Managers’ perspective of corporate entrepreneurship in Serbia

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Abstract: The main purpose of this study is to investigate how management support affected corporate entrepreneurship. Based on the extensive literature on corporate entrepreneurship in developed countries and a review of past research, the study filled a gap by investigating phenomena in a transition environment. The subject of the study is specific organizational factors of corporate entrepreneurship. Analysis was conducted using the Corporate Entrepreneurship Assessment Instrument—CEAI completed by 287 respondents from selected companies. Respondents identified gender, educational level, and managerial position in the companies. The following statistical methods have been used in this study: Cronbach’s Alpha, Analysis of Variance (ANOVA), Multivariate Analysis of Variance (MANOVA), principal component analysis, and regression analysis. The results revealed that the questionnaire could be used for investigating the internal factors of corporate entrepreneurship in Serbian context. There were no gender or educational level differences in the assessment of corporate entrepreneurship. However, there was a significant difference between top and middle-level managers in the assessment of key factors of corporate entrepreneurship. Implications for theory and practice: The research once again confirmed as well as of the CEAI. This is especially important because the research was conducted in a very specific context of a country—Serbia. Also, the research indicated that this specific research context may have partially changed the picture of organizational factors of corporate entrepreneurship without compromising the general validity of the model. Originality and value: To reveal potential of use of CEAI in specific environment.

Keywords: innovation; strategy; corporate entrepreneurship; CEAI model; Serbia

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1. Introduction

Many authors have sought to identify the factors that create a favorable environment in the organization for the development of internal entrepreneurship1. Among these researches, perhaps the most famous one is the research of Kuratko and associates that resulted in the creation of the Corporate Entrepreneurship Assessment Instrument (CEAI)1,2. While creating this instrument, Kuratko et al.1 have identified five key components of the organizational context that facilitate corporate entrepreneurship. Many other authors have used this instrument to assess the ability of companies to stimulate entrepreneurial behavior of employees1,3–6. In addition, some authors have used CEAI to verify that the identified factors of corporate entrepreneurship are indeed valid in different types of organizations and in different contexts (see Table 1). By using CEAI, this paper aims to identify organizational factors of corporate entrepreneurship in Serbia, and thus contribute to a better understanding of both the factors of corporate entrepreneurship in general and the phenomenon of corporate entrepreneurship in Serbia.

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The field of corporate entrepreneurship still has many opportunities to build a stronger theoretical and empirical foundation\(^7\). The concept had been investigated in strategic management, innovation management, and entrepreneurship research\(^8\).

From a theoretical perspective, there are four main dimensions for analyzing corporate entrepreneurship, i.e., strategy, structure, people, and rewards\(^7\). A few studies had been focused on top managers as the influential factors of corporate entrepreneurship\(^9-12\). This paper tried to fill the theoretical gap by the study of managers’ assessment of corporate entrepreneurship in a developing country. The applied research instrument Corporate Entrepreneurship Assessment Instrument (CEAI) had been constructed in Anglo-Saxon culture\(^2\). Also, this study contributes to the cross-culture literature.

An extensive literature review has been identified the theoretical gap in domain of international corporate entrepreneurship\(^7\). This paper contributes to better understanding the different institutional environments on the success of corporate entrepreneurship.

The main aim of the paper is to stress the need and role of corporate entrepreneurship in the process of transition to free market conditions. The subject of the research is specific organizational factors of corporate entrepreneurship from Serbian managers’ perspective. However, the following proposition can be stated:

H\(_0\): Management supported corporate entrepreneurship in observed Serbian companies.

In this study, the following differences in managers’ perception of the key factors have been explored:

H\(_1\): There are significant differences between managerial position and assessment of corporate entrepreneurship in observed Serbian companies.

H\(_2\): There are significant gender differences in the assessment of each factor of corporate entrepreneurship.

H\(_3\): There are significant differences in the assessment of corporate entrepreneurship and the educational level of respondents in Serbian companies.

The paper is structured as follows: after the introduction, the concept of corporate entrepreneurship is defined and the key contributions to the research of organizational factors conditioning it, along with the determinants of corporate entrepreneurship identified by Kuratko et al.\(^1\) are presented in the literature review section. The research methodology will be presented next, followed by the research results presentation and their discussion. Finally, concluding remarks, limitations of work, and directions of future research are stated in the conclusion. Research instrument—CEAI is presented in Appendix.

