INTRAPRENEURSHIP AND SELF-MANAGEMENT TRADITION: 
SEGMENT SAMPLE APPROACH

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ABSTRACT

Intrapreneurship is a process of forming small autonomous units within the companies which are given necessary resources in order to achieve greater flexibility and adaptability to changes in the environment. Intrapreneurship encourages and stimulates creativity, talent and ideas of employees in order to achieve a profitable enterprise for the company (Babić and Zarić, 2017). From formulating the notion of intrapreneurship (Pinchot, G. and Pinchot, E., 1978; Pinchot, G., 1985), researches can be divided into three phases. The first phase emphasizes the positive impact of innovations, risk taking, employee manager support, organizational renewal and revitalization of the company. The second phase is focused on the analysis of intrapreneurial behavior in large US companies (Sadana and Jidda, 2016). In the third phase, it has been accepted that American experience can not be generalized to different cultures and company sizes, because there are significant discrepancies (Antonicic, 2007). Reviving interest in intrapreneurship, Babić and Zarić (2017) proved the influence of intrapreneurship on the volume of business and investment trend of large companies. Providing opportunities to undertake business initiatives, to access the resources for the realization of innovation and tolerance for mistakes, intrapreneurship allows employees to put themselves in the role of entrepreneurs within large companies.

A set for intrapreneurship measuring containing 10 indicators was created for the needs of this research. The sample included 25 large Serbian companies and the data were collected using a questionnaire with closed answers, together with Likert scales. The sample was divided into 2 segments. The first segment included companies being present on Serbian market from the period before 1991, while the second segment contained companies operating on the same market after 1991. The main purpose of the research was to determine the systematic differences between the segments (Samary, 1988; Ward, 1958) and to explain their causes from the point of view of institutional economics.

**Keywords:** intrapreneurship; indicators; measuring; Serbian companies; segment-sample analysis
1. INTRODUCTION

There is enough evidence from the authors whose major works are dedicated to the analyses of entrepreneurship, as well as intrapreneurial aspects (Antoncic, Singer) and from the well-known international projects, such as GEM and GLOBE (Global Leadership and Organizational Behavior Effectiveness) showing that in the economies of transition countries, inheriting self-management traditions, the employees are still showing more incentives and more activities in the process of bettering the companies’ performances. In this study, the hypothesis is that in the large Serbian companies founded in the era of self-management (in ex-Yugoslavia it lasted for more than forty years, creating sharp cultural differences in respect to the other communist countries - Catherine Summary (1988) would say “so-called communist”) there is a moderate way of expressing ideas, innovative or just managerial, besides the neoliberal system and private ownership of the companies. In order to explain a relative delay of the ex Yugoslavian countries in the transition process and an extremely long transition recession, leaving the political problems and wars out of the analyses, Pejovich (2003) explained big cultural differences, especially concerning the position of the employees in the company. The employees from the Eastern European countries, working in the system of a sharp power distance cultural dimension, are not faced with a big difference in their relations toward the party manager or a private owner. On the contrary, privatized companies and newly created private ones in the countries with the self-management tradition, suffered from the newly established strictly hierarchically structured companies, mostly without having a chance to play a more active role in the companies’ life. Thus, the resistance to the new neoliberal model has also become a barrier for faster transition.

The report on the research undertaken in Croatia, in the framework of GEM 2016 (Kelley et al., 2016) for the first time included data on the entrepreneurial activities of employees (according to the methodology developed by Bosma, Wennekers and Amoros (Bosma et al., 2012). The Netherlands authors (Bosma, Starm and Wennekers, 2010) introduced this dimension in the study. Apart from the most of the findings in this study which inspired the team leader, professor Singer, to create a critical title of the published version of the report on Croatia, “What makes Croatia a (non)entrepreneurial country?”, the results on entrepreneurial activities of the employees were close to the average results characterizing the economies based on innovations, heading the list of the Central and Eastern European countries (Singer et al., 2017). The latest results indicate that as many as 7.5% of the employees are involved in some entrepreneurial activity within the company (Singer et al., 2017, 35 see Table 22). It is worth mentioning that the results for Bosnia and Herzegovina show that 7.2% of the employees are also undertaking initiatives focused on improving the companies’ performance and results.

