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**CORPORATE ENTREPRENEURSHIP  
MEASUREMENT FOR IMPROVING  
ORGANIZATIONAL PERFORMANCE**

## 1. The concepts of corporate entrepreneurship

A research on entrepreneurship shows, that there is no universal definition or concept of entrepreneurship in existing organizations<sup>1</sup>. Instead, this phenomenon is rich with different approaches and assumptions. Therefore, there is no single construct of entrepreneurship, which results in different operationalizations of this phenomenon. I started my analyses by comparing various contemporary operationalizations of firm's entrepreneurship: Entrepreneurial Management<sup>2</sup>, Entrepreneurial Orientation<sup>3</sup>, Entrepreneurial Performance Index<sup>4</sup>, and Corporate Entrepreneurship Activity Index<sup>5</sup>. Some of the entrepreneurship dimensions and elements used in different operationalizations are additive, some of them exclude each other. I analyze which of the existing dimensions of corporate entrepreneurship correlate best with performance in order to propose a unique and integrated tool for measuring corporate entrepreneurship that would thus represent the firm's performance to the highest degree, without losing connection to previous research<sup>6</sup>.

The first operationalization of corporate entrepreneurship to be discussed is the Entrepreneurial Management. Assuming that entrepreneurship is an opportunity-centered process that enables people to realize the high potential venture regardless of the resources currently controlled, the applicable approach for the proper stream of thinking would be the idea of entrepreneurial management on the organizational level developed by Stevenson and Jarillo<sup>7</sup>. This approach suggests that value creation can take place in every organization<sup>8</sup>, and describes entrepreneurship as the question of strategic management; a quality of the enterprise that protects it from going under due to lack of strategic competencies; an issue representing an entrepreneurial mode

<sup>1</sup> P. Davidsson: *Research Entrepreneurship*. Springer, New York 2005; Idem: *The Domain of Entrepreneurship Research: Some Suggestions*. In: *Advances in Entrepreneurship, Firm Emergence and Growth*. Eds. J.A. Katz, D.A. Shepherd. Vol. 6. Elsevier Science Ltd., Oxford 2003, pp. 315-372; S. Shane, J. Eckhard: *The Individual-Opportunity Nexus*. In: *Handbook of Entrepreneurship Research. An Interdisciplinary Survey and Introduction*. Eds Z.J. Acs, D.B. Audretsch. Kluwer Academic Publishers, Boston-Dordrecht-London 2003, pp. 161-191.

<sup>2</sup> H.H. Stevenson, J.C. Jarillo: *A Paradigm of Entrepreneurship: Entrepreneurial Management*. "Strategic Management Journal" 2001, 22, pp.953-968.

<sup>3</sup> G.T. Lumpkin, G.G. Dess: *Clarifying the Entrepreneurial Orientation Construct and Linking It to Performance*. "Academy of Management Journal" 1996, 21, pp. 135-172; D. Miller, P. Friesen: *Innovation in Conservative and Entrepreneurial Firms: Two Models of Strategic Momentum*. "Strategic Management Journal" 1983, 3, pp. 1-25.

<sup>4</sup> M.H. Morris: *Entrepreneurial Intensity: Sustainable Advantage for Individuals, Organizations and Societas*. Quorum Books, Westport 1998.

<sup>5</sup> M.H. Morris, D.F. Kuratko: *Corporate Entrepreneurship. Entrepreneurial Development within Organizations*. Harcourt Collage Publishers, Orlando 2002; D.F. Kuratko, R.V. Montagno, J.S. Hornsby: *Developing an Intra-preneurial Assessment Instrument for an Effective Corporate Entrepreneurial Environment*. "Strategic Management Journal" 1990, 11.

<sup>6</sup> S.A. Zahra, J.G. Covin: *Contextual Influences on the Corporate Entrepreneurship-Performance Relationships: A Longitudinal Analysis*. "Journal of Business Venturing" 1995, 10(1), pp. 43-58; P. Davidsson: *The Domain...*, op. cit.

<sup>7</sup> H.H. Stevenson, J.C. Jarillo: Op. cit.