2. Literature review

Research on corporate entrepreneurship so far has dealt mainly with defining the phenomenon\(^13\), the impact on performance\(^14\), the factors that encourage corporate entrepreneurship and the characteristics of the organization that nurtures it\(^14\), the role of managers as facilitators, measurement of corporate entrepreneurship\(^13\), and the influence of other variables that have indirect or mediatory influence on corporate entrepreneurship\(^15\).

Research on corporate entrepreneurship at the organizational level is, therefore, focused on identifying the organizational factors that enable and encourage entrepreneurial behavior at the individual level. Pursuant to the topic of this paper, corporate entrepreneurship will here be explored at the organizational level.

The underlying assumption is that acting entrepreneurially is something that people choose to do, and top management of an organization can influence that choice by the corporate environment it creates\(^16\). Since the
organizational factors of corporate entrepreneurship are the subject of the research in this paper, we will now present an overview of the previous research into this topic.

2.1. Internal factors of corporate entrepreneurship

The review of the literature on organizational factors of corporate entrepreneurship shows a high degree of convergence which enables us to shorten the list of possible factors. Many factors appear in different forms or under different names in different works, but their content is, more or less, the same. Also, the authors create different combinations of factors, but most often the same or similar factors appear in these combinations. We will also notice that many factors intertwine and partially overlap. In our opinion, the most frequently identified factors of corporate entrepreneurship are: management support, rewards, organizational structure, organizational culture, autonomy, time availability, and resource availability. The following is a short description of the most commonly identified factors.

1) Management support or supportive leadership or organizational support[1,17]. This is the most frequently mentioned organizational factor in the literature. It consists of managers’ public support, motivation, encouragement and strengthening of employees to develop new business ventures and ideas, rewarding those who do, and also providing the resources needed to implement ideas and establishing the structural mechanisms that will provide a favorable context for entrepreneurial behavior of employees. This factor overlaps to some extent with some other factors, since resource availability, organizational structure, and rewards are also treated as separate factors.

2) Rewards[6,17–19]. Entrepreneurial behavior will be developed in the organization to the extent in which it is valued and rewarded. Therefore, the reward system that prizes entrepreneurial behavior is a very important element of the organizational context in which corporate entrepreneurship is encouraged. This factor can be defined as the degree to which entrepreneurial behavior, risk-taking and innovation are rewarded, valued and strengthened in the organization, both through a formal reward system and through direct communication between managers and employees.

3) Autonomy at work, work discretion[17,18,20]. Autonomy at work is a necessary prerequisite for individual experimentation and exploration as the first step in developing innovation in an organization. Employees cannot develop new business ideas if they do not have flexibility and freedom to pursue novel or interesting ideas. Work discretion includes autonomy of employees that allows them to make relatively independent decisions about how they will do the job. It also includes error tolerance and the right to learn through trial and error. Delegating decision-making authority to lower levels in the organization is also welcome.

4) Organizational structure that supports entrepreneurship within the organization is “flat”, i.e., with few hierarchical levels, with permeable external boundaries with the outside world and internal boundaries between organizational units, with a high degree of decentralization of decision-making, and with a job design that implies employee autonomy. In addition, the entrepreneurial structure provides a fast and easy flow of information from the environment to the organization as well as within the organization in both, horizontal and vertical direction.

5) Organizational culture[1,20–24]. Organizational culture as a system of assumptions, values, norms, and attitudes shared by the members of an organization which significantly determines their perception, conclusions, and behavior[25]. There are two basic types of research method that researchers use while exploring organizational culture: quantitative and qualitative. Quantitative research uses measurement to obtain knowledge, while qualitative research uses description. Therefore, data which may be quantified (expressed
by numbers) are gathered by quantitative research methods, and these data can be operated on by quantitative methods of analysis (computation). Hence, the advantage of qualitative research is the depth and breadth of analysis, and the advantage of quantitative research is the size of the sample and generalization and quantification of results. Since it is possible to combine the two principal methodological approaches in various ways there are several possible hybrid methodologies in organizational culture research. Each of them is legitimate as long as the researcher is not making unallowed combinations of methods, is aware of all the characteristics, advantages, and disadvantages of his/her research design, and makes this public to interested readers[25].

6) Time availability[4,26]. Creating new business ideas within an existing organization takes some time. If employees use all available time for regular work tasks, they will not have the time to create and implement new ventures. In order to nurture entrepreneurship in an organization, the work must be structured in a way that leaves employees enough time to think about new ideas and endeavors.