A number if cross-country studies published by Slovenian professor Antoncic and his colleagues (Antoncic, Hisrich, 2001), besides the limited relevance due to the sample size (especially the small number of American companies), and the results from the new edition of the Global Entrepreneurship Monitor, could lead the researchers
toward the idea that the encouraging data on entrepreneurial activities of the employees could be a part of the mental matrix of people living in the countries that have a developed model of self-management in their near past. The study of the large companies in Belgrade was in a way inspired by this idea, leading to the hypothesis that those companies which have existed during the self-management system, are showing more of intrapreneurial activities than the companies founded in the period of transition.

2. THE CONCEPT OF INTRAPRENEURSHIP: PHASE DEVELOPMENT

Intrapreneurship is a process of forming small autonomous units within the companies which are given necessary resources in order to achieve greater flexibility and adaptability to changes in the environment. Intrapreneurship encourages and stimulates creativity, talent and ideas of employees in order to achieve a profitable enterprise for the company (Babić and Zarić, 2017). Intrapreneurship is a concept that develops new products, services, technologies, administrative techniques, strategies and competitive positions (Antoncic and Hisrich 2001). In managerial praxis, intrapreneurship was in most cases applied in large companies, although there were no isolated cases of application to increase the efficiency of medium-sized firms. From formulating the notion of intrapreneurship (Pinchot, G. and Pinchot, E. 1978; Pinchot, G., 1985), researches can be divided into three phases. The first phase emphasizes the positive impact of innovations, risk taking, employee manager support, organizational renewal and revitalization of the company. The second phase is focused on the analysis of intrapreneurial behavior in large companies, mostly American and Japanese companies. We emphasize the importance of this phase as the key one, essential and most fruitful in the development of intrapreneurship. It was an organizational concept that puts the personality of intrapreneur in the center spot. It is a phase in which the owner and managers recognize and become aware of the value of a talented intrapreneur, his or her creativity and skill to improve the technological process and find various solutions in large companies. In this phase, intrapreneur comes to the forefront and presents a priceless resource for the company. The nurturing of their gift, meeting their creative proposals and solutions, giving them a free hand and special status, leads to raising the company's profitability and attractiveness on the market. On the other hand, by taking care of an intrapreneur his or her loyalty is assured, and an important resource remains in the company when the intrapreneur is not looking for a better position in a competing company and not starting his or her own business. Examples in practice and literature are numerous. The two of them will be briefly described. 1. The case of Play Station intrapreneur, year of launching: 1994. Sony's employee Ken Katuragi bought his daughter a Nintendo gaming console and noticed that the system had extremely bad sound effects. For this reason, Kuturagi invented the SPC7000 for the next generation of Nintendo consoles. He was about to be fired when Sony discovered his sideline project. However, the CEO Norio Ortega realized the value of Kuturagi's invention and supported his efforts. Kuturagi worked parallel for Nintendo, developing CD Rom based consoles. However, Nintendo decided not
to go forward with it (Sadana, Jidda, 2016). Later, Kutaragi helped Sony develop a new gaming system, known as the Play Station. The famous version of Sony Play Station 2 became the best-selling game console ever and Kutaragi founded Sony Computer Entertainment, one of the most successful Sony's divisions (ibid).

2. The case of Java Language Intrapreneurs, Sun Microsystems, year of launching: 1995. When young talented programmer Patrick Naughton informed Sun's CEO Scott McNealy he was leaving the company, he practically marked the beginning of Java programming era. Asked to explain what was wrong with Sun, the programmer responded that Sun was missing out on the fast-growing PC consumer market (Sadana, Jidda, 2016). Overnight, his 12-page email became the Sun's new development strategy. A 25 year old Naughton stayed in the company, and Sun formed a special group for breaking into the consumer market. A member of the group, James Gosling, created the programming language called Oak, later renamed Java. With the support of Bill Joy, the Sun's co-founder, Java started to be used across various platforms (computers, cell phones, PDAs, etc.). Soon, by the end of 1996 Java had about 100 licensees and attracted 6000 developers (ibid).

