

## THE RELATIONSHIP BETWEEN THE COMPANY SIZE AND ENTREPRENEURIAL ACTIVITIES-THE CASE OF SERBIA

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### ABSTRACT

*More and more companies, regardless of their size start to behave entrepreneurially, adopting the basic postulates of entrepreneurial business and using entrepreneurial management. While small enterprises consider entrepreneurial activity as a key source of growth in the market, the importance of innovation in large enterprises is reflected in their contribution to long-term sustainability of business through the process of continuous adjustment to changes in the environment. One of the ways to achieve this is the consolidation of the advantages of small businesses (creativity, flexibility, innovation, market recognition) with market power and financial resources of a large enterprise. In order to describe the process of entrepreneurial activity of already existing enterprises the term corporate entrepreneurship is used in literature. As the basic dimensions, that is, manifest forms of the concept of corporate entrepreneurship we can mark off: innovations and ventures and self-renewal activities. Although the literature emphasizes the importance of entrepreneurial activity of all enterprises, regardless of their size, in Serbia, entrepreneurial orientation is still most often associated with newly established, small enterprises. According to previously mentioned, the aim of this paper is to identify, on the basis of a sample of 208 companies, the current state of entrepreneurial activity within them and to assess whether there are differences in the level of these activities between small, medium and large enterprises in Serbia. The analysis was carried out for the total level of corporate entrepreneurship, but also for its individual dimensions. In order to test the statistical significance of the differences between the three groups of companies, one-way analysis of variance (ANOVA) was used, while the Tukey post-hoc test was carried out to identify the specific groups among which differences exist. The results of the conducted testing indicate that there are statistically significant differences in the level of entrepreneurial activities between small and medium-sized enterprises, especially when it comes to innovations and ventures. The ratio of the level of innovations and ventures from one side to the size of the enterprise on the other side can be presented by U-curve, which implies that innovations and ventures are the most represented in the case of large and small enterprises, while their level is the lowest in the middle ones. On the other hand, self-renewal activities are decreasing with the growth of enterprise size. The importance of measuring the level of entrepreneurial activities is especially important for economic policy-makers. More precisely, identifying the dimensions that represent the cause of the low level of entrepreneurial activity in each of the observed groups of enterprises can be the first step in creating incentive strategies for their improvement.*

**Keywords:** *corporate entrepreneurship, company size, Serbia*

### 1. INTRODUCTION

More and more companies, regardless of size, financial strength and ownership relationships, start to behave entrepreneurially, adopting the basic postulates of entrepreneurial business and using entrepreneurial management. In this regard, a model of corporate entrepreneurship has been developed. The concept of corporate entrepreneurship emphasizes the implementation of innovations within already established enterprises. This is a continuous creative process, whose main goal is the implementation of innovations in the organization in order to increase the success of business.

The modern organization's business should be based on concept of the entrepreneurial behaviour of each individual and which should emphasize a strategic approach based on the risks accepting, creativity, innovation and responsibility for the organization's business. Entrepreneurial behaviour, in a modern organization, is not exclusively related to one person and his abilities and experience, but relies increasingly on teamwork, whose members are motivated to work on achieving success and accepting risks. Thus, beside traditional conception of connecting the concept of entrepreneurship with independent individuals and implementation of their ideas through the establishment of new entrepreneurial activities, there is a tendency of increased encouraging of these activities within the already formed small, medium-sized as well as large companies lately. Entrepreneurial activity is significant in all enterprises, regardless of their size, but there are some differences when it comes to the function of their implementation. More precisely, unlike small companies where entrepreneurial activity aims to contribute to further expansion and development of enterprises on the market, large enterprises, which have become bureaucratized and rigid systems, use entrepreneurial activities in order to improve the flexibility and adaptability to the environmental changes. Taking into account the importance of entrepreneurial activities in all enterprises, the aim of this paper is to identify the situations and potential differences in the level of entrepreneurial activities between small, medium and large enterprises in Serbia. Although, small and medium-sized enterprises are very often analysed together, in this paper they will be examined separately. This is because in the group of medium-sized enterprises there are those closer to the category of large enterprises when it comes to organizational structure, culture, maturity and focus, so the function and probably the level of entrepreneurial activities are different than in the case of small enterprises. Thus, after defining the concept of corporate entrepreneurship in the first, and detailed explanation of its manifestations in the second, in the last, third part of the paper, potential differences between the observed groups of companies will be considered in terms of the overall level of corporate entrepreneurship as well as in terms of its individual dimensions.