<sup>8</sup> See T.E. Brown, P. Davidsson, J. Wilkund: *An Operationalization of Stevenson's Conceptualization of Entrepreneurship as Opportunity-Based Firm Behavior*. "Strategic Management Journal" 2001, 22, pp. 953-968.

of strategic management. Basing on these assumptions, entrepreneurship is further defined as strategic management approach, as well as process, within which opportunities are sought, regardless resources under direct control. This idea places entrepreneurship within broad frames of strategic management and emphasizes opportunity seeking, thus making an entrepreneur independent of the organizational context. Respecting the above assumptions specifically, an attempt was made to define two types of organizations: entrepreneurial and administrative ones. The former seize and pursue of opportunities regardless resources under control; the latter desire to use resources most effectively with no compliance to opportunities appearing in the environment. According to this division, any organization can become either an administrative or entrepreneurial one. Stevenson and Jarillo categorized behaviors present in the management process and divided them into eight areas: strategy orientation, opportunity, resources, control of resources, management structure, reward philosophy, growth orientation, and entrepreneurship culture. Brown, Davidsson, and Wiklund conceptualized the Stevenson's operationalization of entrepreneurship and built a tool that measures the distinguished dimensions. The tool takes a form of a questionnaire, based on a seven-grade Likert scale. Answers towards the left-side of the scale, taking the values from 1 to about 3.5, mean that the analyzed firm manages resources properly, regardless the opportunity that appears, thus being an administrative company. Answers on the right side of the scale (from about 3.5 to 7) mean that the analyzed firm takes up the opportunity regardless resources under control. It is therefore an entrepreneurial company. The tool makes it possible to decide whether the researched companies, regardless their size, are managed in a really entrepreneurial way<sup>9</sup>. Therefore, in this work, I use the tool (after verifying its appliance for the research by means of factor analysis and varimax) to find the relation of entrepreneurial management and performance.

The second discussed tool is the Entrepreneurial Orientation scale developed by Lumpkin and Dess<sup>10</sup>. The entrepreneurial orientation captures a crucial aspect of the way the enterprise is organized that enhances relationship between knowledge-based resource (the ways in which enterprise combine and transform tangible resources) and effectiveness<sup>11</sup>. The entrepreneurial orientation has been found to be a key determinant of firm performance no matter the approach to measurement, regardless using the managerial perceptions of firm-level variables to explain process firm's behaviors indicated by the number of specific actions, or resource allocations

<sup>9</sup> Ibid.

<sup>10</sup> G.T. Lumpkin, G.G. Dess: Op. cit.

<sup>11</sup> J. Wiklund, D. Shepherd: *Knowledge-Based Resources, Entrepreneurial Orientation, and the Performance of Small and Medium-Sized Businesses*. "Strategie Management Journal" 2003, 24, pp. 1307-1314.

to understand content<sup>12</sup>. It reflects an enterprise's proclivity to engage in innovative, proactive, risk-taking strategic activities<sup>13</sup>. It also reflects enterprise's strategic emphasis on competitive aggressiveness and independent autonomous action<sup>14</sup>. All enterprises are placed along a continuum that ranges from highly conservative to highly entrepreneurial<sup>15</sup>. Furthermore, entrepreneurial orientation is a key to enhancing effectiveness<sup>16</sup>. Moreover, such positive effect on performance increases over time<sup>17</sup>. The measures of innovativeness, risk taking and proactiveness originally conceptualized by Miller as well as Covin and Slevin are among the most widely used ones to depict the firm's degree of entrepreneurship<sup>18</sup>. The measures are extended by Lumpkin and Dess (1996) who identified five dimensions of an entrepreneurial orientation construct<sup>19</sup>. According to these authors, entrepreneurial orientation consists of processes, structures, methods, practices, styles, and behaviors managers use to act entrepreneurially. Five dimensions of entrepreneurial orientation – competitive aggressiveness, innovativeness, proactiveness, risk-taking, autonomy – involve intentions as well as actions of key entrepreneurship actors. Additionally, all those configurations might vary independently in the organizational and environmental context<sup>20</sup>. Organizational context includes, for instance, size, structure, strategy, strategy-making processes, firm resources, culture, or the characteristics of top management teams. Environmental context includes external forces such as business cycles, growth rates<sup>21</sup>, or the power of an enterprise's external stakeholders.

The Corporate Entrepreneurship Activity Index<sup>22</sup> attempts to measure internal organizational factors that influence the middle managers as far as initializing entrepreneurial behaviors is concerned. It was found that such behaviors have high correlation with firm performance. The tool describes five elements that promote entrepreneurial efforts in organizations. The first one is proper reward philosophy. The reward

<sup>12</sup> G.T. Lumpkin, G.G. Dess: *Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: The Moderating Role of Environment and Industry Life Cycle*. "Journal of Business Venturing" 2001, 16, pp. 429-451.

<sup>13</sup> J.G. Covin, D.P. Slevin: *Strategic Management of Small Firms in Hostile and Benign Environments*. "Strategic Management Journal" 1989, 10, pp. 75-87; D. Miller, P. Friesen: Op. cit.

<sup>14</sup> G.T. Lumpkin, G.G. Dess: *Clarifying...*, op. cit.

<sup>15</sup> J.G. Covin: *Entrepreneurial versus Conservative: A Comparison of Strategies and Performance*. "Journal of Management Studies" 1999, 28, pp. 439-462.

