of the company.
Qualitative loss analysis

Qualitative methods of detection of losses are based on the evaluation of the researcher and they don’t differ procedurally from the auditor’s reasoning which is based on practice and experience. In the procedure of qualitative analysis, dominant factors are normative-descriptive analysis of data and descriptive statistics, which are based on detection of the structure of losses and on validity of the structure of incomes and expenses, which is the subject of the next part of the review.

Structure of loss according to the size and organizational form of the company

In the analysis of the structure of loss according to the size of the company (small, medium and big companies) we start from the effects of results (loss versus profit on the macro level) on the level of economy, through the effects of results between total reported profit and loss. The obtained negative business effect of 862 million euros in 2010 was significantly restored already in 2011 and 2012, while in 2013 this effect was significantly manifested and reported in the amount of 1370 million euros (Review no. 2).

Table 2: Overview amount of loss according to the size and shape of organizing companies (Review 2)

<p>| Amount of loss according to the size and organizational form of the company | Review no. 2 In million euros/ |</p>
<table>
<thead>
<tr>
<th>Description/years</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effects of results (1-2)</td>
<td>(962)</td>
<td>810</td>
<td>327</td>
<td>(200)</td>
</tr>
<tr>
<td>Losses according to the size of the company:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Small</td>
<td>1.285</td>
<td>1.314</td>
<td>1.460</td>
<td>1.113</td>
</tr>
<tr>
<td>– Medium</td>
<td>845</td>
<td>666</td>
<td>648</td>
<td>569</td>
</tr>
<tr>
<td>– Big</td>
<td>1.886</td>
<td>1.798</td>
<td>2.248</td>
<td>2.443</td>
</tr>
<tr>
<td>Total loss according to organizational form of the company:</td>
<td>4.016 €</td>
<td>3.572 €</td>
<td>3.476 €</td>
<td>1.738 €</td>
</tr>
<tr>
<td>– Limited liability companies</td>
<td>2.501</td>
<td>2.292</td>
<td>2.434</td>
<td>2195</td>
</tr>
<tr>
<td>– Joint-stock companies</td>
<td>901</td>
<td>1.259</td>
<td>1.284</td>
<td>1424</td>
</tr>
<tr>
<td>– Public enterprises</td>
<td>327</td>
<td>160</td>
<td>536</td>
<td>52</td>
</tr>
<tr>
<td>– Other</td>
<td>123</td>
<td>67</td>
<td>101</td>
<td>444</td>
</tr>
<tr>
<td>Total loss according to legal form:</td>
<td>4.016 €</td>
<td>3.572 €</td>
<td>3.476 €</td>
<td>4.115 €</td>
</tr>
</tbody>
</table>

Source: Authors

What is evident is the fact that losses on the level of the Republic of Serbia were always kept in the amount of 4016 million euros in 2010, while these losses amounted to 4115 million euros in 2013. A negative business effect, amounting to 200 million euros (Review no. 2) appears again in 2013. Such state of data, from the standpoint of loss, leads us to determine which category of the loss is so dominant that it significantly corrects the amount of loss. Losses should be observed from the standpoint of structure of their origin. For the purpose of our research, we have decided to observe them through net effects of financing and effects of other incomes versus other expenses.
Manipulating with the effects of financing

Serbian Business Registers Agency (SBRA) disclosed that a negative financial effect of small companies for a given period (Review no. 3) amounted to 645 million euros in 2010, while this amount increased to 1030 million euros in 2013. The cause of such oscillations of financial effects are differences between granted and received interest rates and currency depreciation of credit debts as well as the interest rate for untimely servicing of liabilities and receivables. Limited liability companies had a negative financial effect amounting to 1.372 million euros in 2010, while they reported a positive financial effect in 2011 and 2012, and in 2013 they had a negative financial effect again, amounting to 680 million euros.

Table 3: Overview Net financial effect (Review no.3)

<table>
<thead>
<tr>
<th>Net financial effect</th>
<th>In million euros/Review no.3</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>− Small companies</td>
<td>(290)</td>
<td>(13)</td>
<td>(398)</td>
<td>(281)</td>
<td></td>
</tr>
<tr>
<td>− Medium companies</td>
<td>(49)</td>
<td>68</td>
<td>72</td>
<td>(202)</td>
<td></td>
</tr>
<tr>
<td>− Big companies</td>
<td>(305)</td>
<td>558</td>
<td>(226)</td>
<td>(547)</td>
<td></td>
</tr>
<tr>
<td>Effects of results</td>
<td>(645)</td>
<td>613</td>
<td>(552)</td>
<td>(1030)</td>
<td></td>
</tr>
<tr>
<td>− Limited liability companies</td>
<td>(1,372)</td>
<td>751</td>
<td>271</td>
<td>(680)</td>
<td></td>
</tr>
<tr>
<td>− Joint-stock companies</td>
<td>756</td>
<td>(62)</td>
<td>(303)</td>
<td>(243)</td>
<td></td>
</tr>
<tr>
<td>− Public enterprises</td>
<td>(29)</td>
<td>(72)</td>
<td>(479)</td>
<td>(103)</td>
<td></td>
</tr>
<tr>
<td>− Other</td>
<td>-3</td>
<td>-41</td>
<td></td>
<td>(4)</td>
<td></td>
</tr>
<tr>
<td>Effects of results</td>
<td>(645)</td>
<td>613</td>
<td>(552)</td>
<td>(1030)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors

According to the report of SBRA (Review no. 4) for 2010, 2,483 companies went bankrupt, while this number increased to 5029 companies in 2013, which is 4% more bankruptcies of companies in relation to 2012. On the average, 400 to 600 companies go bankrupt per year(http://www.alsu.gov.rs/bap/code/navigate.jsp?id=200). The biggest number of liquidated companies and closed bankruptcies refers to limited liability companies. Liabilities (long-term, short-term and accrued costs) of the companies for which the procedure of bankruptcy or liquidation was started ranged from 4.042 million euros in 2010, while they were brought down to 3477 million euros in 2013. The important dilemma for these researches is how liabilities of the companies under liquidation are manifested on the total assets of business companies which operate regularly.

Table 4: Overview Number of established and liquidated companies in Serbia

<table>
<thead>
<tr>
<th>Number of established and liquidated companies in Serbia</th>
<th>Review no. 4</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly established business companies per years</td>
<td></td>
<td>7792</td>
<td>7260</td>
<td>7076</td>
<td>7004</td>
</tr>
<tr>
<td>Liquidated business companies per years</td>
<td></td>
<td>2483</td>
<td>2852</td>
<td>4837</td>
<td>5029</td>
</tr>
<tr>
<td>Value expressed in million euros:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>− Total receivables of liquidated companies:</td>
<td></td>
<td>530</td>
<td>517</td>
<td>1,413</td>
<td>300</td>
</tr>
<tr>
<td>On the basis of financial investments:</td>
<td></td>
<td>330</td>
<td>320</td>
<td>560</td>
<td>443</td>
</tr>
<tr>
<td>− Total liabilities of liquidated companies:</td>
<td></td>
<td>4,042</td>
<td>3,725</td>
<td>2,722</td>
<td>3,477</td>
</tr>
</tbody>
</table>

We haven't found the information that the given investments of the companies under liquidation were written-off. This phenomenon of hiding of investments by the companies under liquidation makes additional negative implications in financial reporting of the companies which submit real financial statements. In our case, the write-off of short-term financial investments for liquidated companies was not registered completely in financial statements. This phenomenon represents the element which affects validity of financial statements. Business entities entered the write-off of financial investments for the given companies only when financial effect left them enough space for reporting a positive financial result in financial statements. In our analysis, we have found out that, if money earning companies wrote-off the investments completely, they would become money losing companies, which would be a warning for creditors to take measures in order to protect their receivables. This means that the companies, which had debts on the basis of negative financial effects and losses in business, had to declare bankruptcy or start liquidation earlier. In this way bankruptcy was delayed as losses were hidden through artificial, positive business effects. Negative financial effects would be increased anyway for the above given receivables which were not entered in financial statements. The implication of such tendency is that negative financial effects of limited liability companies (in our case) were not reported. Joint-stock companies and public enterprises reported negative financial effects in 2012, but the amount of 303 million euros was far less than the amount of joint-stock companies (of open and closed type), while negative financial effects of public enterprises were about 479 million euros and this amount was reduced to 103 million euros in 2013.

This has been explained through the selected, tested samples, where financial income of money earning companies increased from 1.000 million euros in 2010 to 1.030 million euros in 2012 and 1425 million euros in 2013. The same tendency has been noticed in financial expenses. The structure of financial income consists of interest rates obtained from long-term and short-term investments, interest rates from liabilities, interest rates from court judgements, positive foreign exchange differences etc. We have not found the write-offs of financial investments anywhere in the structure of financial expenses, either in the tested sample or in the official reports. This is why we have made a simulation of the financial statement on the tested sample, in order to see what will happen with the financial result when we add the write-off of investments, which were given to companies before the procedure of bankruptcy was started, to financial expenses. In the selected samples of tested companies the dynamics of growth of financial expenses is bigger than financial income in terms of value, which makes a negative financial effect (Review no. 5) both for money earning companies and money losing companies. Namely, financial effects are negative both for money earning companies and money losing companies. Financial effects show financial income and expenses which could not be delayed due to bank obligations, so that they were entered in financial reports more often for the purpose of further cost projection, through the selective write-off of liabilities or receivables, in order to eliminate or mitigate negative financial effects of money earning companies. In the Review no. 5, it can be seen that business companies, this is money earning companies, had to write off financial investments of liquidated companies. Unfortunately, they haven't entered such type of change in their business books. Therefore, a negative financial effect of money earning companies, amounting to 353 million euros in 2010, should be increased for 330 million euros on the basis of the write-off of investments. The same goes for 2011, where negative financial effect should be increased for 320 million euros, in 2012 for 560 million euros and in 2013 for 443 million euros. The expenses which have been identified subsequently through our simulations on the basis of the write-off of investments.
confirm that distorted image was shown in financial statement. This simply means that these indicators will be manifested differently in ratio indicators as well. Therefore, the liquidity ratio which is represented with the coefficient of 0.89 in the total official data will have to replace the liquidity ratio after the write-off of investments with the coefficient of 0.02. This will enable presentation of real liquidity of a company in financial statements.

Table 5: Review of amount of loss in the observed sample of 500 money earning and 500 money losing companies (realized financial effects)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial income:</td>
<td>1.000</td>
<td>1.071</td>
<td>1.030</td>
<td>1.425</td>
<td>194</td>
<td>669</td>
<td>825</td>
<td>986</td>
</tr>
<tr>
<td>Financial expenses:</td>
<td>1.353</td>
<td>1.080</td>
<td>1.263</td>
<td>982</td>
<td>762</td>
<td>1.409</td>
<td>2.037</td>
<td>2088</td>
</tr>
<tr>
<td>Financial effect :</td>
<td>-353</td>
<td>-9</td>
<td>-233</td>
<td>+568</td>
<td>-740</td>
<td>-1.212</td>
<td>-1.102</td>
<td></td>
</tr>
</tbody>
</table>

- Financial liabilities on the basis of investments for liquidated companies (unrecorded write-off) for the write-off: 
  - -330
  - -320
  - -560
  - -443

- Amount which is not entered in financial expenses for joint-stock companies
  - -433
  - 12

(*) Corrected financial effect
  - -330
  - -320
  - -993
  - -445

Source: Authors

In this case, elements of manipulation are expressed through unreported write-off of financial investments of liquidated companies. In our case, it is the amount shown in the Review no. 5 through corrected financial effect.