## **2. THE CONCEPT OF CORPORATE ENTREPRENEURSHIP**

Corporate entrepreneurship has been the subject of scientific research and practical interest for more than three decades. In the early 1980s, several researchers revealed the importance of entrepreneurship and its role in the renewal of existing organizations, innovations, risk taking and the creation of new enterprises. Due to its beneficial effect on the revitalization of the company performance, from that moment on, corporate entrepreneurship has become a subject of interest of many researchers. Interest in the development of corporate entrepreneurship is growing from year to year, as managers become more aware of the necessity of finding new ways to manage the organization, in order to remain competitive in the dynamic and turbulent environment (Davis, 1999). Although the concept of this kind of entrepreneurship seems simple, the researchers use different definitions to describe the entrepreneurial activities in the existing organizations (Burgelman, 1983). The period of the first more serious research in this field is related to Burgelman's definition of corporate entrepreneurship. In 1983, he states that corporate entrepreneurship refers to the process of enterprise diversification through its internal development (Burgelman, 1983). Kuratko et al. state that corporate entrepreneurship represents a set of behaviours requiring organizational sanctions and resource commitments for the purpose of developing different types of value-creating innovations (Kuratko et al., 2005). Jennings and Lumpkin (1989) associate corporate entrepreneurship exclusively with the creation of new products and the conquest of new markets. Sathe (1989) defines corporate entrepreneurship as a simple process of organizational renewal. Spann, Adams and Wortman (1988) define corporate entrepreneurship as establishment of a separate corporate organization (often in the form of a profit centre, strategic business unit, division, or subsidiary) to introduce a new product, serve or create a new market, or utilize a new technology.

Covin and Milles emphasized that corporate entrepreneurship involves innovation in various areas of business, from the introduction of new products, technology, work techniques, resources, or the acquisition of new markets. Somewhat later, Dess et al. explained corporate entrepreneurship in a similar way. According to these authors, corporate entrepreneurship is defined as the ability of the company to monitor the market and use the changes that occur within it in the most creative way (Dess, Lumpkin and Mcgee, 1999). A more precise and widely accepted definition of corporate entrepreneurship indicates that this is a process of discovering and developing new opportunities for value creation through innovation, regardless of resources or position of entrepreneurs (Antoncic, 2001). Zahra summarizes these definitions stating that corporate entrepreneurship is the sum of a company's innovation, renewal, and venturing efforts (Zahra, 1993). Different authors have explained corporate entrepreneurship in different ways and they have also used different terms to describe it. Beside the term corporate entrepreneurship, which is most commonly used, the terms that can also be found in the literature are: intrapreneurship or internal entrepreneurship (Pinchot, 1985; Nielson, Peters and Hirsch 1985), strategic or organizational renewal (Stopford and Baden-Fuller, 1994) and strategic undertakings (Block and MacMillan, 1993). In comparison with the interpretations of these authors, the term corporate entrepreneurship, in its broadest sense, nowadays can be understood as a combination of all the aforementioned concepts.

### **3. DIFFERENT APPROACHES TO THE STUDY OF CORPORATE ENTREPRENEURSHIP**

A large number of authors (Sharma and Kristman, 1999) emphasized that corporate entrepreneurship consists of three phenomena that can, but also do not have to be connected: the creating of a new business within the existing corporation, the innovation and transformation of the existing organization through the renewal and shaping of the key ideas on which it is based. In order to describe the first two phenomena, the authors have used different names, so they use terms such as *internal corporate entrepreneurship* (Zajac, Golden and Shortel, 1991), *intrapreneurship* (Pinchot, 1985) for creating a new business within the existing company. On the other hand, the process of enterprise transformation through the renewal of key ideas is referred to as strategic change, recovery and transformation (Shendel, 1990), or organizational renovation (Stopford and Baden-Fuler, 1994) in literature. Synthesizing these two phenomena Sharma and Christman (1999) define corporate entrepreneurship as a process in which an individual or group of individuals, in cooperation with their existing organization, create new organizations or encourage renewal or innovation in an existing organization. Birkinshaw also describes the forms of corporate entrepreneurship as the schools of corporate entrepreneurship, and classifies them into: corporate investment in new enterprises, intrapreneurship, bringing the market inside, entrepreneurial transformation (Birkinshaw, 2003). Vesper differentiates three types of corporate entrepreneurship: new strategic direction, initiative from below and autonomous business creation (Vesper, 1984). Although different authors define different manifestations, that is, the forms of corporate entrepreneurship, all of them find the base for their theories in the classification that was given by Guth and Ginsberg back in 1990. They grouped all the activities of corporate entrepreneurship into two main directions. The first, called innovations and ventures, is manifested as the creation of brand new businesses within the company, while the other refers to the organization's transformation through the renewal of the ideas the company is based on and it is named strategic renewal (Guth and Ginsberg, 1990). Zahra also accepts this classification of corporate entrepreneurship and he used it as the base for identification of the dimensions of corporate entrepreneurship, whose measurement will indicate the level of this phenomenon within the company (Zahra, 1993).