<sup>16</sup> J. Wiklund: *The Sustainability of the Entrepreneurial Orientation – Performance Relationship*. "Entrepreneurship Theory & Practice" 1999, 24, pp. 37-48.

<sup>17</sup> J. Wiklund: Op. cit.; S.A. Zahra, J.G. Covin: Op. cit.

<sup>18</sup> D. Miller: *The Correlates of Entrepreneurship in Three Types of Firms*. "Management Science" 1983, 29, pp. 770-791; J.G. Covin, D.P. Slevin: Op. cit.

<sup>19</sup> G.T. Lumpkin, G.G. Dess: *Clarifying...*, op. cit.

<sup>20</sup> Ibid.

<sup>21</sup> P. Davidsson, F. Delmar, J. Wiklund: *Entrepreneurship as Growth: Growth as Entrepreneurship*. In: *Strategic Entrepreneurship. Creating a New Mindset*. Eds. M.A. Hitt, R.D. Ireland, S.M. Camp, D.L. Sexton. Blackwell, Oxford 2002.

<sup>22</sup> M.H. Morris, D.F. Kuratko: Op. cit.; D.F. Kuratko, R.V. Montagno, J.S. Hornsby: Op. cit.; J.S. Hornsby, D.F. Kuratko, S.A. Zahra: *Middle Manager's Perception of the Internal Environment for Corporate Entrepreneurship: Assessing a Measurement Scale*. "Journal of Business Venturing" 2002, 17, pp. 253-273.

system that stimulates the performance-related entrepreneurial activity should take into consideration goals, feedback, individual responsibility, as well as results-based motivators. The second area of the CEAI scale is management support that reflects the managerial will to facilitate and promote entrepreneurial activity in the organization. The support may take many forms such as rewarding innovative ideas, assuring necessary assets or expert knowledge, or including entrepreneurial activity in the organization's systems and processes. The third element concerns assets and their availability for entrepreneurial activities taken by the employees, who have to be conscious that assets are at hand for innovative enterprises. This should stimulate bottom-up experimentation and promote risk taking. The fourth aspect of the CEAI tool is the existence of the proper organizational structure, that makes it possible to develop administrative mechanisms through which entrepreneurial and high-performance ideas are assessed, chosen, and implemented. The last area concerns risk-taking which means that managers are ready to take the responsibility for risk as well as to tolerate the possible failure.

Yet another entrepreneurship measurement tool is the Entrepreneurial Performance Index (EPI)<sup>23</sup>. This tool also uses questionnaire with answers based on the Likert scale. It attempts to describe the level and intensity of entrepreneurship in organizations, and comprises such elements as innovativeness, risk taking, and proactiveness. It can be commonly used as a starting point for further research concerning the relation between entrepreneurial intensity and the competition intensity, market orientation, or performance.

I used specifically these four operationalizations of corporate entrepreneurship, assuming that the components described by them reflect to the highest extent the entrepreneurship in existing organizations. Another issue that has to be addressed, is that Entrepreneurial Management and Entrepreneurial Orientation operationalizations are constructs with rich theoretical base in the literature. On the other hand, Corporate Entrepreneurship Assessment Scale and Entrepreneurship Performance Index are not constructs, but mere scales or propositions of entrepreneurship measurement. Moreover, Entrepreneurial Orientation and Entrepreneurial Management refer to large organizations, whereas CEAI and EPI work best in the small and medium-sized organizations<sup>24</sup>. However, in order to distinguish empirical elements of corporate entrepreneurship in Poland, I wanted to use all of these scales, assuming that they are comparable across the whole spectrum of the researched organizations. Therefore I used all the scales and the corresponding elements of entrepreneurship in a single comprehensive questionnaire, reducing further their number by means of factor

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<sup>23</sup> M.H. Morris, D.F. Kuratko: Op. cit.

<sup>24</sup> J. Thedham, L. Pittaway: *Entrepreneurial Intensity in Small Firms*. British Academy of Management Conference. Leeds Metropolitan University, Leeds 2003.

analysis. This way, I assumed, that factor analysis will lead to a unified set of corporate entrepreneurship components, on the basis of which, a single measure of entrepreneurship in existing organizations will be possible to obtain. I stated, that a number of corporate entrepreneurship elements will be present in the organizations of the Upper Silesia Industrial District:

*Hypothesis 1: Entrepreneurship of the researched organizations is a multi-component construct, consisting of elements at least partly equivalent to the theoretical ones.*

## 2. Corporate entrepreneurship and performance link

While certain components of entrepreneurship are frequently argued to be important for performance, little is known about how the presence of intertwining entrepreneurship elements acting additively influence the performance of the firms<sup>25</sup>. Recent research on performance measurement reveals positive influence of Performance Measurement and Management Systems on human resource management, organizational competences, organizational behaviors, or operational effectiveness as well as reputation and customer satisfaction<sup>26</sup>. However, traditional approaches to performance measurement are often based on arbitrary criteria, sometimes they are incoherent in understanding the competitive advantage<sup>27</sup>. They also make unclear assumptions about stability, and ignore the multidimensional nature of organizational performance<sup>28</sup>.