The third phase of studies covers the period from 2000 until today. It has been accepted that American experience cannot be globalized into different cultures and firm sizes, because there are significant differences. A typical example is Antoncic's (2007) cross-cultural study on Slovenian and American firms. The samples were from very diverse economies: Slovenia as the representative of Central European transitional economy and the USA as the representative of world industrial power. According to the results, a positive relation was confirmed between intrapreneurship and environmental characteristics, as well as intrapreneurship and organizational characteristics for both countries (Antoncic, 2007). In Slovenia's case, intrapreneurship was positively related to growth and profitability of the firms. On the other hand, in case of the USA, a positive correlation was confirmed between intrapreneurship and growth while the intrapreneurship-profitability relationship was not significant (ibid). This study is important because it provides strong evidence of the cross-cultural comparability of intrapreneurship models encouraging researchers to do further comparative analysis in this area. A survey on intrapreneurship in large Belgrade companies can also be considered in the third phase of the studies (Babić, Zarić, 2017).

Using the factor and regression analysis, the authors isolated two complex factors of intrapreneurship and proved their impact on business volume and investment trend of large companies (ibid).

3. COMPARATIVE ANALYSIS OF INTRAPRENEURSHIP

The chapter will present a part of the research results on internal intrapreneurship that was completed on December 2016. The sample covered 25 large companies in the capital city of Serbia. As a criterion for defining large companies we used the applicable accounting law (Accounting Act, 2013). For choosing a company for the sample, first it was taken into account that the ratio of Belgrade's economic sectors in gross domestic product share was authentically mapped (PKB, 2015). The selection of companies was based on the listing obtained in the Serbian Business Registers.
Agency. As a technique, *simple random sampling without repeating* was used. As an instrument for collecting data we used a questionnaire with closed and opened answers and *Likert* scales. The questionnaire was given to lower and middle-ranked managers of the selected companies. Owners and high-ranked managers were not included in the sample in order to avoid the possibility of biased responses. The sample was divided into 2 segments. The first segment included companies being presented on Serbian market from the period before 1991, while the second segment contained companies operating on the same market after 1991. The main purpose of the research was to determine the system’s differences between segments. For the needs of this research, a set for intrapreneurship measuring containing 10 indicators was created. The set included the following indicators: 1. encouraging the work of autonomous and functional teams 2. the existence of business initiative, 3. access to resources for testing new business ideas, 4. risk taking for the realization of new business ideas, 5. resources for the development of new ideas, 6. the possibility of using the resources of other units, 7. tolerance of mistakes in order to realize new ideas, 8. system of rewarding, 9. management support at all levels and 10. number of hierarchical levels in the past 5 years. Respondents were asked to answer a set of ten questions to form a clear picture of whether and to what extent the company implemented the concept of intrapreneurship. To measure the scores of nine intrapreneurship indicators 4 degrees of the Likert scale were used: from 1 for minimum to 4 for maximum value (*1.not at all, 2.insufficient, 3.yes and 4.yes, to full extent*). The tenth indicator was measured by a three-degree scale. The following hypothesis $H_0$ was tested in research: *Companies present on the Serbian market before 1991 achieve higher scores of intrapreneurship indicators than the companies operating after 1991*. As a criterion for the scores a share of the sum of answers: "yes" + "yes, to full extent" was selected. In the case of 10th indicator, we took into account the answers "increased" and "decreased" on the 3 degrees scale. These are the results for companies present in the Serbian market before 1991 (Tab. 1a, 1b):

**Table 1a. Intrapreneurship indicators: Companies present in the Serbian market before 1991**

<table>
<thead>
<tr>
<th>N=20</th>
<th>1 not at all %</th>
<th>2 Insufficient %</th>
<th>3 Yes %</th>
<th>4 Yes, to full extent %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Encouraging the work of autonomous and functional teams</td>
<td>5</td>
<td>65</td>
<td>30</td>
<td>/</td>
</tr>
<tr>
<td>2.The existence of business initiative</td>
<td>10</td>
<td>40</td>
<td>50</td>
<td>/</td>
</tr>
<tr>
<td>3.Access to resources for testing new business ideas</td>
<td>25</td>
<td>40</td>
<td>35</td>
<td>/</td>
</tr>
<tr>
<td>4.Risk taking for the realization of new business ideas</td>
<td>15</td>
<td>55</td>
<td>30</td>
<td>/</td>
</tr>
</tbody>
</table>
5. Resources for the development of new ideas | 15 | 50 | 35 | /  
6. The possibility of using the resources of other units | 5 | 55 | 40 | /  
7. Tolerance of mistakes | 20 | 45 | 35 | /  
8. System of rewarding | 30 | 30 | 40 | /  
9. Management support at all levels | 20 | 45 | 35 |  