When it comes to corporate entrepreneurship in modern literature, these two variables are highlighted. This is the reason why two previously mentioned forms of corporate entrepreneurship have also been analysed in this paper.

#### **4. THE RELATION BETWEEN ENTREPRENEURIAL ACTIVITY AND COMPANY SIZE**

In the modern economy, the basis of successful business operations, especially in global terms, is to create a favourable climate in an organization that encourages entrepreneurial behaviour, innovation and flexibility. According to contemporary understanding, an entrepreneur has no longer to be an individual who is a business owner. An entrepreneur may also be an employee who possesses properties that are characteristic of entrepreneurial behaviour. From all above mentioned, we can conclude that the company size is not an obstacle to entrepreneurship. Most of the research results give us as the final conclusion that the corporate enterprise occurs everywhere, independently of the type and size of the organization. Entrepreneurial activities and entrepreneurial orientation of all types of enterprises are subject of the interest of numerous authors. The prevailing opinions are that they will contribute to improving the business of both small and medium enterprises as well as large enterprises (Wiklund and Shepherd, 2003, Zahra and Covin, 1995, Zahra, 1993). On the other hand, it is often thought that the size of the enterprise and corporate entrepreneurship are negatively correlated (Zahra, 1996), that is, with the growth of enterprises, the level of entrepreneurial activity will decline. Taking into account the importance of corporate entrepreneurship for the growth and development of small enterprises, as well as for the revitalization of already established corporations, the aim of this paper is to examine the state of this phenomenon in enterprises of different sizes in Serbia. Specifically, after identifying the current levels of entrepreneurial activities in all categories of enterprises, we will examine whether there are significant differences in the overall level of corporate entrepreneurship and in its individual dimensions. The level of entrepreneurial activities of the companies in Serbia has been identified on the basis of data collected from company managers through a questionnaire. The used questionnaire was defined in 1993 by Zahra, who was among the first to deal with the problem of measuring corporate entrepreneurship in enterprises (Zahra, 1993). It covers two essential, previously mentioned, dimensions of corporate entrepreneurship: innovations and ventures and self-renewal activities. These two dimensions of corporate entrepreneurship are estimated by averaging the following six variables, where the first three are related to the core of innovations and ventures, and the other three to self-renewal activities. Creating a new business is the first variable within the scope of innovations and ventures, and it refers to the expansion of current business activities within the same or in completely new industries as well as it refers to finding new unopened markets or creating completely new jobs in new industries that are connected with the current business domain. Innovations of products are related to investments in the development of new products and services, to the creation and introduction of brand new products and services to the market, as well as to the addition of new products and services to those already created by competing companies. Technological innovations, as the third variable within the scope of innovations and ventures, are related to investing in technology, participating in its development and introduction to the market. It is also related to the degree of acceptance of technological innovations within the industry in which the company operates. The second stronghold of corporate entrepreneurship, the so-called self-renewal activities are examined through three variables: reformulation of the mission, reorganization and systemic changes. The reformulation of the mission aims to determine to what extent companies change the defined mission, the already set business concept or the industry in which they operate. The reorganization refers to structural and organizational changes that will contribute to the improvement of entrepreneurial activities within companies.

They can be, for example, the process of increasing the autonomy of company parts or coordinating activities between employees in order to create innovations. The systemic changes include the establishment of regular creativity trainings for employees, as well as defining the employee reward system for proposed innovative solutions and providing the necessary resources for their operationalization. The significance of each of the six variables for the company was evaluated by the respondents on the Likert 5 point scale. The questions included in the questionnaire are given in Appendix 1, and the calculated values of each variable are shown in Figure 1 for easier comparative analysis between enterprises of different sizes. The division of enterprises into groups of small, medium and large companies was carried out according to the valid official categorization of enterprises in Serbia, taking into account three criteria: number of employees, revenue size and value of total assets<sup>1</sup>. The analysed sample consists of 208 companies, 26% of which are small, 36.5% medium and the remaining 37.5% are large enterprises.