Manipulation with the effects of extraordinary income and expenses

Table 6: Review of amount of loss in the observed sample of 500 money earning and 500 money losing companies

<table>
<thead>
<tr>
<th>Effects of other expenses on the level of economy. Review 6</th>
<th>In million euros</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>- small companies</td>
<td>(231)</td>
<td>(206)</td>
<td>(402)</td>
<td>-292</td>
<td></td>
</tr>
<tr>
<td>- medium companies</td>
<td>(17)</td>
<td>(95)</td>
<td>(95)</td>
<td>-123</td>
<td></td>
</tr>
<tr>
<td>- big companies</td>
<td>(359)</td>
<td>(182)</td>
<td>(957)</td>
<td>(1425)</td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>(607)</td>
<td>(483)</td>
<td>(1.454)</td>
<td>(1840)</td>
<td></td>
</tr>
<tr>
<td>- Limited liability companies</td>
<td>(512)</td>
<td>(255)</td>
<td>(235)</td>
<td>(246)</td>
<td></td>
</tr>
<tr>
<td>- Joint-stock companies</td>
<td>3</td>
<td>(131)</td>
<td>(120)</td>
<td>(16)</td>
<td></td>
</tr>
<tr>
<td>- Public enterprises</td>
<td>(88)</td>
<td>(95)</td>
<td>(87)</td>
<td>(761)</td>
<td></td>
</tr>
<tr>
<td>- Other entities</td>
<td>(10)</td>
<td>(3)</td>
<td>(1.012)</td>
<td>(817)</td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>(607)</td>
<td>(483)</td>
<td>(1.454)</td>
<td>(1.840)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors

The next segment of detection of hidden features of losses can be found in the effects of regular income and expenses (Review no. 6). Although the correction of business results by extraordinary income or expenses is always present in financial statements in Serbia, its
significance depends mostly on the management policy and even on the national regulations, when the difference between the profit from the last and current period is not enough to cover the total reported negative financial effects in the current year, which also comprise other losses of other entities. However, this phenomenon is characteristic for money earning companies as well. In our selected sample, the reported negative effect of business results amounts to 789 million euros (Review no. 2; =962 million euros in 2010 + 810 million euros in 2011 + 327 million euros in 2012 and minus – 200 million euros in 2013), which makes 6.7% of the total income, while on the level of the whole Serbian economy financial effect is represented with 3.5% (NBS, 2010, 2011, 2012, 2013).

On the level of economy, the effects of extraordinary income and expenses have been analyzed collectively for money earning companies and money losing companies. A negative effect of extraordinary income and expenses (Review no. 6) has been reported in financial statements of big companies in the amount of 359 million euros in 2010, while it was 957 million euros in 2012, and in 2013 it increased cumulatively to the amount of 1425 million euros. This phenomenon is not random, but it is the result of our confirmed research, that the companies had to correct business results in 2013 by means of additional write-offs of investments, which can be seen best in financial statement of big companies. Speaking of small companies, a negative effect of extraordinary income and expenses was 231 million euros and it was reduced to 292 million euros in 2013. Limited liability companies had a negative effect of extraordinary income and expenses of 512 million euros in 2010, while their financial statements show that this amount reduced to 246 million euros in 2013. The effects of extraordinary income and expenses increased significantly, amounting to 817 million euros in 2013. The most dominant implications of this effect can be seen in public enterprises, which were liquidated or for which bankruptcy procedure was started. Extraordinary income and expenses have become the device which may affect managing of business results. This way of manipulation cannot be perceived directly, but the data we have analyzed showed that this phenomenon is a frequent and conscious activity by which financial statements are manipulated. Other expenses hide creators of loss in themselves, as they are an important element of manipulating and determining the direction of effects. In order to check this, we have tested a simulated person, who had to decide what he will enter as an extraordinary income and what as an extraordinary expense. In the data which we have analyzed (Review no. 7), financial effects are negative in the case of the money earning company. The most important item in extraordinary income is the write-off of liabilities to suppliers, although they supplied the goods or service, from which the company received income and entered it in regular financial statements. We deal with this accounting correction of the write-off of liabilities because this is where the so-called creative accounting is applied. This means that it represents the moment of manipulating with the outcome in financial operations, through result fixing, so that it does not reflect the real situation. By removing, this is, writing off of liabilities to suppliers, we have got the implication that a negative business effect based on an extraordinary income has the tendency of growth, both for money earning companies and money losing companies. Simply said, a manipulative action of removing of data on an extraordinary income was performed. The obtained negative effect of loss for 2010, amounting to 487 million euros and for 2011, amounting to 1.755 million euros, point out that the minimum loss will be 2.261 million euros in the coming years. In this case, profit from regular business will increase from 1.137 million euros in 2010 to 2.043 million euros, which will result in a negative business effect of 487 million euros in 2010 to 2.261 million euros in 2012. Analyzing the sample, by removing the written-off liabilities
from extraordinary expenses, we got the situation in which business effects were negative exactly for the amount of extraordinary income.

Table 7: Review of correction of effects of results based on removing of extraordinary income in the observed sample of 500 money earning companies and 500 money losing companies and their financial effects

<table>
<thead>
<tr>
<th>No.</th>
<th>Review of correction of effects of results based on removing of extraordinary income in the observed sample of 500 money earning companies and 500 money losing companies and their financial effects</th>
<th>Money earning company /Review no. 7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Position / year</td>
<td>2010</td>
</tr>
<tr>
<td>1</td>
<td>Business income</td>
<td>21,822</td>
</tr>
<tr>
<td>2</td>
<td>Business expenses</td>
<td>19,669</td>
</tr>
<tr>
<td>3</td>
<td>Business profit</td>
<td>2,153</td>
</tr>
<tr>
<td>4</td>
<td>Business loss</td>
<td>50</td>
</tr>
<tr>
<td>5</td>
<td>Financial income</td>
<td>1,000</td>
</tr>
<tr>
<td>6</td>
<td>Financial expenses</td>
<td>1,353</td>
</tr>
<tr>
<td>9</td>
<td>Other income</td>
<td>452</td>
</tr>
<tr>
<td>10</td>
<td>Other expenses</td>
<td>663</td>
</tr>
<tr>
<td>11</td>
<td>Profit from regular business before taxation</td>
<td>1,539</td>
</tr>
<tr>
<td>12</td>
<td>Extraordinary write-off based on creditors liquidation:</td>
<td>-330</td>
</tr>
<tr>
<td>13</td>
<td>Loss from regular business before taxation</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Effect of results (Profit from regular business – loss from regular business (correction-consequence of the manipulation))</td>
<td>1,209</td>
</tr>
</tbody>
</table>

Source: Authors

As we have mentioned previously, an extraordinary income mostly appears based on the write-off of liabilities to suppliers (No. 9 of the Review no. 7). The write-off of liabilities to suppliers is the phenomenon that is present, but only when it has its real essence. This means that all legal, time and material conditions have been met to apply the write-off and report its effects in financial statements, which is not the practice in most cases.

We have tried to determine the fate of all purchased goods and services, based on which a liability to suppliers occurred and which became an operating extraordinary income upon liquidation of the creditor. This write-off is covered from liquid funds, but they can go in other direction as well, which is the subject of a separate analysis – detection of money laundering mechanisms.

Application of quantitative methods - Data Mining

Data Mining (DM) is a method of the interactive process of detecting relations and models manually or automatically. The essence of DM is that the research process scenario is not based on pre-defined hypotheses which constitute the „required” results (Kantardzic, 2002). We are of the opinion that such methodological design of the domain of application of DM is significant for detection of hidden losses, this is financial classification of business entities into money losing companies and money earning companies. We have not used the application of DM method for prediction of losses or profit, but for determining of certain ratio indicators which affect losses significantly.
In the domain of application of DM, identification of hidden losses in financial statements is a typical problem of classification, which consists of two procedures. In the first procedure, the model is learned by application of the trained sample (supervised learning), while in the second procedure the samples are classified into those which belong to a determined set or which do not belong to this set, as the final phase of variations of accuracy of results.

Table 8: Ratio indicators

<table>
<thead>
<tr>
<th>Features</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>General liquidity ratio</td>
</tr>
<tr>
<td>2.</td>
<td>Reduced liquidity ratio</td>
</tr>
<tr>
<td>3.</td>
<td>Cash liquidity ratio</td>
</tr>
<tr>
<td>4.</td>
<td>Business assets turnover ratio</td>
</tr>
<tr>
<td>5.</td>
<td>Fixed assets turnover ratio</td>
</tr>
<tr>
<td>6.</td>
<td>Current assets turnover ratio</td>
</tr>
<tr>
<td>7.</td>
<td>Supply turnover ratio</td>
</tr>
<tr>
<td>8.</td>
<td>Days turnover ratio</td>
</tr>
<tr>
<td>9.</td>
<td>Liability turnover ratio</td>
</tr>
<tr>
<td>10.</td>
<td>Number of days of collection</td>
</tr>
<tr>
<td>11.</td>
<td>Working capital turnover ratio</td>
</tr>
<tr>
<td>12.</td>
<td>Turnover ratio of liabilities to suppliers</td>
</tr>
<tr>
<td>13.</td>
<td>Number of days of payment of liabilities to suppliers</td>
</tr>
<tr>
<td>14.</td>
<td>Level of use of fixed assets plus working capital</td>
</tr>
<tr>
<td>15.</td>
<td>Level of use of working assets plus long-term resources</td>
</tr>
<tr>
<td>16.</td>
<td>Level of coverage of supplies and accrued receivables with net working capital</td>
</tr>
<tr>
<td>17.</td>
<td>Involvement of working capital in long-term resources</td>
</tr>
<tr>
<td>18.</td>
<td>Contribution margin</td>
</tr>
<tr>
<td>19.</td>
<td>Business result rate</td>
</tr>
<tr>
<td>20.</td>
<td>Net result rate before taxation</td>
</tr>
<tr>
<td>21.</td>
<td>Net result rate</td>
</tr>
<tr>
<td>22.</td>
<td>Income on commercial property</td>
</tr>
<tr>
<td>23.</td>
<td>Income on working capital</td>
</tr>
<tr>
<td>24.</td>
<td>Duration of business cycle</td>
</tr>
<tr>
<td>25.</td>
<td>Duration of cash conversion cycle</td>
</tr>
<tr>
<td>26.</td>
<td>EBITDA</td>
</tr>
<tr>
<td>27.</td>
<td>EBIT</td>
</tr>
<tr>
<td>28.</td>
<td>Financial result</td>
</tr>
<tr>
<td>29.</td>
<td>Other results</td>
</tr>
<tr>
<td>30.</td>
<td>Class</td>
</tr>
</tbody>
</table>

Decision Tree learning method (Decision Trees, DT)

Decision Tree learning is a process of creation of discriminatory function in the form of decision trees (Cherkassky et al., 2005). The tree is created recursively, from the top (root) to the leaves, so that every knot of the tree represents a logical test of value of certain feature from the description of the problem, while leaves represent the class into which the example is classified. During creation, the choice of features for every knot is done by heuristic methods, based on evaluations of quality discrimination of the (sub)set of examples from the training set, which have remained to be discriminated in the observed knot. Although the tree may classify all examples from the training set perfectly, this is not a guarantee of high accuracy for new examples, as they are often overfit to training examples. Due to this, they are simplified in practice, giving smaller trees, which are more precise and comprehensible at the same time. In our analysis, we have used the well-known algorithms of decision tree learning, namely C4.5 (Quinlan J. P., 1996)), which are available within the WEKA (University of Waukamo) (Witten et al., 2005), in order to select the related features. The main advantage of the decision tree is its significant manner of knowledge representation through the extraction IF-THEN of classification rules.
Learning method of production rules (Rule Learning, RL)

Production rules are logical expressions of implications forms, by which classification of examples into one of the provided classes is done based on the known values of features. (Cherkassky V., Mulier F. M., 2007, Witten I. H., Frank E., 2005). The set of rules is more often created by the method of version spaces or by division of the training set on subsets (separate and conquer) and their description by means of logical expressions, which may be propositional (without quantifiers) or predicative (first order or, exceptionally, higher orders). Likewise the decision tree, the learned set of rules does not need to describe training examples perfectly. A special variant is decision lists, where the rules are used sequentially (the well-known example of algorithms of learning of propositional rules is RIPPER (Forsyth R. (ed), Machine Learning: Principles and technics, London: Chapman and Hall, 1989.), which are available within the WEKA system).

Selection of features

Forming of an adequate model is done based on the foreknowledge of the problem and it is often brought down to the selection of an adequate set of features. The existence of irrelevant and redundant (inessential, unnecessary) features in the model of a problem has a negative effect on the performances of most methods of inductive learning, and therefore such features are not often taken into consideration owing to previous or built-in feature selection (Cherkassky V., Mulier F. M., 2007, Witten I. H., Frank E., 2005). The optimal set of features contains all relevant features, while redundant and irrelevant features are usually not taken into consideration, although these irrelevant and redundant features potentially contain information which may have an impact on improving of classification performances in practice (Cherkassky V., Mulier F. M., 2007.). In the review, we will use some methods of previous selection of features, which were built in the WEKA system (Witten I. H., Frank E., 2005., Maindonald J., Braun J., 2007.), for additional check of the importance of certain features from the problem model.