Source: The authors’ calculations

**Table 1b. Number of hierarchical levels in the past 5 years: Companies present in the Serbian market before 1991**

<table>
<thead>
<tr>
<th>N=20</th>
<th>1. Decreased %</th>
<th>2. Stayed the same %</th>
<th>3. Increased %</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. The number of hierarchical levels in the past 5 years</td>
<td>25</td>
<td>45</td>
<td>30</td>
</tr>
</tbody>
</table>

Source: The authors’ calculations

In Tables 2a and 2b one can see the results for companies operating in the Serbian market after 1991:

**Table 2a. Intrapreneurship indicators: Companies operating in the Serbian market after 1991**

<table>
<thead>
<tr>
<th>N=5</th>
<th>1. Not at all %</th>
<th>2. Insufficient %</th>
<th>3. Yes %</th>
<th>4. Yes, to full extent %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Encouraging the work of autonomous and functional teams</td>
<td>/</td>
<td>100</td>
<td>/</td>
<td></td>
</tr>
<tr>
<td>2. The existence of business initiative</td>
<td>20</td>
<td>20</td>
<td>60</td>
<td>/</td>
</tr>
<tr>
<td>3. Access to resources for testing new business ideas</td>
<td>/</td>
<td>100</td>
<td>/</td>
<td>/</td>
</tr>
</tbody>
</table>
According to the results, it can be concluded that companies present in the Serbian market before 1991, achieve better results in 9 out of 10 intrapreneurship indicators. Only in the case of 2nd indicator "the existence of business initiative", companies operating in the market after 1991 have achieved a better result. Therefore, it can be concluded that the hypothesis $H_0$ is confirmed. Observing the general results in both segments for 9 indicators, it is noticeable that the share of the so-called negative answers ("not at all" + "insufficient") is dominant and that parameters which indicate the presence of intrapreneurship in Belgrade companies are not significantly expressed. None of the indicators is present to its full extent (Table 1a-2a). A similar situation occurs when it comes to the tenth indicator "the number of hierarchical levels in the past 5 years" (Table 1b-2b).

In the previous study we found and proved a positive impact of intrapreneurship on business volume and investment trend of large companies (Babić, Zarić, 2017). In this study, we measured a correlation between intrapreneurship indicators and the real earnings compared to 2010. The measuring was also done by segment-samples. Due to small sample in the second segment, a more rigorous criterion for

<table>
<thead>
<tr>
<th>4. Risk taking for the realization of new business ideas</th>
<th>20</th>
<th>80</th>
<th>/</th>
<th>/</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Resources for the development of new ideas</td>
<td>20</td>
<td>80</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>6. The possibility of using the resources of other units</td>
<td>/</td>
<td>100</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>7. Tolerance of mistakes</td>
<td>20</td>
<td>80</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>8. System of rewarding</td>
<td>20</td>
<td>60</td>
<td>20</td>
<td>/</td>
</tr>
<tr>
<td>9. Management support at all levels</td>
<td>/</td>
<td>100</td>
<td>/</td>
<td>/</td>
</tr>
</tbody>
</table>

Source: The authors’ calculations

Table 2b. Number of hierarchical levels in the past 5 years: Companies operating in the Serbian market after 1991

<table>
<thead>
<tr>
<th>N=5</th>
<th>1 Decreased %</th>
<th>2 Stayed the same %</th>
<th>3 Increased %</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. The number of hierarchical levels in the past 5 years</td>
<td>/</td>
<td>80</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: The authors’ calculations
the validity of the correlation analysis was set. Only the values of Pearson coefficient with probability \( p < 0.05 \) were taken into account (Table 3 - 4).

**Table 3. Pearson Correlation between intrapreneurship indicators and real earnings:**

**Companies present in the Serbian market before 1991**

<table>
<thead>
<tr>
<th>Intrapreneurship indicators</th>
<th>Sig. (1 tailed) N=20</th>
<th>Real earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to resources for testing new business ideas</td>
<td>0.011</td>
<td><strong>0.510</strong></td>
</tr>
<tr>
<td>Risk taking</td>
<td>0.001</td>
<td><strong>0.669</strong></td>
</tr>
<tr>
<td>The possibility of using the resources of other units</td>
<td>0.006</td>
<td><strong>0.553</strong></td>
</tr>
<tr>
<td>System of rewarding</td>
<td>0.018</td>
<td><em>0.472</em></td>
</tr>
<tr>
<td>Management support at all levels</td>
<td>0.027</td>
<td><em>0.436</em></td>
</tr>
<tr>
<td>The number of hierarchical levels in the past 5 years</td>
<td>0.03</td>
<td><em>0.428</em></td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.05 level (1-tailed).**  