7) Resource availability[1,19]. Employees must perceive the availability of material and financial resources for the realization of entrepreneurial ideas and activities. Otherwise, they will not be inclined to engage in their development at all because they will doubt the possibility of their realization.

8) Risk taking, tolerance for failure[6,17,19]. Several authors state that the entrepreneurial organization stimulates the assumption of reasonable risk and tolerates mistakes that occur when trying to introduce innovations. Risk taking and tolerance for failure should be part of the company’s policy and style of its top management as well as part of its culture. Employees must perceive a tolerant attitude towards their mistakes if they make them in an attempt to create and implement risky innovations.

One of the most important and frequently used classifications of organizational determinants of corporate entrepreneurship is the result of many years of research[2,15,18,27]. At this moment, Kuratko, a famous dr. K., is one of the most cited authors in the field of corporate entrepreneurship. Through longitudinal research studies they identified five key factors or dimensions of the internal organizational environment that support corporate entrepreneurial behavior and innovation in organizations[2].

These factors largely overlap with the factors we identified in the previous section, except for organizational culture which has been left out in the classification of Kuratko et al.[2]. They reduced the remaining seven factors to five. Therefore, it can be said that their classification has sublimated most of the previous research on the organizational determinants of corporate entrepreneurship.

2.2. The corporate entrepreneurship assessment in developed countries

The questionnaire called the Corporate Entrepreneurship Assessment Instrument (CEAI) is built around the five listed factors of corporate entrepreneurship and comprises 48 questions that are answered by using the Likert scale. A certain number of questions are processed by using the reversed scale. Each factor is assigned a certain number of questions that reflect the content and essence of the factor itself. The CEAI’s validity and usefulness have already been tested and proven for both academic research and practice in several studies (see Table 1).

In this paper, we will present a study that once again verifies the validity of Kuratko et al.[2] concept of organizational factors of corporate entrepreneurship as well as the validity of CEAI. If the result does not show the same five factors, it would mean one of two things: that CEAI and the classification of corporate entrepreneurship factors proposed by Kuratko et al.[2] are not valid, or that the context of Serbia has some specifics that imply some other factors of corporate entrepreneurship. In any case, the research will show the factors of corporate entrepreneurship in Serbia.
### 2.3. The corporate entrepreneurship measurement in transition environment

The high level of uncertainty, broad range of opportunities by the privatization and restructuring process, and numerous informal rules and behaviors from the past are the main characteristics of transition environment. The current environment conditions, i.e., complex and unstable institutional factors in foreign markets, make harder for the entrepreneurs and managers from transition economies to raise funds from cross-border investors as well as to sustain international competitiveness\[^{28}\].

Several studies pointed to the important role of external environment on corporate entrepreneurship\[^{29-31}\]. Practice to analyze environmental trends creates an opportunity recognition which is the essential part of entrepreneurial mindset and precondition of successful corporate entrepreneurship\[^{32}\].

Corporate entrepreneurship have been broadly analyzed in developed countries, primary U.S.A. and Canada (see Table 1). A few studies had focused the corporate entrepreneurship in emerging and transitional economics\[^{3, 33-40}\].

In this study, Serbia is a case in point. The latest Global Innovation Index ranked Serbia 54th place on the 132 world economies\[^{41}\]. The best performances had in knowledge and technology outputs, and the weakest performances had been in creative outputs. Relationship between innovation investment and results showed that Serbian companies had been less productive than average innovation performance in Europe.

The reliability of the CEAI has already been tested and proven for both academic research and practice in several studies in developing economies (see Table 2).