Figure 1a: Comparative presentation of the state of the dimensions of corporate entrepreneurship in small, medium and large enterprises in Serbia

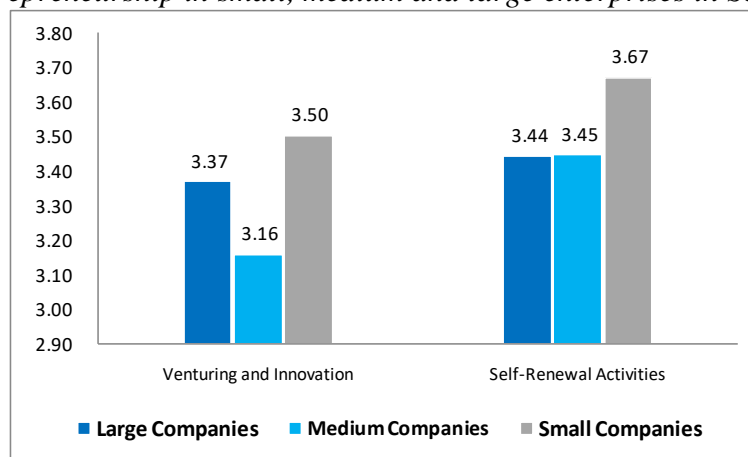
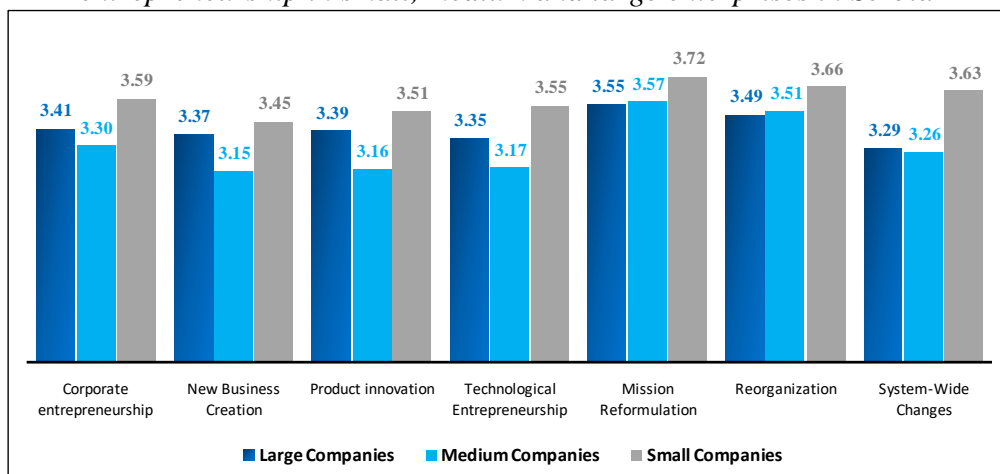


Figure 1b: Comparative presentation of the state of the separated dimensions of corporate entrepreneurship in small, medium and large enterprises in Serbia



It is interesting that the relationship between innovation and ventures on the one hand and the size of the company on the other hand can be presented by U-curve, which indicates that these forms of entrepreneurial activities are the most represented in the case of large and small

<sup>1</sup> Law on Accounting and Auditing, "Official Gazette of the Republic of Serbia", no. 62/2013 and 30/2018), Article 6.