**. Correlation is significant at the 0.01 level (1-tailed).**  

*Source: The authors’ calculations*

**Table 4. Pearson Correlation between intrapreneurship indicators and real earnings:**

**Companies operating in the Serbian market after 1991**

<table>
<thead>
<tr>
<th>Intrapreneurship indicators</th>
<th>Sig. (1 tailed) N=5</th>
<th>Real earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The existence of business initiative</td>
<td>0.014</td>
<td><em>0.919</em></td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (1-tailed).*

*Source: The authors’ calculations*
Speaking about the companies operating on the Serbian market after 1991, the results should be taken with reserve due to small sample. The authors' estimation is that as the sample increased, there would be more intrapreneurship indicators in correlation with real earnings.

4. CRITICAL REMARKS (THE THINGS ARE NOT SO SIMPLE)

There is a certain interest in a variety of forms that could encourage and accelerate innovations within companies. From coming back to the traditions of “mitbestimmung” in Germany (Esser, 2009) or worker-managed firms (Burdin, 2014) to the Japanese models of employees loyalty to the company and their initiatives focused on optimization of the processes—there are many evidences of the scholars and practitioners’ efforts to find a way toward a true and standing engagement of the employees in bettering the processes and results. After the unsuccessful attempts to implement the ESOP (Employee share ownership in privatized companies) model (Ellerman et al., 1990), converting the self-managers (employees in the majority of the companies in Yugoslavia) into shareholders (thus creating the capital market instantly), there were no serious efforts to study the influence of self-management on organizational culture and on intrapreneurship. There was a slight number of initiatives and cases through the world (it is important to mention that one of the most famous writers on self-management, Jaroslav Vanek (1977) worked for decades as a consultant in worker-managed firms and other participatory enterprises round the world). But there are certain limits in understanding these quantitative results as a reminiscence of the old model:

a. The methodological problems could be numbered as one of the very serious limits. The lack of data, limited sample sizes, just a few comparative structured studies, just one GEM study encompassing the data on employees intrapreneurship, makes the results the subject of discussion, with a very hypothetical value.

b. When taking into consideration the self-management model, it is very hard to understand it within the entrepreneurial framework. The model of the firm in Illyria (Ward, 1958), the expression used in scientific literature for self-managed firms, raises the academic attention and the studies proved that the companies (i.e. workers as self-managers) avoided to take risky and difficult managerial decision, such as investments. On the contrary, the decisions on redistributing the profit into wages were timely, causing the entropy of the model and showing problems of sustainability and uncompetitiveness at the international market (Furubotn, Pejovich, 1973).

c. On the other side, there were permanent obstacles (due to the ideological and legislative reasons) to entrepreneurial initiatives. As the entrepreneurial spirit and initiatives were strongly controlled and limited, the so-called “socialist black hole“ (Zarić, 1990), the lack of small (with more than 10 employees)
and medium size companies, was characteristic for the Yugoslavian economic structure.

d. Finally, when speaking about the organizational culture, Hofstede (2017) found that the power distance index has a high value and it is not stimulating expressing ideas to higher hierarchical levels, i.e. managers and owners.

To conclude, the phenomenon of intrapreneurship and its evidence, related to traditions and cultural assets, are very complex and deserve further studies. Speaking about traditions and the codes of the past and how the company life reflects them, it is important to study the potentials and initiatives that come from the employees. Instead of *déjà vu* approach (of Self-management model), employee initiatives have to be supported with the new organizational communication, internal public relations and crowdpreneurship (Zarić, 2014) approach. Having all this in mind, there is a need for designing the education for entrepreneurship that would take care of the importance of the employees’ initiatives. It means that special attention has to be paid to examine and study the new forms of the platforms and techniques that are fostering the employees’ activities in developing intrapreneurial projects, ideas and initiatives.
UNUTARNJE PODUZETNIŠTVO I SAMOUPLAVLJAČKA TRADICIJA: METODA SEGMENTIRANOG UZORKA

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SAŽETAK


Ključne riječi: unutarnje poduzetništvo; pokazatelji; mjerenje; srpske kompanije; segment-sample metoda
LITERATURA