Data – ratio indicators

From the integral sample based on which quantitative analysis has been conducted, all four years were taken – from 2010 to 2013, with the ratio about 50%:50% of money earning companies and money losing companies respectively. The sample contains 3457 entities – companies which have been classified using 29 features – ratio indicators and the target feature „Class“ with two values, for money earning company and money losing company respectively (Review 1). For the purpose of the functional analysis, ratio indicators have been evaluated from the aspect of binary classification (for example, favourable with 1 and unfavourable with 0, this is, unfavourable general liquidity ratio < 1 with 0 and favourable general liquidity ratio > 0 with 1). Thus binary classified features have presented the influence of ratio indicators on loss or profit of the observed entities – business companies and budget users. In this enclosure, three above mentioned Data Mining methods have been applied, namely Decision Tree-DT, Rule Learning-RL and Feature Selection.
Results of the analysis

As mentioned above, we have applied three alternative models. Firstly, Decision Tree by application of the WEKA (University of Waikato), Tanagra (Ricco RAKOTOMALALA) and Sipina Research Edition software – learning trees C4.5. The model has been made with the confidence interval of 0.05. We have used the whole sample as a training set. One decision tree has been obtained, this is, the structure IF-THEN of classification rules (Figure 1). The model has been tested in relation to the training set and it has classified correctly money earning companies with the accuracy of 96% and money losing companies with 96% as well.

As we can see in the Figure 1, the algorithm has found a splitter feature EBIT ratio indicator.

- EBIT =0
  - Income on working capital = 0
    - Net result rate before taxation= 0
      - Financial result = 0
        - Other results = 0 then Class = MONEY LOSING COMPANY (96.05 % of 886 examples)
        - Other results = 1
          - Level of use of fixed assets plus working capital = 0 then Class = MONEY LOSING COMPANY (70.15 % of 67 examples)
          - Level of use of fixed assets plus working capital = 1 then Class = MONEY LOSING COMPANY (76.97 % of 59 examples)
    - Financial result = 1 then Class = MONEY LOSING COMPANY (69.49 % of 59 examples)
  - Net result rate before taxation = 1 then Class = MONEY LOSING COMPANY (100.00 % of 92 examples)
    - Income on working capital = 1 then Class = MONEY LOSING COMPANY (99.26 % of 135 examples)
- EBIT = 1 then Class = MONEY LOSING COMPANY (99.20 % of 1004 examples)

More specific, the decision tree has identified with the accuracy of 96% that classification in money earning companies and money losing companies was based on the EBIT ratio indicator, whose structure was determined by the following elements: profit before taxation + financial expenses (costs of interest rates) + Taxes. This means that, if this index is favourable, this is, if it equals1 (EBIT=1), 1.004 money earning companies are clearly classified (99,20%).

If EBIT equals 0, this is, if it is unfavourable, then the decision tree branches out into the following sequence of negative indicators – if Income on working capital (Net profit rate*working capital turnover ratio) = 0 and if Financial result (Financial income – Financial expenses) = 0 whereas Other results (Other income – Other expenses) = 0, then 968 money losing companies which generate about 40% of money losing companies are classified.

Namely, due to manipulative actions in financial reporting, total liabilities are reduced by subsequent write-off of business liabilities, which gives distorted image in the evaluation of involvement of working capital in long-term and short-term resources, as resources are reduced and profit corrected in total sum due to the fact that a significant part of the result is negative (especially in 2012 and 2013 => Review no.7). Therefore, operating profit is never final, as negative financial effects, this is, consequences of manipulating with the financial statement undermine it. Application of the method of inductive rules
The second method which has been used is the method of learning of RIPPER rules from the WEKA system, which has found logical patterns, this is, which has learned 4 rules, with a significant number of counter examples from the training set. The estimated accuracy of the sets of rules is 96.6% of the accuracy of the priori classification.

JRIP rules:

=========

1. (EBIT = 0) and (Number of days of payment of liabilities to suppliers = 1) and (Level of use of fixed assets plus working capital = 0) = Class=MONEY LOSING COMPANY (759.0/21.0)

2. (EBIT = 0) and (Other results = 0) and (Financial result = 0) and (Income on working capital = 0) = Class=MONEY LOSING COMPANY (290.0/40.0)

3. (Number of days of payment of liabilities to suppliers = 1) and (EBIT = 0) and (Income on working capital = 0) and (Net result rate before taxation = 0) and (Liability turnover = 0) = Class=MONEY LOSING COMPANY (10.0/3.0)

4. (EBIT = 1) = Class=MONEY EARNING COMPANY (1470.0/31.0)

Number of Rules: 4 (four)

Review 2. Inductive rules for the model of basic business indicators

Rule 1: The inductive rule reads that if EBIT is negative = 0 and if the number of days of payment to suppliers is positive = 1, and if the level of use of fixed assets plus working capital is a negative indicator, then 759 money losing companies are generated.

Rule 2: reads that if EBIT = 0, if other results = 0, if financial results = 0 and if Income on working capital = 0, then 290 money losing companies are generated.

Rule 3: If number of days of payment to suppliers = 1, if EBIT = 0, if Income on working capital = 0, whereas net result rate before taxation = 0 and if Liability turnover = 0, then only 10 money losing companies are generated.

Rule 4: for EBIT = 1, 1.968 money earning companies are generated.

Application of the method of feature selection

The results of the WEKA feature selection (2 class). The best subset is obtained by various methods of examining and evaluating of feature subsets and this subset gives the most accurate rules (trees). Some methods also give numerical scores for individual features.

The method called Relieff (each feature is evaluated separately) has given the following results:

<table>
<thead>
<tr>
<th>Feature</th>
<th>average merit</th>
<th>average rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBIT</td>
<td>0.387 + 0.016</td>
<td>1.1 + 0.3</td>
</tr>
<tr>
<td>Income on working capital</td>
<td>0.362 + 0.005</td>
<td>1.9 + 0.3</td>
</tr>
<tr>
<td>number of days of payment of liabilities to suppliers</td>
<td>0.325 + 0.018</td>
<td>3.5 + 0.5</td>
</tr>
<tr>
<td>EBITDA</td>
<td>0.328 + 0.01</td>
<td>3.5 + 0.5</td>
</tr>
<tr>
<td>Turnover ratio of liabilities to suppliers</td>
<td>0.263 + 0.014</td>
<td>5 + 0</td>
</tr>
<tr>
<td>Duration of cash conversion cycle</td>
<td>0.2 + 0.011</td>
<td>6.5 + 0.5</td>
</tr>
</tbody>
</table>
Using the method called Relieff, it has been estimated that the most important features are EBIT, Income on working capital, Number of days of payment to suppliers, EBITDA, Turnover ratio of liabilities to suppliers and Duration of cash conversion cycle. All other features have the value less than 0.2 of participation in the scale of significance of features.

**Validation of learning accuracy by the method of cross validation**

<table>
<thead>
<tr>
<th></th>
<th>Recall</th>
<th>1-Precision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money earning company</td>
<td>0.9333</td>
<td>0.0245</td>
</tr>
<tr>
<td>Money losing company</td>
<td>0.9658</td>
<td>0.0915</td>
</tr>
</tbody>
</table>

Application of the training set in order to evaluate the model performances has certain biases – deviations. In many cases, models remember the sample instead of training data (data over fitting). In order to eliminate this, we have applied a 10-fold cross validation.

The method of cross validation or rotary estimation divides accidentally the set of examples D on \( \kappa \) mutually disjoint subsets of the examples \( D_1, D_2 \ldots D_\kappa \) whose size is approximately the same (Cherkassky V., Mulier F. M., 2007, Witten I. H., Frank E., 2005). Learning procedure and evaluation are repeated \( k \) times, using one subset \( D_k \) as a tight set every time. Total accuracy is calculated as the relation of the number of correct classifications and total number of examples in the set D.

Such estimation of prediction accuracy is a random number, which depends on the division of examples on subsets.

In the case of application of the Decision Tree, the overall cross validation error rate was from 0.0535, to 3.006%.

**Conclusion**

Analyzing money earning companies and money losing companies as a part of financial statements of business entities, which are the final exponents of the business result, we have obtained a cumulative indicator that business loss of the total economy was 12 billion euros in one year, while its value was reduced for 2/3 in the next year. It should be added to this conclusion that the economy neither had significant investments nor an added value in the observed years. In other words, net effect of the total economy increased constantly. The selected sample of 1000 business entities which we extracted from one calendar year, where it was estimated that the loss of the total economy was halved, served for detection where this effect of loss reduction disappears in financial statements in the following years, while the level of borrowing and other ratio indicators disclose completely opposite business effect of the total Serbian economy. This research and the conclusions we drew from it are based on the obtained results of the analyzed financial statements for 2010-2013, where we analyzed 500 money earning companies and 500 money losing companies respectively.

Disclosure of hidden losses in financial statements and manipulation with financial statements itself should be the essential job of forensic accountants as well as auditors.
However, the aim of this conclusion is not to invite investigators, but to indicate the significance of application of quantitative analysis and to point out that hidden or manipulative actions may always be recognized in the context of data observation through further course of the analysis. The predominant role of application of DM method, as a quantitatively oriented method, is to perform classification and prediction in the procedure of detection of hidden losses. In that sense, DM method is dominant and highly accurate – its accuracy is even up to 100%. The methods we have used showed that EBIT ratio indicator is dominant, as it helps us, in combination with the indicators mentioned above, to determine whether a company is a money earning company or a money losing company.

On the other hand, insufficiency of other indicators, which are related to income and expenses that are not entered in financial statements, is the main disadvantage in the application of these methods in the domain of detection of hidden losses. On the contrary, qualitative analysis is based on decades of experience and it gives us more fruitful results. For illustration, there is no possibility for flexible treatment of certain public data, such as costs of currency depreciation, in which the state participated itself in 2008 and 2009, when it decided that entities might decide themselves when and how they would enter negative effects based on currency depreciation in financial income and loss, especially for 2010 and 2013. In this way, many companies delimited costs deliberately, which resulted in less reported total losses in 2012 and 2013. This phenomenon of manipulating with results continued to be applied in the period from 2010 to 2013. In the cases we have analyzed, financial effects affected total result in the way that it was corrected artificially, so that the loss of economy, amounting to 12 billion euros in 2010, was reduced to 4.7 billion euros in 2012 and 4.1 billion euros in 2013. This fact led us to use only quantitative analysis in order to detect the moments of manipulating with financial statement observing the result structure. Qualitative analysis has given us important answers to the question what manipulative elements are and where they are exposed in one way or another. Data mining analysis, besides its possibility of perfect selection, cannot give a good answer to the question in which direction business results go. This is because it relies on the published data that cannot be affected anymore. In the cases which we have analyzed in quantitative analysis through conscious revision – correction or fixing of results, it has been explained where the exposed phenomenon occurs and who the carriers of such corrections are. Using the quantitative analysis, we have come to the conclusion that the phenomenon of manipulating with results and the manner in which this manipulation happens are characteristic for limited liability companies. This companies may take the risk, as they are responsible only to the amount of their founding deposit. It should not be ignored that the amounts of deposits of limited liability companies are always less than the turnover they have.

The data obtained in the DM analysis, which relies on ratio evaluations, may lead us to the wrong conclusion that there is a pattern in economic trends. We have seen in our analyses that EBIT which 1500 entities reported (for one calendar year), together with other ratio indicators, are extremely negative. This is confirmed in the following cases:

a) Liquidity evaluation – where an entity reports positive result, while it is insolvent according to all liquidity ratios and indicators;

b) Level of involvement of working capital is higher for money losing companies than money earning companies;

c) The reported collection rate for the entities which reported EBITDA is more than 365 days and even up to 3 years for certain entities, and the same situation is with money losing companies.
These are the reasons which have led us to the conclusion that the manner of manipulating with data in financial statements is closely related to only one operation and one business item, this is, the result and changes of data are a corrected factor which participates with more than 7-15% of the value of correction in total results. We haven't neglected this fact and therefore we have concentrated our researches on the results after EBIT, as the indicators of extraordinary income appear after regular business dealings and they are closely related to the impact of an external factor. This is why quantitative analysis was conducted to discover the first step to detection of the manner and determination of the elements which may decide the fate of a business entity significantly, this is, whether it will be a money earning company, a money losing company or an independently exposed indicator on the market which may show the actual state of events.

Therefore, quantitative analysis and Data mining analysis have to be observed together, in order to define certain patterns. If these patterns do not exist, this is if one of analyzed indicators does not have economic explanation of its appearance and disappearance, it is not the indicator, but the element for hiding and delaying of the fate of a certain business entity.