### Table 1. The reliability of CEAI in developed economies.

<table>
<thead>
<tr>
<th>Studies</th>
<th>Country</th>
<th>Methods</th>
<th>Main results on CEAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>[27]</td>
<td>U.S.A., Canada</td>
<td>Comparative analysis, factor analysis</td>
<td>The comparative analysis showed the significant similarities between U.S.A. and Canadian managers.</td>
</tr>
<tr>
<td>[4]</td>
<td>U.S.A., Canada</td>
<td>Exploratory and confirmatory factor analyses</td>
<td>The assessment of rewards has been the same. In all other factors, there were significant differences between U.S.A. and Canadian middle-managers.</td>
</tr>
<tr>
<td>[28]</td>
<td>U.S.A.</td>
<td>Descriptive statistics, regression</td>
<td>The corporate entrepreneurship was mediator between CEAI factors and individual characteristics of U.S.A. middle-managers.</td>
</tr>
<tr>
<td>[29]</td>
<td>U.S.A.</td>
<td>Econometric model</td>
<td>The CEAI factors influenced corporate entrepreneurship, while the individual characteristics had not.</td>
</tr>
<tr>
<td>[30]</td>
<td>U.S.A.</td>
<td>Moderated Poisson regression analysis</td>
<td>The senior and middle-level managers higher assessed all five factors then first line managers.</td>
</tr>
<tr>
<td>[31]</td>
<td>U.S.A.</td>
<td>Multivariate regression</td>
<td>All five CEAI factors had influenced on innovation performance.</td>
</tr>
<tr>
<td>[26]</td>
<td>U.S.A.</td>
<td>Confirmatory factor analysis</td>
<td>The highest impact on corporate entrepreneurship had management support.</td>
</tr>
<tr>
<td>[32]</td>
<td>France</td>
<td>Case study</td>
<td>All five CEAI factors had important role in the implementation of corporate entrepreneurship strategy.</td>
</tr>
</tbody>
</table>

### Table 2. The reliability of CEAI in emerging and transition countries.

<table>
<thead>
<tr>
<th>Studies</th>
<th>Country</th>
<th>Methods</th>
<th>Main results on CEAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>[33]</td>
<td>Serbia</td>
<td>Factor analysis.</td>
<td>Alpha of whole CEAI was 0.927, but Alpha of time availability was very low (0.465).</td>
</tr>
<tr>
<td>[3]</td>
<td>Serbia</td>
<td>Descriptive statistics, Pearson correlation, t test, ANOVA, and factor analysis.</td>
<td>Age, education, years of work experience, and position in the organization have been important determinants of CE.</td>
</tr>
</tbody>
</table>
Table 2. (Continued).

<table>
<thead>
<tr>
<th>Studies</th>
<th>Country</th>
<th>Methods</th>
<th>Main results on CEAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>[34]</td>
<td>Egypt</td>
<td>Confirmatory factor analysis.</td>
<td>The entrepreneurial behavior of middle-managers had depended on top management support, rewards, and work discretion.</td>
</tr>
<tr>
<td>[36]</td>
<td>Romania</td>
<td>Factor analysis.</td>
<td>The ten factors resulting from the research, which correspond to the Romanian entrepreneurial culture.</td>
</tr>
<tr>
<td>[37]</td>
<td>Brazil</td>
<td>Correlation analysis.</td>
<td>Majority of the correlations between the organizational CEAI factors and individual characteristics were positive, but the direction remained unclear.</td>
</tr>
<tr>
<td>[38]</td>
<td>North Mexico</td>
<td>Confirmatory factor analysis.</td>
<td>Blurred connection between organizational factors and personal entrepreneurial characteristics of managers.</td>
</tr>
<tr>
<td>[39]</td>
<td>Serbia</td>
<td>Factor analysis.</td>
<td>There was significant slow-down in innovation during the COVID-19 pandemic.</td>
</tr>
<tr>
<td>[40]</td>
<td>Serbia</td>
<td>Confirmatory factor analysis.</td>
<td>There was significant positive correlation between recovery and corporate entrepreneurship.</td>
</tr>
</tbody>
</table>

3. Methodology

The research took place in the selected companies’ facilities from January to June 2021. The survey was conducted directly, i.e., the participants were aware they were participating in a survey, but the questions were not known ahead of time. This was important to avoid any behavioral bias in the responses. The majority of the “survey insiders” used their business contacts successfully. The response rate was outstanding—98.97% (from 290 distributed questionnaires, 287 had been filled by respondents).

3.1. Sample

A research sample consisted of 287 respondents balanced by gender, educational level, and managerial level from 10 selected Serbian companies. The companies have been selected according their size, industry, and business results. In 2021, 589 companies operated in Serbia with 532,000 employees, i.e., 43.2% of total employees. All ten companies are large companies according their annual revenues (over 40 million euro), assets over 20 million euro each, and over 250 employees. Moreover, it is the most successful companies in Serbia regarding profits. Selected companies are from mining, energy, telecommunication, trade and manufacturing industries, especial food and beverages, tobacco. Their market share at Serbian market was over 80% in 2021. Therefore, the sample can be representative for investigating various phenomena in Serbian large companies.