enterprises. On the other hand, self-renewal activities are decreasing with the size of the enterprise. As can it is shown by Figure 1, the level of entrepreneurial activities is, on average, the highest in small enterprises, while in the case of medium-sized enterprises is the lowest. Entrepreneurial activities of large enterprises are more significant than those in medium-sized enterprises, although they are still at a lower level than in the case of small enterprises. If we observe the two basic directions of corporate entrepreneurship, we can conclude that the cause of the low level of entrepreneurial activity of medium-sized enterprises is precisely the low level of its first construct, both in terms of creating new jobs as well as in the domain of production and technological innovations. On the other hand, self-renewal activities are equally represented as in the case of large enterprises, and they are at a much lower level than in the case of small enterprises. The justification for this level of self-renewal activities is the fact that with growth, enterprises become significantly more stable and less flexible than at the beginning of their business, especially in terms of organization of work, structure, procedures, as well as with the mission, directions of operations and other strategic activities. According to Bierwerth's claims larger firms are often trapped in their bureaucratic and highly formalized structure, mitigating the successful implementation of corporate entrepreneurship (Bierwerth et al., 2015). Additionally, if the implementation of entrepreneurial activities is analysed through the function of risk to lose the current position and available funds of the company, the risk certainly grows with the increase in the size of the company. Although we can perceive the existence of differences both in terms of the level of corporate advancement, and in terms of its individual elements, we cannot see whether these differences are statistically significant. In order to test the statistical significance of the differences in the level of entrepreneurial activities amongst individual groups of companies, one-way analysis of variance (ANOVA) was used. The first step was to analyse whether there are statistically significant differences between small, medium and large enterprises in terms of the level of entrepreneurial activities (CE). Descriptive statistics of the observed variables for all enterprises, but also for all three groups of enterprises are given individually in Table 1.

*Table 1: Descriptive statistics on the level of entrepreneurial activities*

Descriptives								
CE								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Small	54	3.5869	.59206	.08057	3.4253	3.7485	2.47	4.87
Medium	76	3.3033	.73904	.08477	3.1344	3.4722	1.09	4.46
Large	78	3.4056	.76491	.08661	3.2332	3.5781	1.04	4.64
Total	208	3.4153	.71945	.04988	3.3169	3.5136	1.04	4.87

The assumptions about the satisfaction of the normal distribution according to Kolmogorov-Smirnov test indicate that the observed variable CE for a group of small and medium-sized enterprises has a normal distribution ( $p = .200$ ), while in the case of large enterprises we cannot claim to come from a set with a normal distribution (Annex 2, Table 1). According to the ANOVA test results shown in Table 2, we can conclude that there is a statistically significant difference in the level of entrepreneurial activities among the observed groups of enterprises ( $p = .085$ ).

Table 2: The results of the ANOVA test

ANOVA					
CE					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.550	2	1.275	2.499	.085
Within Groups	104.594	205	.510		
Total	107.144	207			

Although the use of this test indicates the existence of statistically significant differences between the observed groups of companies, based on its results we cannot conclude among which specific groups the differences occur. For this reason, post-hoc tests are also used in the paper. Before carrying out a post hoc analysis, it is necessary to check if the assumptions about the homogeneity of the variance are satisfied, since it indicates which type of test that should be used. Based on the obtained results of Levin homogeneity test (Table 3) we cannot reject the hypothesis of their equivalence ( $p = .158$ ), so we have used the Tukey post hoc test to identify the groups of enterprises among which statistically significant differences occur.

Table 3: Test of Homogeneity of Variances

CE			
Levene Statistic	df1	df2	Sig.
1.861	2	205	.158

Multiple Comparisons table contains the results of the Tukey post hoc test (Table 4), which show that there are statistically significant differences in the level of entrepreneurial activities between small and medium enterprises ( $p = .068$ ) at a level of significance of 10%. The level of entrepreneurial activities is higher in the case of small than in the case of medium-sized enterprises, which can be justified by a greater degree of enterprise flexibility in the initial stages of development in comparison to medium-sized enterprises in which the degree of formalization of both structural and organizational as well as management activities is at a much higher level. We cannot claim that there are statistically significant differences in the state of the observed variable among other groups of companies.

Table 4: Multiple Comparisons

Dependent Variable: CE						
Tukey HSD						
(I) Type	(J) Type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Small	Medium	.28356	.12713	.068	-.0166	.5837
	Large	.18121	.12645	.326	-.1173	.4797
Medium	Small	-.28356	.12713	.068	-.5837	.0166
	Large	-.10235	.11513	.648	-.3742	.1695
Large	Small	-.18121	.12645	.326	-.4797	.1173
	Medium	.10235	.11513	.648	-.1695	.3742

For the purpose of a more detailed analysis of the causes of the defined differences, we have examined whether there are statistically significant differences between companies when it comes to individual dimensions of corporate entrepreneurship, i.e. innovation and venture (ICV) and self-renewal activities (SR). The descriptive statistics of the observed variables, as well as testing the satisfaction of the assumptions for carrying out the tests are given in Appendix 2. The results of the ANOVA test, shown in Table 5, indicate that there is a statistically significant difference only in case of the first element, both innovations and ventures ( $p = .040$ ) at a level of significance of 5%, while differences do not exist in case of self-renewal activities ( $p = .200$ ).