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APPLICATION OF THE EVOLUTION THEORY IN MODELLING OF INNOVATION DIFFUSION

Milan Krstic 35, Ana Skorup 36, Djordje Minkov 37

Abstract

The theory of evolution has found numerous analogies and applications in other scientific disciplines apart from biology. In that sense, today the so-called “memetic-evolution” has been widely accepted. Memes represent a complex adaptable system, where one “meme” represents an evolutional cultural element, i.e. the smallest unit of information which can be identified and used in order to explain the evolution process. Among others, the field of innovations has proved itself to be a suitable area where the theory of evolution can also be successfully applied. In this work the authors have started from the assumption that it is also possible to apply the theory of evolution in the modelling of the process of innovation diffusion. Based on the conducted theoretical research, the authors conclude that the process of innovation diffusion in the interpretation of a “meme” is actually the process of imitation of the “meme” of innovation. Since during the process of their replication certain “memes” show a bigger success compared to others, that eventually leads to their natural selection. For the survival of innovation “memes”, their manifestations are of key importance in the sense of their longevity, fruitfulness and faithful replicating. The results of the conducted research have categorically confirmed the assumption of the possibility of application of the evolution theory with the innovation diffusion with the help of innovation “memes”, which opens up the perspectives for some new researches on the subject.

KEYWORDS: evolution theory, “memes”, innovation, diffusion, modelling

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Introduction

The laws passed so far have contributed to the clarification of numerous phenomena in nature. Widening the fields of new cognitions opens new unknown horizons which are worth of further research. Past researches have often pointed to some elements of analogy, based on which, the ideas taken from a scientific field were applied for the solution of suitable problems in other fields where it was mostly about partial acts, restricted to certain specific fields (Bulat, 2000).

As the confirmation of the analogy in the field of natural sciences the analogy can be named between the electric and mechanical systems, which is also manifested through the existence of an analogy between the equations which describe their behaviour. In that way it is possible to introduce the analogies of the electric system and suitable mechanical systems and vice versa (Bakshi, Bakshi, 2009).

In the context of quoted applications of analogies in other fields, it can be talked about the application of Darwin’s Theory of Evolution, especially the Law on natural selection in the interpretation and studying of innovation diffusion.

When it comes to Darwin’s Law on the Natural selection, Sir Karl Popper (Radnitzky, Bartley, 1993) states his point of view: “My selection was that the doctrine of natural selection is the highest metaphysical research programme. That causes detailed problems in many areas, and that tells us what we would expect from an acceptable solution of these problems. I still believe that natural selection works this way as a research programme”.

Genrich Altshuller (1926 - 1998), a famous Soviet inventor and author of the TSPI Theory - Theory of Solving Problems Inventively (Lerner, 1991) discovered that technical systems do not evolve by accident, but their evolution follows certain patterns which he called the “evolution laws”. The evolution laws are patterns of the evolution which characterize the evolution of technical systems and can thus help predict their development in the future (Leon, 2006).

Based on Darwin’s Law on Natural Selection, Dawkins introduced a generalization of laws on natural selection, where the cultural transmission is analogous to genetic transmission, with which he widely opened the door to the application of evolution theory in other scientific disciplines.

Dawkins (Dawkins, 1999) starts from the Evolution law that life as it is known to us evolves with differential surviving by replicating entities. The replicative entity, prevailing on Earth is the DNA molecule, i.e. the gene. It does not exclude the possibility of existence of other replicative entities as well, which will, on condition of fulfilling of certain conditions, start producing their replicas (copies) and “almost inevitably tend to commence the new evolution of its kind”. Moreover, he considers that since recently on this planet a new kind of replicators has appeared. They still float in their “seminal soup”, but are already achieving evolitional changes which highly surpass the genes in that. New seminal soup is created from human culture. The culture personalized in its manifesting elements such as language, fashion, food, religion, customs, art, architecture, engineering, technology and other, as viewed in historical time develops in such a way that one gets the impression that it is a very accelerated genetic evolution, although culture has absolutely no connection with genetic evolution.

In searching for the adequate name for a new replicator, Dawkins introduced the term “mieme” which has a Greek root, but he shortened it into meme in order to make an analogy with the biological replicator gene. Meme is” a noun which expresses the idea of a unit of
cultural transfer, i.e. the unit of imitation”. The examples of memes can be melodies, ideas, phrases, clothes fashion, the way of making pots, etc.

Memes are promoted in the pool of memes, analogously as the genes do in the pool of genes, walking from a person (brain) to person (brain) through the process of self-replicating, which in the broader sense can be called imitation. As in the natural selection not all the genes in the pool of genes are equally successful in replication, the analogy works for all the memes in the pool of memes. For the survival of replicators, particularly memes, three characteristics are the key ones: longevity, fruitfulness and faithful replication. Longevity is about how long the memes are going to stay in the head (brain) of a person. Fruitfulness implies how much the meme is acceptable by the people acceptors. Faithful replication is the matter of communication and it deals with degradation of the message during the transfer of information.

The quoted theory based on the evolution of memes – “meme-evolution”, today is already widely accepted. It can be said that memes represent a complex, adaptable system where a meme can represent an evolutional cultural element, i.e. the smallest unit of information which can be identified and used to explain the evolution process.

Meme evolution has found its application in various fields of social sciences. Some examples of the application of memes on solving particular problems are worth mentioning. That is why two examples of such application will be presented in the following part of the text.

The first example is Simulation of innovation of technical artefacts by (Khanafiah, Situngkir, 2004). Evolution is the process of a gradual change, by which the simpler kinds are transformed into more and more complex kinds by cumulating characteristic changes in inheriting, from generation to generation. Due to the activity of evolution the descendant of the kind, unlike his ancestor, will have several different characteristics. In that sense Phylogenetic analysis is used to present the cluster of all the descendants of one common ancestor. Phylogenetic analysis is usually interpreted as a system of branching of a tree, or the diagram known as the phylogenetic tree, and it is conducted by a systematic analysis, through making of the history of the species and the evolution of the relation between the descendants and their ancestors, based on the similarity of characteristics as the basis of comparison. From the meme perspective, an innovation can be considered an accidental mutation of the code of meme (artefact). Mutation is seen in the replacement of one code with another code of the meme (artefact). Artefact is the phenotypic meme (or a phemotype) which came from its genotype (memetype). In the particular case, a technological artefact is a mobile phone of the brand Nokia, whose meme evolution is researched, picture 1.

It is evident from the work that the methodology of the application of memes can be successfully used as a perspective analytical tool for the analysis of technological innovation.

![Figure 1: The Phylomemetic tree of a Nokia phone made by the application of UPGM - Unweighted Pair Group Method with Arithmetic Means](source: Khanafiah, Situngkir( 2004))
The second example is the Study of economic development on the side of demand (by Dahlan, Situngkir, 2010). The evolutional economy contains new entities which have different qualitative characteristics. The idea of qualitative change makes it possible to consider three important phenomena in economic life: innovations, substitutions of products and transformations of consumers’ behaviour. The evolution of demand process has been researched from the point of meme. In particular case there are two kinds (sequences) of meme (memeplex) which represent the economical product as well as the preference of consumers. The evolution model of demand sees the usefulness as the function of the distance between two kinds (two types of sequences) of memes (memeplex), which represent economic products and preferences of consumers. An innovation is defined as a change in the kind of memes on the specific economic product. In the result of the analysis there are 4 kinds of demand (Table 1), i.e.: “statistical demand”, “dynamic demand without evolution”, “demand limited by the evolution”, and “viable evolution of demand”.

### Table 1: The conditions of demand depending on the presence of innovation

<table>
<thead>
<tr>
<th>States of demand</th>
<th>Without innovation</th>
<th>There is innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without the transformation of preference</td>
<td>&quot;Statistical demand&quot; no dynamics or qualitative change</td>
<td>“Demand limited by the evolution” dynamic demand, but qualitative characteristics can be trapped in a quasi-stabile state</td>
</tr>
<tr>
<td>There is a transformation of preference</td>
<td>“Dynamical demand without evolution&quot; only dynamics requests, but not the evolution</td>
<td>“Sustainable evolution of demand” dynamic demand and a full qualitative change except for the most superior and the most inferior products</td>
</tr>
</tbody>
</table>

Source: Dahlan, Situngkir(2010)

Starting from the principle of application of memes in the quoted cases, the authors are introducing the hypothesis that similar principles, i.e. evolutional theory based on memes is possible to apply in the case of considering the process of innovation diffusion. In that sense a theoretical research has been conducted whose results will be presented in the further text of the work.

**Diffusion of innovations**

Based on the process definition (Krstić, 2013) innovation can be understood as an innovational process (or a cluster of innovational activities), i.e. a specific process in which an idea is born about the need of carrying out a change (creating ideas), then a change is conducted up to the level of its commercialization (realization of invention), and in the end it is adopted by a certain social system (diffusion). So, a complex innovational process, in a relatively simplified vision, can be presented by a sequential process, which consists of three key sub processes, or phases (Figure 2), such as:

- The first phase – creating of the idea is the phase which directly precedes the invention;
- The second phase – of the realization of invention is the phase which directly precedes the innovation; and
- The third phase – diffusion of the innovation is the phase which directly precedes the level of acquiring the innovation.
The way out of the second phase are inventions, or commercially promising ideas. The way out of the second phase are realized innovations, or the ideas brought to commercial application. The way out of the third phase is the level of acquiring the innovation, i.e. the diffusion of innovation.

![Figure 2: Phases of innovational process](Image)

Diffusion of innovations can be defined as a process by which an innovation is acquired and its acceptance by an individual is achieved (an individual, a person) or a certain social system (a certain group of people). The basic elements of diffusion of innovations are: innovation, communicational channels, time and a social system.

The theory of diffusion has four basic regularities and they are: innovational decision-making, individual innovativity, the level of acquiring and the attributes of perception.

**Innovational decision-making** is the regularity of the diffusion of innovations which is related to decision making about accepting innovations by an individual (a group of people). Innovational decision-making is a happening concerning innovations which lasts, i.e. the process which takes place in time and goes through the following stages: discovery about an innovation, persuasion about the innovation, decision-making about the innovation and confirmation about the innovation.

**Individual innovativity** is a regularity of the diffusion of innovations which is related to the distribution of individual characteristics of people which can be presented by the bell-shaped percentage distribution of the division of certain categories of people by acquiring innovation. Based on the presented, people can be classified in the following categories of acquirers looked at from the left to the right of the distribution into: innovators, which represent up to 2.5% of the human population; early acquirers, which represent up to 13.5% of the human population; early majority, which represent up to 34% of the human population; late majority which represent up to 13.5% of the human population and the ones left behind which represent some 16%.

**The level of adoption** is the regularity of diffusion of innovations by which it takes place constantly all the time during the lasting of the innovation, i.e. the life cycle of the innovation and it expresses the level by which the innovation has been acquired, and it is represented by the co-called s-curve, which shows the character of adoption of the innovation. According to it the adoption of the innovation first goes through the period of slow and gradual growth, then through the period of a relatively dramatic or rapid growth of adoption of the innovation, and in the end it comes to the gradual stabilization and possible slowdown of adoption of the innovation.

**The attributes of perception** represent the regularity of diffusion of innovations which comprises the main characteristics of the innovation related to which the potential adopters most often mark and rate an innovation, and those are: usefulness, the possibility of a trial, a relative advantage, visibility, complexity and compatibility.
Modelling of innovation diffusion from the perspective of memes

In order to interpret the modelling of diffusion of innovations from the perspective of memes, one should start from the process definition of an innovation presented in picture 2. The third phase of the quoted innovation process has been set aside as a separate picture and is presented in picture 3, and can now be viewed as a separate independent process, i.e. the process of diffusion. It is evident from the picture that the innovation is an entrance into the process of diffusion of innovations, and that the exit from the process of diffusion represents the level of its adoption by a certain social system (a social group). Of course, by the innovation on the entrance into the process of diffusion, in this interpretation a cluster of relevant information is implied about the innovation which has just appeared.

![Figure 3: The process of diffusion of the innovation](image)

Since in the general case a meme is the replicative carrier of information about an entity, in the particular considered case when it is applied to the process of innovation diffusion, which is presented in the picture 3, it can be concluded that at the entrance to the process of diffusion there lies the meme of the innovation.

As soon as a certain innovation appears, or a relevant information about the innovation becomes available, the conditions are made for forming the meme of innovation (a replicator) which alone takes over the role of replicating and begins to make its own replicas (copies), and with this the evolution of that kind of meme begins. In the wider sense, the described appearance can be called an imitation, which, according to Dawkins (1999), implies a process within which the memes are propagated.

If everything said before is taken into consideration, it can be concluded that the process of diffusion of innovations in the interpretation of a meme is actually the process of imitation of the meme of innovation.

During the process of replicating of the meme of innovation from the pool of memes, not all the memes of innovations are equally successful, actually some of them are more successful than others, which eventually leads to their natural selection. For the survival of the meme of innovation three characteristics are the key ones, and they are: longevity, fruitfulness and faithful replicating.