3.2. Instrument

The research instrument was CEAI consisting of 48 questions. Written permission for using the CEAI questionnaire was provided by the authors (see Appendix). Since the CEAI was created to assess the presence of five previously identified factors of corporate entrepreneurship, each of these factors was addressed by several of questions in the questionnaire. The first 19 questions are dedicated to the management support factor, the next 10 questions evaluate the work discretion factor, six questions are dedicated to the rewards and reinforcement factor, six questions are devoted to the time availability factor, and the last seven questions are related to the organizational boundaries factor. Respondents were expected to express their level of agreement on a five-point scale, where: 1—strongly disagree, 2—disagree, 3—not sure, 4—agree, 5—strongly agree. The questionnaire was translated into Serbian by a professional translator and then translated again by another
translator into English. Then, the original and translated versions of the questionnaire in English were compared and the correction in the questionnaire in Serbian was made accordingly.

Considering the general indifference, regarding participation in the study in Serbia, as well as the world pandemic caused by COVID-19, the electronic and hard-copy versions of the questionnaire were offered. The authors compiled a list of organizations in Serbia where they had business contacts or friends in managerial positions (“survey insiders”).

3.3. Statistical methods

Data were processed by appropriate statistical procedures. The applied procedures and their sequence of application have their place in scientific research work. Special care should be taken to minimize the loss of information obtained during the survey. The order of application of the procedures is of utmost importance both for the conclusion and for the timely elimination and inclusion of certain features, which will enable better research. The following statistical methods have been used in this study: Cronbach’s Alpha, Analysis of Variance (ANOVA), MANOVA, and regression analysis.

To measure the reliability of the CEIA questionnaire, Cronbach’s Alpha has been used for all 48 items, and every five factors. Minimally acceptable levels of Cronbach’s Alpha are between 0.65 to 0.70; respectable levels are between 0.70 to 0.80; very good level is considered between 0.80 to 0.90, and much higher than 0.90 the researchers need consider to shortening the scale[44].

To test hypotheses, Analysis of Variance (ANOVA) and MANOVA have been used. To compare do internal factors differ by socio-demographic variables the MANOVA have used (tested hypotheses $H_1$, $H_2$, and $H_3$). By ANOVA we tested statistical differences on the dependent variable—corporate entrepreneurship by predictors, i.e., management support, rewards, work discretion, organizational boundaries, and time availability. Then the regression analysis has been employed.

Therefore, by the aforementioned statistical methods, starting hypotheses have been tested. The principal component analysis used as data reduction technique with Promax rotation[45]. Data analysis was conducted using SPSS Statistics V25.

4. Results

Before actually conducting the factor analysis, the data reliability analysis was performed. This was done by calculating Cronbach’s Alpha for five data sets separately. Since the CEAI contains questions grouped around five factors of corporate entrepreneurship, a reliability analysis was performed for each of the five groups of questions separately. It turned out that Cronbach’s Alpha was very good and good for all sets of questions except for the one dedicated to the time availability factor, and this also announced the result of the factor analysis in which the said factor was not even differentiated (see Table 3).

<table>
<thead>
<tr>
<th>Question set</th>
<th>Factor</th>
<th>Cronbach’s Alpha</th>
<th>Acceptable level[44]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–19</td>
<td>Management support</td>
<td>0.930</td>
<td>Excellent</td>
</tr>
<tr>
<td>20–29</td>
<td>Rewards/reinforcement</td>
<td>0.811</td>
<td>Very good</td>
</tr>
<tr>
<td>30–35</td>
<td>Work discretion</td>
<td>0.793</td>
<td>Respectable</td>
</tr>
<tr>
<td>36–41</td>
<td>Organizational boundaries</td>
<td>0.7410</td>
<td>Respectable</td>
</tr>
<tr>
<td>42–48</td>
<td>Time availability</td>
<td>0.5640</td>
<td>Unacceptable</td>
</tr>
<tr>
<td>1–48</td>
<td>Corporate entrepreneurship</td>
<td>0.890</td>
<td>Very good</td>
</tr>
</tbody>
</table>
The results of the factor analysis of the response to CEAI in Serbian banks show that four out of five factors that Kuratko et al.\cite{2} defined as organizational factors of corporate entrepreneurship were differentiated. This means that CEAI has once again proven to be a valid tool for assessing the factors of corporate entrepreneurship, this time in Serbia. Also, it means that the four identified factors of corporate entrepreneurship have once again been confirmed in practice.