As in the previous case, the post hoc test was used for the analysis of group of companies in which differences exist. The results of the post hoc testing are shown in Table 6. The only difference in comparison with the previously performed post hoc test is the fact that in this case the Games-Howell post hoc test was used, because Levin's test results indicate that the equality of variances hypothesis is rejected ( $p = .015$ )(Annex 2, Table 4).

Table 5: ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
ICV	Between Groups	3.926	2	1.963	3.281	.040
	Within Groups	122.665	205	.598		
	Total	126.591	207			
SR	Between Groups	2.036	2	1.018	1.624	.200
	Within Groups	128.492	205	.627		
	Total	130.528	207			

Table 6: Multiple Comparisons

Dependent Variable: ICV Games-Howell						
(I) Type	(J) Type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Small	Medium	.34267*	.12607	.020	.0437	.6416
	Large	.13330	.12393	.531	-.1605	.4272
Medium	Small	-.34267*	.12607	.020	-.6416	-.0437
	Large	-.20937	.13283	.259	-.5238	.1050
Large	Small	-.13330	.12393	.531	-.4272	.1605
	Medium	.20937	.13283	.259	-.1050	.5238

\*. The mean difference is significant at the 0.05 level.

Based on data in Table 6, it is confirmed again that the difference in the level of corporate entrepreneurship, but now in the context of its first dimension, that is, innovations and ventures, occurs in the case of medium and small enterprises ( $p = .020$ ). This indicates that the business of small enterprises, unlike medium-sized enterprises, is more entrepreneurial oriented in the context of both production and technological innovations, as well as in terms of creating new jobs related to the existing business domain. This type of business is also characteristic for small enterprises, since they are at the beginning of their own development, which requires a constant investment in growth and new ways of expanding the market. Bierwerth with associates also confirms this, pointing out that the growth of small enterprises is a key challenge precisely in continuous adaptation and self-renewal (Bierwerth et al., 2015). Their flexibility makes them space for rapid changes in both products and services, as well as the markets on which they operate. On the other hand, a lower level of innovation and entrepreneurial ventures in medium-sized enterprises is certainly the result of a formalized just established business mode. After a period of development, adaptation and constant change in order to grow on the market, medium-sized enterprises finally enter the phase of a stable structure, management methods and more explicit degree of control. Just established formal procedures, clear channels of communication, bureaucratic system of management and control require a certain period of adaptation of both employees and the business in whole. Repeated sudden changes probably would not have a positive impact on the unfixed, still insufficiently established business system. This concept is supported by the fact that, although there are no statistically significant differences between medium and large enterprises in terms of corporate entrepreneurial levels, the degree of both production as well as technological innovation is higher in the case of large enterprises, which are much more arranged in terms of established formal systems of business. The common to all observed companies in Serbia, regardless of their size, is the fact that in terms of all its dimensions, the state of corporate entrepreneurship is slightly above the average level.

## 5. CONCLUSION

Entrepreneurial activities have a major role both in the further growth and development of small enterprises, as well as in the revitalization of already mature companies. The condition of the internal ambient, as well as the orientation of companies of different sizes in terms of entrepreneurial activities, however, often differ. That is the reason why the current state of the level of entrepreneurial activities in enterprises of different sizes is examined in this paper. The results of the analysis show that the level of corporate entrepreneurship is still the highest in small enterprises in Serbia, both in terms of innovation and ventures, as well as in the implementation of self-renewal activities. It is interesting that the ratio of the level of innovation and ventures from one side and the size of the enterprise from the other can be presented by the U-curve, which indicates that they are the most represented in the case of large and small enterprises but they are very weak in the medium - sized enterprises. On the other hand, self-renewal activities are decreasing with the growth of enterprise size. However, the results of the ANOVA test indicate that statistically significant differences exist only between small and medium-sized enterprises, both in terms of innovations and ventures, while the defined differences between other groups of companies both in terms of the overall level of corporate entrepreneurship and in the case of its individual dimensions are not statistically significant. All this indicate the fact that entrepreneurial activities continue to be mostly related to small enterprises in Serbia, while the frequency of changes in already mature companies is not so common. This is especially emphasized in the case of medium-sized enterprises, where the level of innovation, entrepreneurial ventures and self-renewal activities is the lowest. In addition to the defined differences, the level of entrepreneurial activity of all groups of enterprises is at a level slightly above the average. As might be expected, there is a space for further improvement both in the case of medium-sized, as well as in small and large enterprises. The existence of differences among the observed groups of enterprises can be justified only in the case that, depending on the size of the enterprise, different levels of entrepreneurial activities lead to superior performance. This will certainly be one of the next research topics.