Longevity of the meme of innovation depends on where and how it is kept. If the meme of innovation is kept only in the memory, or the head (brain) of a person, its longevity will depend on the duration of memory of the given person and it is limited by the human lifespan, but if it is saved and/or some hard copy medium (printed, CD, DVD, memory card, etc.) its longevity can be significantly prolonged.

The fruitfulness of the meme of innovation depends on how much the meme of innovation has been acceptable by the people acceptors. Replicating, or the survival of a meme of innovation will depend on how much the meme is acceptable from the point of view of potential users of the innovation. This dimension of the innovation meme can also be
quantitatively expressed. For example, the number of years necessary for a certain innovation meme to reach 50 million of carriers (users). Thus it took 75 years for the telephone, 38 years for the radio, 13 years for television, 4 years for the internet, 3.5 years for Facebook, 35 days for the game Angry Birds (WSJ, 2015). From the above quoted it can be concluded that from the perspective of a meme, the innovation diffusion - is the fruitfulness of the innovation meme, or the speed of replicating, figure 4.

![Figure 4: The fruitfulness of the innovation meme](source.png)

Source: Author

The faithfulness of replicating of the innovation meme is the thing which concerns communication and is related to degradations of the message, to which it comes during the transfer of information. It is known that the communication chain forms the set of elementary communication connections. The longer communication chain, i.e., as the number of transmission points increases, the probability of deformation of the message in transfer increases as well. (Lewis, 1987)

From the characteristics of the faithfulness of replicating comes the fact that the innovation memes are transferred from people to people in a changed shape. It seems that the transmission of the innovation meme is rather the subject of a continuing mutation due to deformation of the message than the result of recombination of memes in the pool of memes.

In the pool of memes there are several kinds of memes, for example, Facebook, Twitter, LinkedIn and so on. Among the innovation memes, the competition is set up, it can be said that they indulge in some sort of a competition with each other, not only on the basis of affection of attention, but also based on information resources.

Based on affection of attention innovation memes of an individual person (or the person’s brain) fight for supremacy in the attention of a person compared to the rival memes. If an innovation meme attracts the attention of a person (brain) in a larger scope, it has to do it on the account of decreasing the attention of the person to another innovation meme – a rival, i.e. the competitor.

Based on information resources innovation memes compete with other innovation memes for supremacy over resources which are crucial for communication. In other words, the resources for which innovation memes compete are time (within electronic mass media, for example radio, TV, the internet,) and space (written, printable, exhibition, advertising and others, such as for example space in newspapers, on a fair, on a billboard, etc.).
Regularities of diffusion from the perspective of a meme

In order to make the mosaic of innovation diffusion from the perspective of a meme, in further text, the basic **regularities of diffusion** are considered from the perspective of a meme (innovational deciding, individual innovativity, the degree of acquiring and the attributes of perception).

*Innovational decision making* from the perspective of the innovation meme is accepting the meme and it is related to making decisions concerning the acceptance of meme by an individual or by more of them (a group of people). The acceptance of a meme, or the process which takes place in time goes through the following steps: the knowledge of a meme, the persuasion about the meme, decision making about the meme and the confirmation of the meme.

*Individual innovativity* from the perspective of innovation meme is the individual acceptability of the new memes. It is related to the division of individual characteristics of people in the view of accepting the new memes and can be presented also by a bell-shaped percentage distribution of divisions of the certain categories of people by the issue of the speed of acquiring the meme, which viewed from the left to the right of the distribution consists of: meme innovators, which make 2.5% of the human population; early meme acquirers which make up to 13.5% of the human population; late meme majority, which make up to 34% of the human population and meme delayers who make up to 16% of the human population.

*The level of acquiring* from the perspective of a meme is the fruitfulness of the meme, picture 4. It is represented by the continuous process which throughout the whole time of lasting of the meme expresses the level to which the meme has been acquired, and it is interpreted by the so-called s-curve, which shows the character of acquiring of the meme, starting with the period of a slow and gradual growth, continues with a period of a relatively dramatic accelerated growth and finally finishes with a slower growth.

*The attributes of perception* from the perspective of a meme comprise main characteristics, or *the attributes of a meme* related to which the potential acquirers most often evaluate and rate them, and these are: usefulness, possibility of a trial, relative advantage, visibility, complexity and compatibility of the innovation.

**The basic elements of the diffusion of innovations from the perspective of a meme**

In order to complete the mosaic of innovation diffusion from the perspective of a meme, in further text from the perspective of a meme, **the basic elements of diffusion of innovations** are considered (innovation, communication channels, time and social system).

*Innovation* from the perspective of memes is a meme (of innovation) which can be considered new for a person or a certain group of people.

*Communication channels* from the perspective of a meme represent the way in which memes travel from one person (brain) to another.

*Time* from the perspective of memes is the dimension of a meme which appears first with the acceptance of a meme, as a frame of the fruitfulness of a meme.

*The social system* from the perspective of memes is represented by a person (the brain of the carrier of a meme) or the cluster of people (brains carriers of memes).
Results and discussion

The results of this research have made it possible for the innovation diffusion to be presented in the meme domain, i.e. from the perspective of memes, as it was done in figure 5.

Figure 5: The process of diffusion of innovation from the realistic and meme perspective

Source: The author

Since the diffusion process is built (and represented) by the relevant factors of the process (regularities and basic elements), the quoted factors are also represented with suitable meme elements. The meme presentation of relevant factors of the process has made it possible to make their table with a comparative account of the realistic and meme perspective, table 2.

Table 2: Relevant factors of the process of diffusion of innovation from the realistic and meme perspective

<table>
<thead>
<tr>
<th>Regularities of diffusion</th>
<th>Realistic perspective</th>
<th>Meme perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>innovation</td>
<td>inovational decision-making</td>
<td>acceptance of a meme</td>
</tr>
<tr>
<td>individual innovativity</td>
<td>individual acceptability of the new memes</td>
<td></td>
</tr>
<tr>
<td>level of adoption</td>
<td>fruitfulness of memes</td>
<td></td>
</tr>
<tr>
<td>attributes of perception</td>
<td>attributes of memes</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elements of diffusion of innovation</th>
<th>Realistic perspective</th>
<th>Meme perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>innovation</td>
<td>meme</td>
<td></td>
</tr>
<tr>
<td>communication channels</td>
<td>the way memes travel</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>dimension of memes</td>
<td></td>
</tr>
<tr>
<td>social system</td>
<td>person (brain)</td>
<td></td>
</tr>
</tbody>
</table>

Source: The author
Conclusion

The theory of evolution has found numerous applications and analogies in other fields of science. From the realized cases of practical application of evolution theory out of biological sciences so far, the scientific field of innovations has proved to be very suitable for that purpose, which was confirmed by some examples of application, which were presented in the paragraph of Introduction of this work.

In this work it all started from the assumption that the evolution theory, or the theory of meme is possible to apply successfully in the interpretation of diffusion of innovations. The findings to which the authors came, which are presented in the paragraph Results and discussion of this work, unambiguously confirm the correctness of the introduced assumption.

When it comes to the diffusion of innovations the results of the research offer the possibility to explain more closely the question of how to conduct the diffusion of innovations.

Thanks to this work, the diffusion of innovation has been interpreted from the perspective of memes by which the assumptions were made for further researches in this field.

References


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STUDYING THE RELATIONSHIP BETWEEN BRAND EQUITY AND CONSUMER BEHAVIOR

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Abstract

The present study was conducted to investigate the relationship between brand equity and consumer behavior. In today's competitive world, where the consumer is faced with a broad range of products made in different countries, companies should further seek to identify the factors of customers’ trends towards products to encourage customers to select and purchase the product.

In the model proposed in this study, the relationship between brand equity and the dimensions of consumer behavior including the willingness to pay for extra cost, brand preference and purchase intention is investigated. The research method is a descriptive correlational. Structural equations and descriptive and inferential statistics and factor analysis were used to analyze the data.

The statistical population of the study includes the owners of Grand Vitara, Sportage and SantaFe from the companies of Iran Khodro, Kia and Hyundai. The population was unlimited including 384 people using Cochran formula; and cluster sampling and endemic questionnaire tool were used.

In the marketing literature, the lack of empirical research that seeks to explore the relationship between brand equity and consumer behavior is tangible. This research focuses on those reactions that provide more sales and the ability to grow. According to the results, it seems that there is a relationship between brand equity and consumer behavior including paying extra cost, brand preference and purchase intention.

KEYWORDS: brand equity, purchase intention, brand preferences, willingness to pay extra cost

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UDC: 005.346:005.936.43
005.52:330.133.3
Introduction

In the business world today, one of the main concerns of marketing managers is searching for ways to increase sales and profitability products. Successful brands try to establish a sense of trust because creating strong ties to the customer is one of the main bases of trade (Jing et al., 2015).

One of the most common strategies to achieve this goal is to understand the relationship between consumer behavior and brand and brand equity, because the brand equity is often an indication of its quality which affects the choice of consumers [2]. In recent studies, the importance of emotional relationship between the customer and the brand has been approved (Gianfranco Walsh et al., 2015), and these studies strongly emphasize that the brand equity is not only achieved by the goods and services, but also by interactions between buyers and sellers (Ballantyne, Varey, 2006; Grönroos, 2011; Payne et al., 2008; Jing et al., 2015).

It seems that brand equity from the perspective of consumer is an appropriate starts to assess product equity which contains a lot of interrelated dimensions such as brand awareness, brand quality, brand association and brand loyalty (Jing et al., 2015). This relationship includes mutual exchanges between the brand and consumers by a duplicate set of actions that has many advantages for both sides (Huang, Kandampully, 2012). The goal of any brand is to attract and retain customers to ensure the success of the brand and the product (Zavattaro et al., 2015) and it is observed that consumers are looking for brands that have specific features (Garsvaite, Caruana, 2014; Londoño et al., 2016). Brand equity is a powerful tool to improve marketing productivity (Cai et al., 2014) and evaluating brand equity is an effective way to measure customers’ satisfaction and brand performance by marketing managers (So, King, 2010; Sung Ho et al., 2015).

The main purpose of this article is to illustrate the relationship between brand equity and brand preference and consumer’s intention to purchase. The study also seeks to understand how we can create a successful brand by understanding the consumer behavior in the competitive market today.

Research Background

- In a study entitled “Studying the effect of brand equity on consumer response, Hosseini et al. (2009) concluded that there is a positive significant relationship between the four dimensions of loyalty, quality, awareness and willingness to spread brand.
- Karbaspour, Yardel (2009) conducted a study entitled “Evaluation of brand equity and the affecting factors from the consumer’s perspective. The results showed that brand loyalty and association factor have direct impact on brand equity, and the factor of perceived quality has indirect impact on brand equity through loyalty.
- In a study entitled “Evaluation of the impact of brand equity on the continuation and promotion of customer relationship in the banking industry” Bavarsad et al. (2013) found that the willingness of customers to adopt Internet banking services is under the direct influence of brand equity.
- In a study entitled “Evaluation of the impact of brand equity on the consumer behavior in cellphone and computer shopping malls”, Anaraki et al. (2013) discussed the proposed model and confirmed the role of brand equity dimensions on customer reactions.
Brand Equity: Most studies about brand equity in the past two decades have been developed based on almost two frameworks: Acker’s brand equity and brand equity from a consumer perspective of Claire type. Acker was the first person who has studied the concept of brand equity. According to Acker, brand equity consists of four dimensions: brand loyalty, brand awareness, perceived quality and brand association (Zhuowei, Liping, 2015).

Brand loyalty: Studies show that brand loyalty creates a sense of attachment between the customer and the brand manufacturers (Pedeliento et al., 2015). Brand loyalty depends on the consumers’ brand recognition, and brand awareness and its image are important factors in the brand loyalty. Lua et al., 2015). In each brand, the purpose is to attract and retain loyal customers to ensure the success of the brand and the product (Zavattaro et al., 2015). Two dimensions are considered for brand loyalty: emotional and practical dimensions. Emotional loyalty represents the consumer’s preference and willingness to a particular brand where the actual purchase behavior is not occurred yet. While practical loyalty represents the actual behavior of consumer’s purchase of a particular brand (Lin, 2015).

Brand awareness: customers’ way of speaking about a brand indicates the brand awareness (Zavattaro, 2015). According to Claire, brand awareness affects the consumer behavior towards the marketing of that product. Brand awareness occurs when the consumer has a deep and specific image of the product in mind (Zhuowei, Liping, 2015). Customers achieve brand knowledge through direct experiences such as use of the product or service, and indirect experiences such as advertising and marketing (Lua et al., 2015).