The previous testing of CEAI in Serbia has revealed very low Alpha of Time availability factor\cite{33,39,40}. Therefore, Time availability has not been recognized as a relevant factor of corporate entrepreneurship in Serbia for a long time. Also, studies from some countries such as Mexico, Romania and Brazil\cite{36–38} have showed that time availability has not been recognized as a relevant factor of corporate entrepreneurship (see Table 1). On the other hand, all studies conducted in USA and Canada confirmed that Time availability was among relevant organizational factors of corporate entrepreneurship\cite{28–30}.

Therefore, the results of MANOVA have been divided into gender differences, educational level differences, and managerial position differences.

Regarding managerial position, results indicated $p < 0.01$, hypothesis $H_1$ accepted, this means that there was a significant difference between managerial position regarding each factor as well as summarized factor—corporate entrepreneurship.

Gender differences—based on MANOVA ($p = 1.000$), it can be concluded that there is no difference in assessing five factors from CEAI between genders. Computing the Mahalanobis distance between the gender gave another indication of similarities or differences. The distances in this research sample indicated that the distance between the female and male respondents was moderate.

Educational level differences. The analysis was carried out on each factor and sum factor on a sample of 287 respondents, comprising 6 sub-samples: secondary education, college, university degree, master, master of science, and Ph.D. based on the value of $p = 1.000$ (MANOVA analysis), hypothesis $H_3$ had been rejected, which means that there were no statistically significant differences between educational level.

Results of the $H_0$ tested were presented in Table 4.

<table>
<thead>
<tr>
<th>Predictors (a)</th>
<th>Dependent variable corporate entrepreneurship</th>
<th>Standardized β</th>
<th>t</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management support</td>
<td></td>
<td>0.74</td>
<td>9.93</td>
<td>0.00</td>
</tr>
<tr>
<td>Work discretion</td>
<td></td>
<td>0.06</td>
<td>0.84</td>
<td>0.40</td>
</tr>
<tr>
<td>Rewards</td>
<td></td>
<td>−0.02</td>
<td>−0.21</td>
<td>0.83</td>
</tr>
<tr>
<td>Time availability</td>
<td></td>
<td>−0.03</td>
<td>−0.41</td>
<td>0.68</td>
</tr>
<tr>
<td>Organizational boundaries</td>
<td></td>
<td>−0.08</td>
<td>−1.20</td>
<td>0.23</td>
</tr>
</tbody>
</table>

From all five factors, management support had significant influence on dependent variable, i.e., corporate entrepreneurship, which confirmed started proposition—$H_0$.

The results of the principal component analysis, Promax rotation with Kaiser normalization is presented in Table 5.
Table 5. The principal component analysis of CEAI factors.

<table>
<thead>
<tr>
<th>Item from CEAI</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 3</td>
<td>0.74</td>
</tr>
<tr>
<td>Item 1</td>
<td>0.74</td>
</tr>
<tr>
<td>Item 5</td>
<td>0.70</td>
</tr>
<tr>
<td>Item 4</td>
<td>0.70</td>
</tr>
<tr>
<td>Item 6</td>
<td>0.69</td>
</tr>
<tr>
<td>Item 12</td>
<td>0.68</td>
</tr>
<tr>
<td>Item 14</td>
<td>0.68</td>
</tr>
<tr>
<td>Item 9</td>
<td>0.66</td>
</tr>
<tr>
<td>Item 11</td>
<td>0.65</td>
</tr>
<tr>
<td>Item 2</td>
<td>0.63</td>
</tr>
<tr>
<td>Item 10</td>
<td>0.63</td>
</tr>
<tr>
<td>Item 17</td>
<td>0.62</td>
</tr>
<tr>
<td>Item 8</td>
<td>0.61</td>
</tr>
<tr>
<td>Item 13</td>
<td>0.50</td>
</tr>
</tbody>
</table>

14 of the original 19 items described management support in the Serbian sample. This indicates a shorter list of items in future research. New CEAI questionnaire in Serbian context includes 41 from original 48 items.

5. Discussion

The results of testing the differences, i.e., gender differences, educational level differences, and managerial position differences by MANOVA showed that there were no significant gender or educational level differences. Senior and middle managers had different perspectives on corporate entrepreneurship in observed companies. This goes in line with other studies[2,18].