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## *APPENDIX*

### **APPENDIX 1. - ORIGINAL SURVEY DISTRIBUTED TO CORPORATE MANAGERS (ZAHRA, 1993)**

#### **I Venturing and Innovation**

**1. New Business Creation.** Indicate the extent to which your company has emphasized each of the following items. (Minor Emphasis= 1, Major Emphasis=5)

- a) stimulating your new demand on your existing products in your current markets through aggressive advertising and marketing
- b) broadening your business lines in your current industries
- c) pursuing new businesses in new industries that are related to your current business
- d) finding new niches for your products in your current markets
- e) entering new businesses by offering new lines and products

**2. Product innovation.** Indicate the extent of changes that might have taken place in your company over the past three years. (Decreased Significantly= 1, Increased Significantly=5)

- a) your company's emphasis on developing new products
- b) rate of your new product introduction into the market
- c) your company's spending on new product development activities
- d) the number of new products added by your company
- e) the number of new products introduced by your company

**3. Technological Entrepreneurship.** Indicate the extent of changes that may have taken place in your company over the past three years. (Decreased Significantly= 1, Increased Significantly=5)

- a) your investment in developing proprietary technologies
- b) your emphasis on creating proprietary technology
- c) your adoption of technologies developed by other companies or industries
- d) your company's emphasis on technological innovation
- e) your company's emphasis on pioneering technological developments in your industry

## II Self-Renewal Activities

**1. Mission Reformulation.** Indicate the extent to which your company has emphasized each of the following items. (Minor Emphasis= 1, Major Emphasis=5)

- a) defining your company's mission
- b) revising your business concept
- c) redefining the industries in which your company will compete

**2. Reorganization.** Indicate the extent to which your company has emphasized each of the following items. (Minor Emphasis= 1, Major Emphasis=5)

- a) reorganizing units and divisions to increase innovation
- b) coordinated activities among units to enhance company innovation
- c) increasing the autonomy (independence) of different units to enhance their innovation
- d) adopting flexible organizational structures to increase innovation

**3. System-Wide Changes.** (Minor Emphasis= 1, Major Emphasis=5)

- a) training employees in creativity techniques
- b) rewarding employees for creativity and innovation
- c) establishing procedures to solicit employee ideas for innovations
- d) establishing procedures to examine new innovation ideas
- e) designating formal idea (project or venture) champions
- f) making resources available for experimental projects

## APPENDIX 2.

*Table 1: Kolmogorov-Smirnov test of normality for CE*

	Type	Kolmogorov-Smirnov <sup>a</sup>		
		Statistic	df	Sig.
CE	Small	.096	54	.200*
	Medium	.065	76	.200*
	Large	.100	78	.050

Table 2: Descriptive statistics: Corporate entrepreneurship dimensions

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
						ICV	Small		
Medium	76	3.1597	.83111	.09533	2.9698		3.3497	1.07	4.47
Large	78	3.3691	.81691	.09250	3.1849		3.5533	1.00	4.93
Total	208	3.3272	.78202	.05422	3.2203		3.4341	1.00	4.93
SR	Small	54	3.6702	.77168	.10501	3.4596	3.8808	2.22	5.00
	Medium	76	3.4459	.76800	.08810	3.2704	3.6214	1.11	4.69
	Large	78	3.4432	.82725	.09367	3.2567	3.6297	1.08	4.89
	Total	208	3.5031	.79409	.05506	3.3946	3.6117	1.08	5.00

Table 3: Kolmogorov-Smirnov test of normality for CE dimensions

	Type	Kolmogorov-Smirnov <sup>a</sup>		
		Statistic	df	Sig.
ICV	Small	.092	54	.200*
	Medium	.153	76	.000
	Large	.083	78	.200*
SR	Small	.081	54	.200*
	Medium	.092	76	.175
	Large	.051	78	.200*

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 4: Test of Homogeneity of Variances for CE dimensions

	Levene Statistic	df1	df2	Sig.
ICV	4.307	2	205	.015
SR	.039	2	205	.961