Perceived quality: It includes the customers’ judgment of the advantage, excellence, credibility and a brand difference compared to other competing brands. Perceived quality not only affects other aspects of the brand, but also has impact on the classification of the product from the customer’s perspective (Aaker, Joachimsthaler, 2000). Once customers trust a brand, they prefer that particular brand among a wide range of products even if the price is higher than competitors’ products (He, Wang, 2014).

Brand association: The value of a brand is often based on associations to which it is linked. Associations such as the name of Ronald McDonald can create a positive attitude or feeling about the brand that has been attributed to.

Association of areas of application such as aspirin and heart attack can be a reason to purchase which eventually attracts customers. Strong association could be a basis to expand the brand (Aaker, Joachimsthaler, 2000).

Brand equity refers to the rational assessment of brand customers and can be a measuring tool for consumers’ attitude toward the brand (Lin, 2015). In recent years, writers like Ailawadi, Lehmann, Neslin (2003), Tong & Hawley (2009) argue that the brand equity is measured based on the consumers’ perspective (de Oliveira et al., 2015).

It can be said that the consumer behavior is the set of actions and processes that consumers apply at the time of information collection, purchase, evaluation and use of products and services to meet the needs and create the utility (Belch, Belch, 2004). In this paper, three aspects of consumer behavior in the face of the brand, including paying extra costs, brand preference and purchase intention, are studied.
**Paying extra costs**

In branding, the term refers to the difference between the prices received by a brand owner in the face of the same recommendations. A strong brand can make more money based on perception of quality, uniqueness and its other associations (Buil et al., 2013). The basic idea of using a brand refers to the enhancement of the value of a product when the producers realized that competition through price leads to lower profitability. Profitability reduction through price competition made them to apply methods to increase loyalty and brand value.

One of the factors that indicate the individuals’ willingness to determine the extra costs is the consumers’ perspective towards brand equity (Zavattaro et al., 2015). Thus, the following hypothesis is raised:

**H1.** Brand equity is associated with the consumer's willingness to pay extra costs.

**Brand preference**

Brand preference can be the start for the consumers’ decision to buy. Some studies show that there is a positive correlation between brand preference and consumers’ decision to buy (Tolba, Hassan, 2009).

We can say that a brand is valuable in the eyes of customers when customers prefer them to other brands, and have the name of brand and its attributes in mind for a long time (Kumar et al., 2004).

Over time, services and products become more similar to each other, because competitors imitate the new products quickly. This makes it difficult for consumers to differentiate products (Chang et al., 2015). The main purpose of advertising and promotion operation is to achieve excellence, a place where a brand is more favorable than its competitors. Brand excellence is essential to consumers in the purchase of products (Buil et al., 2013). So the following hypothesis is raised:

**H2.** Brand equity is associated with brand preference.

**Purchase intention**

Purchase intention points to the consumer’s willingness to purchase the product of a brand (Belch Vilch, 2004). When purchase intention is higher, it is also more likely to purchase. So, purchase intention is the most important predictor of purchase behavior (Long-Yi, Jui-chi, 2012).

Branding studies show that brand equity is an important factor in the consumers’ purchase intention increase and encourages them to buy more (Jing et al., 2015). Purchase intention is one of the steps of purchase intention, because it studies the behavior of the consumer to purchase a particular brand. Consumer’s intention to buy a brand is formed not only by the attitude toward the brand, but also by considering a series of other brands (Shah et al., 2012). Thus the following hypothesis arises:

**H3.** Brand equity is associated with the customer’s purchase intention.
Research conceptual model

According to what was said in Theoretical Foundations, the conceptual model is as follows:

![Conceptual Model Diagram]

Research Methodology

Considering that the aim of the study was to analyze the relationship between brand equity and consumer behavior, research is a practical by goal. It is descriptive and correlational in terms of data collection and, in particular, it is based on structural equations. Structural equation model is a statistical comprehensive approach that tests the hypothesis related to the relationship between observed and latent variables. With this approach, the acceptability of theoretical models in specific communities can be tested, and since most of the variables in management research are latent, the use of these models will be increased.

Data collection tools: Tools used include valid and reliable questionnaire, library studies, interviews and free interview and the internet, each of which has been used in the area of research for compilation of the specific data.

Validity and reliability: content validity and Cronbach's test were used to review research and assess the reliability of the research, respectively. Since the obtained value of Cronbach's alpha for all variables is higher than 0.7, it can be said that the questionnaire has acceptable reliability.
In this study, descriptive statistics were used to display demographic information. The following demographic information is extracted from 384 questionnaires:

Gender: Based on the analysis of the research findings, 55.3% of respondents were men and 44.7% women.

Level of education: Based on the analysis of the research findings, 10.9% of respondents had diploma or were under diploma, 30.04% Associate Degree, 36.4% B.A., and 22.3% M.A. and higher.

Age: Based on the analysis of the research findings, 11.4% of respondents were under 20, 18.2% between 20 and 30, 25.2% between 31 and 40, 29.9% between 41 and 50, and 15.3% above than 50.

Purchase history: Based on the analysis of the research findings, 34.5% of respondents had purchase history of 1 to 3 years, 31.7% 3 to 5 years, 20.5% 5 to 7 years, and 21.8% more than 7 years.

Inferential statistics: In this study, statistical inference related to data analysis and hypothesis testing is used. In the first stage, data normality is investigated using the Kolmogorov - Smirnov test. Then, the structural validity of all three variables and indicators derived from them are examined using confirmatory factor analysis. Finally, research hypotheses are tested using structural equation modeling and correlation coefficient.

Before getting to the stage of hypothesis testing, it is necessary to ensure normality of data information in order to use tests according their normality. In this test, if the achieved significance level of the test is larger than error i.e. \( \alpha = 0.05 \), \( H_0 \) or otherwise, \( H_1 \) will be verified.

\( H_0 \): The data are not normal (they are not from the normal population)

\( H_1 \): The data are normal (they are from the normal population)

Kolmogorov-Smirnov test table for research variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paying extra costs</td>
<td>0.062</td>
</tr>
<tr>
<td>Brand preference</td>
<td>0.083</td>
</tr>
<tr>
<td>Purchase intention</td>
<td>0.320</td>
</tr>
<tr>
<td>Brand equity</td>
<td>0.301</td>
</tr>
</tbody>
</table>

Since the significance level for research variables is greater than 0.05, \( H_1 \) is confirmed and we conclude that the data collected are normal for variables.

![Structural equation modeling of the conceptual model (standard estimation)](image-url)
**Figure 2:** Structural equation modeling of the conceptual model (significance of coefficients)

**Table 3:** Path coefficients, t-statistic and the coefficient of determination (predictor variable: brand equity)

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Path coefficient (β)</th>
<th>t-statistic</th>
<th>Total coefficient of determination (R^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paying extra costs</td>
<td>0.58</td>
<td>8.91 **</td>
<td>0.34</td>
</tr>
<tr>
<td>Brand preference</td>
<td>0.73</td>
<td>11.58 **</td>
<td>0.53</td>
</tr>
<tr>
<td>Purchase intention</td>
<td>0.51</td>
<td>7.09 **</td>
<td>0.26</td>
</tr>
</tbody>
</table>

**p < 0.01  * p < 0.05**

According to path coefficient (0.58) and t-statistic (8.91), it can be said that: at the significance level of 99%, there is a positive and significant relationship between brand equity and paying extra costs; so, the first hypothesis is significant and it is confirmed.

Multiple coefficient of determination (R^2) is 0.34. This factor investigates the ability to predict the dependent variable by the independent variable. Accordingly, the variable of brand equity has been able to predict 34% of the changes in extra costs.

According to path coefficient (0.73) and t-statistic (11.58), it can be said that: at the significance level of 99%, there is a positive and significant relationship between brand equity and brand preference; so, the second hypothesis is significant and it is confirmed.

Multiple coefficient of determination (R^2) is 0.53. This factor investigates the ability to predict the dependent variable by the independent variable. Accordingly, the variable of brand equity has been able to predict 53% of the changes in brand preference.

According to path coefficient (0.51) and t-statistic (7.09), it can be said that: at the significance level of 99%, there is a positive and significant relationship between brand equity and consumer’s purchase intention; so, the third hypothesis is significant and it is confirmed.

Multiple coefficient of determination (R^2) is 0.26. This factor investigates the ability to predict the dependent variable by the independent variable. Accordingly, the variable of brand equity has been able to predict 26% of the changes in consumer’s purchase intention.
Research conceptual model fitness

Various indices were used to evaluate the fitness of the model including Root Mean Square Error of Approximation: The first index to determine the fitness of the model is root mean square error of approximation shown as RMSEA. When the value of this statistic is less than 0.05, it indicates that the model has a good fitness; Absolute Fit Indices; Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI): These indices should be between zero and one, and values greater than 0.9 indicate acceptable model fitness. Relative fit indices show the extent to which the model fitness is more appropriate than the base line model which is the model of independence. These indices include: Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI).

With the exception of NNFI index, values of all indices of this group are between zero and one and when their values are closer, they represent a good model fit (NNFI amount may be greater than one). In general, working with LISREL program, each of the indices obtained for the model, does not alone show the fitness model, but indices should be interpreted together.

Table 4: Research conceptual model fitness indices

<table>
<thead>
<tr>
<th>Index name</th>
<th>Limit</th>
<th>Obtained value</th>
</tr>
</thead>
<tbody>
<tr>
<td>X2/df</td>
<td>3 and less</td>
<td>1.73</td>
</tr>
<tr>
<td>NFI</td>
<td>0.9 and more</td>
<td>0.96</td>
</tr>
<tr>
<td>NNFI</td>
<td>0.9 and more</td>
<td>0.97</td>
</tr>
<tr>
<td>IFI</td>
<td>0.9 and more</td>
<td>0.97</td>
</tr>
<tr>
<td>CFI</td>
<td>0.9 and more</td>
<td>0.97</td>
</tr>
<tr>
<td>GFI</td>
<td>0.9 and more</td>
<td>0.94</td>
</tr>
<tr>
<td>RMSEA</td>
<td>Less than 0.08</td>
<td>0.043</td>
</tr>
</tbody>
</table>

Discussion and Conclusion

Relations between the brand and consumer are one of the most important structures that have important roles in profitability and obtaining competitive advantage by companies. This has led marketing researchers to focus on this issue. Hosseini has shown that there is a positive relationship between the dimensions of brand equity but the dimensions of consumer behavior are not mentioned. Karbaspour and Yardel suggested that brand loyalty and association, and perceived quality have direct and indirect impact on brand equity, respectively. Bavarsad reached the conclusion that in banking industry, customers’ willingness to accept banking services is affected by brand equity. Anaraki concluded that the special dimensions of brand have impact on the reaction of customers.

This study examines the relationship between brand and consumer in terms of brand equity, willingness to pay extra costs, and brand preference and customer purchase intention, because one of the ways of identifying product position in the market is to measure brand equity to the customer.

According to this study, it seems that brand equity is associated with some aspects of consumer behavior including willingness to pay extra costs, brand preference and purchase intention. And there is a stronger relation between brand equity and brand preference than
the two other variables. We can say that a strong brand creates added value for products that leads to customer preference in selection. In the later stages of purchase behavior, brand preference may lead to more payment and purchase intention by the consumer.

**Research Limitations**

1. Like other studies of behavioral sciences, this study also has limitations. The most important limitation is the qualitative factors that must be converted to quantitative variables to become measurable.

2. The purpose of the study is to examine the effects of brand equity and consumer behavior. Because of the variety of products and brands in the automotive industry, the researcher is forced to limit his research area. Because of these limitations, extension of the results of this research to other brands and products must be done with caution.

3. Using questionnaires, due to reasons including personal perceptions of respondents, variables specialty, etc. has always been a major constraint for human scientists.

**Recommendations**

In fact, trying to be a brand is the same effort to sell and profit more; that is why it is believed that the brand is the most valuable asset of any business.