Of all five factors, only management support had a significant influence on corporate entrepreneurship. According to the latest Hofstede insights[46], people in Serbia accept a hierarchical order and maintain rigid codes of belief and behavior. High scores in power distance and uncertainty avoidance caused an important impact of management support on corporate entrepreneurship in Serbian companies.

This result has also been confirmed by other empirical studies in which the management support had the highest correlation with the success of corporate entrepreneurship[47]. Also, from the theoretical perspective, the management support has been identified as a key factor of corporate entrepreneurship in over 30% of the relevant papers[8].

The first factor included 13 items from original key factor management support with addition of one item from original factor work discretion. The main ideas of factor 1 stain on management support on corporate entrepreneurship.

In Serbian sample, the second factor mixed 5 items from rewards, 3 items from work discretion, one item from organizational boundaries, and one item from management support. The main focus stays on rewards with addition responsibility.

The mixed items from original factors work discretion, organizational boundaries, and time availability formed third factor in Serbian sample. Detail analysis of selected items indicates on organizational boundaries as original described factor[2].
Two items for original factor work discretion have formed factor 4 in Serbian sample. Due to this fact this factor will be unstable for future measurements.

The fifth factor included four items of original time availability factor, and one item from organizational boundaries. The main focus stays on time availability.

Summarizing the results of the principal factor analysis the new factor structure will be management support, rewards and responsibility, organizational boundaries, work discretion, and time availability. New CEAI questionnaire in Serbian context includes 41 from original 48 items.

6. Conclusion

Corporate entrepreneurship is a concept that has been researched for a long time in the development of entrepreneurship within existing companies. Corporate entrepreneurship involves a continuous creative process, whose main objective is to implement innovations in the organization, as a function of successful business and solving problems of consumers and society. Numerous research studies have covered various aspects of corporate entrepreneurship: starting from defining the phenomenon itself, to identifying its dimensions, elements, stages of processes, and factors, and all the way to financial and other effects of corporate entrepreneurship. A particularly important field of research on corporate entrepreneurship is certainly the factors that condition the company’s ability to develop and support entrepreneurship within itself. Organizational (internal) factors that show what capabilities a company needs to develop in order to initiate and maintain entrepreneurship within itself are of particular importance. There is a lot of research in the literature that deal with organizational (external) factors of corporate entrepreneurship, in which a significant number of these factors has been identified. Nevertheless, the 5-factor model developed by Kuratko et al.\cite{1} which was operationalized through the Corporate Entrepreneurship Assessment Instrument (CEAI), stood out. Many research studies have already confirmed the validity of this model and the CEAI based on it, but that does not mean that it should not be still further examined. Therefore, in this paper, we examine the validity of the CEAI model in the context of Serbia.

The research once again confirmed the general validity of the organizational factors model of corporate entrepreneurship of Kuratko et al.\cite{2} as well as of the CEAI. This is especially important because the research was conducted in a very specific context of a country—the national culture of Serbia. Also, the research indicated that it is possible that this specific research context may have partially changed the picture of organizational factors of corporate entrepreneurship without compromising the general validity of the model.

The results of the principal factor analysis pointed to different structure of the original factor, and to short the list of items from 48 in the original CEAI to 41 in specific transitional environment.

The limitations of the study are, without a doubt, significant. Translating sensitive instruments such as surveys always involves a range of linguistic as well as cultural issues. The second limitation relates to the use of factor analysis that can only re-identify factors based on the same instrument. However, the very fact that the original factors have not been fully identified suggests that the factor analysis made sense.

Although the research sample included organizations from various sectors of the Serbian economy, the study focused on one transition environment.

Future study will extend to other Western Balkan countries, i.e., Albania, the North Macedonia, Bosnia and Herzegovina, and Montenegro.
Author contributions

Introduction, LK; literature review, VD; methodology, LK; validation, LK; formal analysis, LK; investigation, LK; resources, LK; data curation, LK; writing—original draft preparation, LK and VD; writing—review and editing, LK and VD; visualization, LK and VD; supervision, LK; project administration, LK; funding acquisition, LK. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declare no conflict of interest.

References


Appendix

The Corporate Entrepreneurship Assessment Instrument (CEAI):

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

1—Strongly disagree; 2—disagree; 3—not sure; 4—agree; 5—strongly agree.

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

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

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

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

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

The instrument used with the authors’ permission was, of course, CEAI translated into Serbian language.