It is suggested that companies with sufficient knowledge of the target market,

- Focus more on these markets.
- Identify loyal customers and give them special privileges
- Create a foundation for lasting in the minds of customers using good communication techniques
- Create a complete image of the brand in the mind of the audience and reinforce the brand image created
- Use market analysts to monitor the customer's needs at different times

**Suggestions for Future Research**

- Insert advertising variable into the research model
- Evaluate the association of the brand in the mind of the audience when hearing the brand name
- Examine the audience perception of the quality and other values of the brand
- Study the previous experiences of the audience in interaction with the brand and brand strength in recalling these experiences
References


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JUVENILE PRISON IN PARALLEL LEGISLATION

Mitar Lutovac 41, Ivan Joksic 42, Borislav Bojic 43

Abstract

The need for punishment of juveniles occurred from the time when there was no clear line separating them from the adult criminal population. At the same time, the evolution of the juvenile punishment is not in itself involve substantial changes to their criminal status. On the contrary, the status of minors in society did not show serious differences regarding the status of young adults, as well as the adult elderly. On the other hand, on the ground of their punishment is recorded deviations that go in the direction of application of mild corporal punishment. Closing the minor was performed in a physically separate parts of the general penal institutions with the use of a lower degree of restrictions while serving juvenile prison.

Due to the different treatment of minors during the evolution of their criminal status leads to their different treatment in comparative law. That is why we are witnessing the existence of numerous differences in the juvenile punishment in some countries in the world. On the European continent there is a wide range of different legal solutions when it comes to punishing juveniles. There are considerable differences in the procedure pronouncing juvenile prison and in particular penal treatment of juveniles in penitentiary institutions. For these reasons, the author has decided to show the basic statutory provisions in the part that relates to the issue of punishment of minors in the legislation of individual countries.

KEYWORDS: punishment of juveniles, juvenile prison, penal treatment, retention of juvenile imprisonment, the court.

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Introduction

Canada

Canada is a country where the legal scene is a specific combination of two legal systems: the Anglo-Saxon and European-continental. In this duality are located institutes, both general and juvenile criminal law. The last decade was marked by the implementation of the new Law on the prosecution of minors in 2002. According to the provisions of this Act, the punishment of juvenile imprisonment may be imposed under violent criminal offenders, perpetrators of serious crimes, as well as juvenile recidivists. The minor can be punished with a prison sentence, except in the following cases:

- When he committed a criminal offense involving violence,
- When the conditions have been met for imposing a non-prison sentence,
- When he committed a serious criminal offense prosecuted under indictment and when history of offenses indicates a pattern of repetition of offenses, or
- In exceptional cases, when a juvenile has committed a criminal offense prosecuted under indictment and aggravated offenses are such that you can not impose any other sentence to prison, which would be in accordance with the prescribed purpose and principles of punishment. In addition, the law requires that a judge must explain the decisive reasons due to which it is considered that in this case, that particular juveniles should be punished by deprivation of liberty.

The law on the prosecution of minors expands range of penalties that may be imposed on minors. Introduced two new types of penalties: deferred prison sentence and imprisonment, and deprivation of liberty under intensified rehabilitation and supervision.

Deferred prison sentence and a prison to a juvenile serving a sentence in the community with their obligation to carry out orders and commitments that are defined. If the conditions imposed are not executed a juvenile can be sent to prison to serve his sentence.

Deprivation of liberty under intensified rehabilitation and monitoring represents the maximum sentence under the new law on the criminal prosecution of juveniles. This penalty is imposed only juvenile perpetrators of more serious and violent crimes. In addition, it may be imposed in the following cases:

- Minor is found guilty of murder, attempted murder, manslaughter, serious sexual offense, or repeated serious crimes,
- Minor suffering from mental or psychological disorder or emotional disturbance,
- Made an individual treatment plan for the minor, and
- There is an appropriate program and a minor is eligible to take part in it.

Certain new are being introduced in terms of sentencing juveniles. The juvenile court previously determined guilt minors and then the same person may impose a penalty prescribed for adults. Age-age suffered some changes in terms of lowering the age limit to 14 years, provided that the province can raise the specified age limit to 15 or 16 years. In addition, the Prosecutor may notify juvenile court not to seek a sentence intended for adults, with regard to a criminal offense committed by a person older than 14 years, in which case the court may waive the imposition of penalties provided for adults.

Stipulate the obligation of the court to first review whether the punishment for juveniles may be sufficient for its complete rehabilitation. If the court a positive assessment, it must
impose a sanction envisaged for minors. An integral part of the juvenile prison sentence consists of two phases: the period of serving the sentence in an appropriate penal institution and the period of supervision in the community. The juvenile judge shall at the sentencing explicitly specify and explain in a public trial, that part of the sentence the juvenile is serving within correctional institutions, a part of the community under supervision. If a minor violates the conditions within the part of the sentence serving under the supervision of the community, provided several possible situations: changes the conditions under which the juvenile is serving this part of the sentence, his return to the correctional facility, as well as setting new conditions under which a minor is the time supervision in the community.

There is a possibility that the minor is not supporting part of the sentence under supervision in the community. In this case, prior to the commencement of serving the second part of the sentence, the court may ask the minor to remain in the correctional institution. This legal option is applicable to a minor in a situation where there is a reasonable fear that the minor before the expiry of the sentence to commit a criminal act that resulted in death or serious bodily injury.

The convicted juvenile can get parole for rehabilitation and preparation for future reintegration into society. The law restricted the duration of the discharge in 30 days, with which the provincial director, after reviewing the entire case file, could again renew.

In accordance with the tendency of individualization in sentencing recent Canadian juvenile law has prescribed specific rules for the execution of institutional penalties against minors. Accordingly, the court in sentencing specifically decides whether to send juveniles in correctional facility, open or closed. Criminal prosecution of juveniles offers new solutions and possibilities in respect of the execution of punishment of minors who during her lifetime to become an adult. That is a possibility to a minor, he or she attains 20 years, be moved to a facility for adults to proceed with the enforcement of the sentence. In a word, the new juvenile legislation in Canada provides a wide range of possibilities for the application of new or revised and existing solutions in the field of juvenile punishment which is specifically discussed in public.

Germany

The criminal justice status of juveniles in Germany is regulated by several pieces of legislation: The Law on court proceedings against minors, the Criminal Procedure Code Federal Republic of Germany to the Law on Courts. Punishing minors envisaged under the fourth chapter, entitled - Penalties for minors. In addition, the juvenile imprisonment is a last resort (ultima ratio), when used all other legal options in terms of sanctioning minors. This penalty can be imposed on minors aged 14 to 21 years. The legislator, in this case, predicted two possibilities:

Minors aged 14 to 17 years it is possible to avoid a prison sentence of 6 months to 5 years, or 10 years ago when a minor does a serious crime punishable by imprisonment not exceeding 10 years,

Minors aged 18 to 21 years shall be imposed a maximum period of imprisonment to 10 years.

It is necessary to fulfill two conditions for the imposition of sentences of juvenile prison (paragraph 17 § 2 JGG):
The presence of harmful circumstances that the juvenile is expressed in the exercise of the crime, so it is not "enough" imposed on some of the corrective measures or means.

The existence of a high degree of guilt in the minor offender, so it is necessary to impose a penalty.

When pronouncing juvenile prison court are available all the possibilities. The first option refers to the imposition of unsuspended sentences of juvenile prison. Another option includes a conditional suspended sentence for juveniles in a sentence of up to one year (paragraph 21 JGG). The judge will postpone the enforcement of the sentence on probation period if it can be expected that the conviction itself and without the enforcement of the educational act as a warning to the minors to probation period (trials) as well as future repair their behavior. In addition, the court should take into account the personality of the minor, his earlier life, her behavior after the offense, the conditions in which he lived and the expected impact achieved by applying delay execution of the sentence on juveniles. The conditional postponement of sentence, which has elements of a suspended sentence in our criminal legislation, can last up to two years.

In the end, the purpose of juvenile imprisonment is defined as the education of minors to continue to lead an honorable and responsible life, and at the same time the basis of such education should be the order, work, teaching, physical exercise and appropriate use of leisure time. The stated purpose is entirely in the spirit of German legislation which juveniles treated as a personality that should be administered treatment that includes educational and pedagogical work with juvenile convicts. In this sense, we can safely conclude direct liaison with the solutions present in our juvenile criminal law. "With regard to the social reintegration of juvenile convict’s primary objective execution of juvenile prison, it is necessary to fully realize the educational function of punishment."

**France**

In France the criminal law status of juveniles is regulated by the Regulation on delinquent children since 1945, which was amended several times. In doing so, the punishment of minors is foreseen in Articles 2 and 20 of the Regulation, which states that may be punished criminally responsible from the age of a minor 13 years of life. The punishment of juveniles also includes the possibility of imposing fines, pursuant to Article 20-3 of the Regulation. A minor older than 16 years who is charged with crimes trial Assizes Court for minors. However, the sentence imposed by the juvenile court the penalty prescribed in the general criminal law. In terms of duration, provided that the penalty may not be the same length as for adult offenders. It is interesting to point out the specific limitations clearly age of minors. Thus, a minor older than 13 years can be imposed is higher than half of retribution. In the case of the life in prison sentence, juvenile courts can not impose a sentence greater than 20 years in prison.

Summarizing the above, we see that in France the power of the general regime of punishment of juvenile offenders. Certain discrepancies with regard to punishment of minors in relation to adults, are related to the treatment of the minority of such mitigating circumstances during sentencing. In addition, the juvenile offender is older than 16 years is subject to the general regime of punishment and execution of the sentence that applies to adults so that, in the above case, the victim is a minor ceases to be a mitigating circumstance.
Croatia

In Croatia, the criminal and legal status of minors is regulated by the new Law on Juvenile Courts since 2011. According to the provisions of Article 6, paragraph 2 of the Law on Juvenile Courts, the purpose of juvenile imprisonment is to take measures of education and vocational training of the minor offender affect the further development of his personality and strengthen his personal responsibilities for the maintenance of the repeated commission of crimes as well as to deter others from committing crimes.

Imposition of juvenile detention requires the fulfillment of planned objective and subjective conditions. Objective condition refers to the potential penalty for committing a criminal offense (three years or more). The subjective requirement includes the obligation to meet more preconditions: it was a senior juvenile, and given the nature and gravity of the offense and a high degree of culpability of the offender would not be justifiable to apply an educational measure, it is necessary to apply the punishment.

Sentencing of juvenile imprisonment can be done in the time span of less than six months nor more than five years. However, the Law on Juvenile Courts (Article 25) provides for certain exceptions:

If it is a criminal offense punishable by imprisonment, or a concurrence of at least two offenses for which a sentence of imprisonment of ten years, juvenile detention can last up to ten years (paragraph 1);

The court can not be measured in juvenile detention longer than as prescribed punishment for the offense, but is not required to measure the minimum prescribed and penalties (paragraph 2).

Special rules are provided for the imposition of the juvenile prison in concurrence of offenses in three cases:

A single sentence of juvenile prison without first establishing penalties for each individual criminal offense,

When for a criminal offense should be sentenced to a juvenile prison for another educational measure, the court shall impose only a sentence of juvenile imprisonment,

If after pronouncing juvenile prison finds that the juvenile before or after sentencing did a crime, the court refers to the rules laid down in the first case.

Conditional release can be imposed upon thirds of the sentence of juvenile prison sentence. Duration of conditional release is limited to the expiration of the juvenile prison sentence imposed. County court which pronounced the juvenile prison or whose seat of municipal court that imposed the punishment shall decide on the conditional release of the minor convicts. Revocation of parole is possible if the convicted person commits one or more criminal offenses for which a prison sentence of six months or juvenile imprisonment of six months.

It is interesting to point out the presence of a specific legal institute called "holdup pronouncing juvenile prison." The institute consists in the power of the court to be imposed or to determine that the juvenile guilty of committing a criminal offense and simultaneously postponed sentencing to juvenile prison, if it is considered that the imposition of guilt accompanied by the threat of subsequent sentencing juvenile offender can be deterred from re-committing criminal acts. The juvenile court may, in the framework of retention, pronounced educational measure of intensive supervision, referral to a disciplinary center.
and one or more special obligations can not last longer than the probation period (Article 28, Paragraph 1 of the Law on Juvenile Courts). Juvenile imprisonment may be imposed later if the time fixed by the court, which may not be less than one year nor more than three years (probation period), commit another criminal offense or opposes the application of the imposed corrective measures. In addition to regular, juvenile imprisonment is possible and subsequently imposed in two cases:

- If in the time specified by the court (probation period) a minor which is reserved to the imposition of the punishment of juvenile custody commits a new criminal offense,
- If you oppose the execution of the pronounced measure or without justifiable reasons will not serve the protective measure imposed it by the subject to the imposition of juvenile detention.

The law on juvenile courts has predicted the possibility of imposing security measures against a juvenile who was sentenced to juvenile prison. However, prescribes two constraints: security measure ban on performing profession, activity or duty can not be imposed at all, and prohibited from driving a motor vehicle may only be applied to an older juvenile. Medical security measure of compulsory psychiatric treatment and mandatory treatment of addiction lasts until the cessation of reasons were applied. In any case, the duration of these security measures stop with the execution of juvenile detention or expiration of the probation period of retention in juvenile prison, with what can not last longer than three years. The execution of juvenile prison is fully in line with European and international regulations. Croatia has built a special system of correctional institutions for juveniles, as follows:

- Požega Penitentiary Department for execution of juvenile prison sentence (prison unit)
- A prison in Pozega (semi-open section)
- Penitentiary in Valtura (open division).

At each facility, there are special programs of individual treatment of juvenile convicts. In doing so, the program for each prisoner must contain the following particulars:

The risk assessment during the execution of the prison sentence of which depends on referral to the prison according to the degree of security (closed, semi-open)

- Work ability, work habits, type of job and working conditions in which the inmate may be transferred,
- Level of education and the need for education or vocational training,
- Health, the need for treatment,
- Participation in specific programs (drug addiction, alcohol, suffering from PTSD), by court decision or assessment of an expert team,
- The need for specific psychological, psychiatric, social or legal assistance,
- A proposal for special forms of individual and group work,
- Contents and forms of leisure (cultural and sports activities)
- Contact with the outside world (correspondence, phone calls, visits to family and other persons)
- A program of preparation for release to liberty and assistance after release.

Depending on the success achieved correctional institution may introduce changes in the existing programs of action. At the same time, followed the progress of the convicts and the possibilities of its possible release on parole.
In the Republic of the Serbian criminal and legal status of minors and the problems of their punishment is regulated by the newly adopted Law on Protection and Treatment of Children and Juveniles in criminal proceedings. The new juvenile criminal legislation maintained the principle of exceptional punishment (older) minor. According to Article 31 of the Law, the general purpose of criminal sanctions against minors is to ensure the protection, care, assistance and supervision, as well as providing general and vocational training to foster the development and empowerment of personal responsibility of juveniles, provide education and proper development of his personality, ensure the reintegration of minors in the community. In paragraph 2 of the same article, the general purpose of criminal sanctions against minors is complemented by a special that only applies to juvenile prison, and that is to exercise increased influence on juvenile offender offender not to commit criminal acts, as well as to deter other juveniles committing criminal offenses. "By complementing the general purpose of criminal sanctions for specific ends in juvenile prison, the legislator has specifically accented the importance, but also the uniqueness of this sentence in the system of criminal sanctions against minors."

The new Law on Juvenile Justice (Article 50) requires the fulfillment of four conditions for the application of punishment against minors, namely:

- That the offender is an older juvenile, i.e. that is a minor at the time of the offense attained 16 years but had not reached 18 years of age,
- It is an older juvenile has committed a criminal offense which carries a sentence of imprisonment of five years,
- That there is a high degree of criminal responsibility of minors,
- Extract from the court that because of the serious consequences of work and the high degree of criminal responsibility would not be justified to pronounce a correctional measure on a minor.

Juvenile imprisonment can be imposed for a period ranging up to five years. However, it is possible to impose such a sentence longer than the prescribed time. For a criminal offense which carries a penalty of imprisonment or for concurrence of at least two criminal acts, for which a sentence of imprisonment of 10 years, juvenile detention can last up to 10 years. In determining the punishment for a senior juvenile for a criminal offense, the court may not impose juvenile imprisonment for a term exceeding that of imprisonment prescribed for the crime, but it is not bound by the minimal measure of that punishment. In sentencing juvenile imprisonment, the court shall consider all the circumstances affecting the sentence being longer or shorter in accordance with Article 37 paragraph 1 and 2 of the Criminal Code.

"A significant step towards the actualization of modern legal possibilities juvenile prison sentence in the Republic of Serbian, represents a premiere introduction of a new institute deferred sentencing the juvenile prison". The court may impose a sentence of juvenile prison and at the same time determined that he would not execute when we can reasonably expect that the threat of subsequent sentencing may affect the juvenile offender not to commit criminal acts. With a full sentence, the court may impose any of the educational measures of intensified supervision and to determine to that extent one or more special obligations. However, the court may subsequently order the execution of juvenile imprisonment if a juvenile during which the court orders, which may not be less than one nor more than three years (probation period), commits another offense or if he refuses to comply with the imposed educational measure increased supervision or execution of specific obligations. After the
expiry of at least one year of probation period, the court may, after obtaining the opinion of
the guardianship authority, finally withdraw from the sentencing to juvenile prison.

The subsequent sentencing to juvenile prison is planned in two situations:

— The minor which is delayed sentencing to juvenile prison is convicted or he is
pronounced an educational measure because of the new criminal offense committed
before the expiry of the probation period, the court shall impose a sentence for the
previously committed act, if, due to the newly imposed sentence or correctional
measure, it necessary to deter minors from the commission of offenses,

— The minor despite the warning Court refuses to comply with the imposed
educational measure or execution of specific obligations.

On the other hand, when the court does not impose subsequent juvenile prison, then
decide they remain in force already imposed measures or impose other measures.
Furthermore, juvenile imprisonment may be imposed no later than six months after the expiry
of the probationary period, or after completion of the procedure due to a new criminal offense.

Mode of execution of juvenile detention is conducted in special correctional facilities
for juveniles. According to Article 176 of the Act provides for the possibility of subsequent
stay in a correctional institution for juveniles, to education and vocational training, convicts
whose performances majority in two cases:

— Sentenced to juvenile imprisonment in a correctional institution for juvenile can
remain up to the age of 23, and then if the sentence is served, it shall proceed in
accordance with Article 175 of this law (paragraph 1);

— Exceptionally, in a correctional institution for juveniles convicted person may
remain even after reaching the age of 23 years, if it is necessary for the completion
of schooling or vocational training, or if the remainder of their sentence not
exceeding six months but not longer than the age of 25 years (§ 2).

In a word, the execution of juvenile imprisonment shall be subject to the general regime
provided for in the new Law on Juvenile Justice with the additional application of the relevant
provisions of the applicable Law on Execution of Criminal Sanctions (Chapter XII).

**Montenegro**

Montenegro is not a matter of minors allocated in a separate law, but their criminal and
legal status is regulated by the general criminal law. In this respect, the Criminal Code of
Montenegro, in Chapter VI, contains provisions to regulate the status of juveniles, the manner
and modalities of their sanctions. The common denominator of criminal policy towards
juveniles is reflected in the application of the principles of excellence in their punishment.
Accordingly, it can only punish a senior juvenile who has committed a criminal offense for
which the law prescribes a prison sentence of over five years, if, due to the high degree of
guilt of the offender and the gravity of the offense would not be justifiable to apply an
educational measure (Article 100 CC).

Duration of juvenile imprisonment is limited to the time range of six months to eight
years. However, the court may not impose juvenile imprisonment for a longer period of
imprisonment prescribed for a criminal offense, but is not bound by the minimal measure of
that punishment (Article 103, paragraph 2 of the Criminal Code of Montenegro). In relation
to offenses carrying a statutory penalty of imprisonment of ten years, may be sentenced to juvenile imprisonment of up to ten years.

Provides for three modes of sentencing juvenile imprisonment for concurrent criminal offenses and that (Article 104 of the Criminal Code):

— If you are an older juvenile to do more criminal offenses in concurrence, the court finds that for some of them to be sentenced to a juvenile prison, weigh for all crimes a single sentence,

— If for some of the committed criminal offenses must be sentenced to a juvenile prison, and for other educational measures, the court shall, for all offenses in concurrence imposed a sentence of juvenile imprisonment,

— If, after the sentence of juvenile prison finds that the convicted person before or after its imposition has committed another criminal offense, apply the rules as set forth above.

The issue of enforcement of juvenile detention in Montenegro is resolved through the application of general rules for the execution of imprisonment. Consequently, the Law on Execution of Criminal Sanctions regulates the question of the execution of juvenile prison sentence in the fifth chapter. General rules for execution of imprisonment related to adult convicts: committal to prison, reception of prisoners, their location and operation, contact with the outside world, disciplinary and material responsibility, and are applied in the execution of juvenile detention. However, exceptions to the application of the general rules for the execution of imprisonment exist in two cases, the execution of juvenile detention:

— Minor convict who behaves appropriately and demonstrates a commitment to learning and work, organization officer may grant leave to visit their parents and other close relatives. Absence can be given a maximum of two times in one year, provided that its duration is limited in time until 14 days after each absence.

— Disciplinary punishment of juvenile convicts coming to the fore in terms of disciplinary punishment of solitary confinement. Pursuant to Article 71 of the Law on Execution of Criminal Sanctions "convicted juvenile may exceptionally be imposed a disciplinary punishment of solitary confinement to 10 days, and if during the term of juvenile imprisonment minor has come of age this punishment may last up to 30 days."

**Conclusion**

The punishment of minors is the last step on the long road struggle of society with youth crime. Excellence in punishing juveniles are reflected in the application of diversion and educational measures aimed at minimal restrictions to achieve the best results. In this regard, the punishment of juvenile represents the ultimate means of applying re-social active treatment affects their re-education and training for life in freedom. Criminal status observed through the prism of the right of the state to punish them is one of the important issues in comparative legislations. Regardless of the legal system to which they belong, state in their juvenile and general national criminal legislation foresee the possibility of applying juvenile prison. In doing so, there are almost no countries that are in the same manner regulated material, procedural and enforcement aspects of the juvenile prison. As a reminder, in Canada and Germany, the special laws cover the entire matter on the criminal responsibility of minors. On the other hand, in France several decades old regulation on child delinquents regulates criminal law status, and the system of criminal sanctions...
against minors. Countries of the former Yugoslavia are modeled after European incorporate into their legislation specific legislation on the criminal liability of minors. The register of criminal sanctions retained an exceptional possibility of punishment of minors over juvenile prison. Depending on the approach to the issue of punishment of juveniles in each of the countries of the former Yugoslavia we find modifications in terms of material, process and particularly the executive aspects of juvenile detention. However, the common denominator of various legal provisions also evident in the provision of broad opportunities for the application of high-quality treatment in correctional institutions leading in this account of the needs of juvenile convicts and possibilities of the community.

References


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General outline:
Authors submitting to the International Review are requested to email full paper in English. Pictures, if imported, should be placed separately in the zip file in TIFF, JPG, GIF or CDR format in resolution of 300 dpi.

Manuscripts are blind reviewed with the understanding that they are substantially new and have not been previously published in whole. Publisher has the copyright to all published articles.

Practical guidelines
1) The length of the manuscript should not exceed 8 pages (including notes, references, appendices, tables, figures, charts, etc.). A paper must be written in English in text processor Microsoft Word, using font Palatino Linotype (size 11), in Latin alphabet, single spacing.
2) Page setup: B5, margins: top 3 cm; bottom 3 cm; left 2,5 cm; right 2,5 cm.
3) Paragraph setup: first line indentation 0,6 cm, paragraph spacing: before 2 pt and after 2 pt.
4) Title: right, bold, size 16
5) The author's name: last, middle and first name (bold, size 11) without titles. The author's affiliation name of institution, city, state, and country should be together with the author's name. Behind the name of the first author, a footnote should be inserted containing address and email of the first author. The maximum number of authors of one paper is three.
6) Abstract: italic, size 11, 3 line behind the author's name, the maximum length of 250 words. Key words should be 1 line behind the abstract up to ten key words.
7) Avoid endnotes.
8) Tables and figures should be numbered (1,2,3 etc.), in italics centred. All tables and figures (drawings) must be black & white.
9) Structure of the manuscript (only two levels). First heading: left, bold, size 12, before 18 after 9 pt. Second heading: left indentation 0,6 cm, bold, size 12, before 12 after 6 pt.
10) Reference to articles and books in the text: Give full name (first name, middle initial, and last name) of author(s) and year of publication in the first citation, with page number(s) where appropriate. For example: Glenn Firebaugh (1999) [first reference]; Firebaugh (1999) [subsequently]; Andrea Boltho and Gianni Toniolo (1999) [first reference], Boltho and Toniolo (1999) *subsequently*; Albert Berry, François Bourguignon, and Christian Morrisson (1983) [first reference], Berry, Bourguignon, and Morrisson (1983) [subsequently]. When more than one work by the same author is cited, give the last name of author and year of publication in parentheses for each subsequent citation. When listing a string of references within the text, arrange first in chronological order, then alphabetically within years. If there are four or more authors, refer to the first author, followed by et al. and the year; for example: Stefan Fölster et al. (1998). If there is more than one publication referred to in the same year by the author(s), use the year and a, b, etc. (example: 1997a, b). References to authors in the text must exactly match those in the Reference section.
11) List of references (in alphabetical order by author' last names) should be at the end of the manu. JR uses AEA rules for references (Harward style).