It is important to point out that subjective measures of performance have been found to be highly correlated with objective performance measures<sup>29</sup>. Hence, utilizing subjective measures may provide valuable insights on enterprise effectiveness<sup>30</sup>. There is clearly a need to rethink what is meant by the performance of the firm towards an appreciation of innovation and renewal implied by entrepreneurial capabilities, and how to measure it, so that it makes organizational entrepreneurship possible. If

<sup>25</sup> See e.g. S.A. Zahra, D.F. Jennings, D.F. Kuratko: *The Antecedents and Consequences of Firm Level Entrepreneurship: The State of the Field*. "Entrepreneurship Theory and Practice" 1999, 24, pp. 45-65.

<sup>26</sup> V. Martinez, M. Kennerly: *Performance Measurement Systems: Mix Effects*. In: *EURAM 2005. Responsible Management in an Uncertain World*. 5<sup>th</sup> Annual International Conference Proceedings. TUM Business School, Munich 2005.

<sup>27</sup> M.W. Meyer: *Can Performance Studies Create Actionable Knowledge If We Can't Measure the Performance of the Firm?* "Journal of Management Inquiry" 2005, 14, pp. 287-291.

<sup>28</sup> T. Devinney, G. Johnson, G. Yip, M. Hensmans, S. Prashantham, P. Richard: *Successful Strategic Transformers*. Paper presented at the strategic Management Society, Orlando 2005.

<sup>29</sup> D.D. Dess, R.B. Robinson: *Measuring Organizational Performance in the Absence of Objective Measures: The Case of the Privately Held Firm and Conglomerate Business Unit*. "Strategic Management Journal" 1984, 5, pp. 265-273; K.W. Glaister, P.J. Buckley: *Measures of Performance in the UK International Alliances*. "Organization Studies" 1998, 19, pp. 89-118.

<sup>30</sup> J.R. Evans: *An Exploratory Study of Performance Measurement Systems and Relationships with Performance Results*. "Journal of Operations Management" 2004, 22, pp. 219-232; E.M. Olson, S.F. Slater: *The Balanced Scorecard, Competitive Strategy, and Performance*. "Business Horizons" 2002, 45, pp. 11-16; A. Neely, M. Gregory, J. Mills, R. Platts: *Performance Measurement System Design: A Literature Review and Research Agenda*. "International Journal of Operations & Production Management" 1995, 15(4), pp. 80-116.

performance and entrepreneurship measures were strongly correlated – then all would contain essentially the same information and one of them would contain complete information about firm performance<sup>31</sup>. This idea would also meet the necessity of financial performance measurement going alongside with the non-financial one, since it can be different<sup>32</sup>.

Assuming the above stream of thinking, I decided to look closely at the entrepreneurship measurement tools as the reflection of organizational performance. The primary challenge of the research was to determine the relation between corporate entrepreneurship measured with different scales and performance of the organizations in transition economy, in order to propose the corporate entrepreneurship measurement tool that would reflect the firm's performance best. The argument that strong organizational entrepreneurship enhances organization's performance is the intuitively powerful idea and question yet to be answered with a wide array of theoretical interests and methodological tools. Concurrent implementation of numerous different approaches and flexible cognitive perspective are necessary for understanding complex organizational phenomena concerning organizational entrepreneurship-performance link.

Paying attention to organizational entrepreneurship outcomes details, a multidimensional effectiveness approach is needed, including non-financial and perceptual effectiveness indicators that corresponds with perspectives on organizations as complex webs of relationships among stakeholders or political arenas. The studies should show such a link and their results could be equally consistent with the hypothesis that organizational entrepreneurship traits determines performance. It would be vital information to develop these elements of organizational entrepreneurship that are most related to performance, in order to improve the standing of the Polish companies as well as to develop the regions.

All of the presented scales that measure corporate entrepreneurship were put into a theoretical model of relations between corporate entrepreneurship and performance (Figure 1).

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<sup>31</sup> M.W. Meyer: Op. cit.

<sup>32</sup> A. Neely, Ch. Adams, M. Kennerley: *The Performance Prism: The Scorecard for Measuring and Managing Business Success*. Financial Times-Prentice Hall, London 2002.

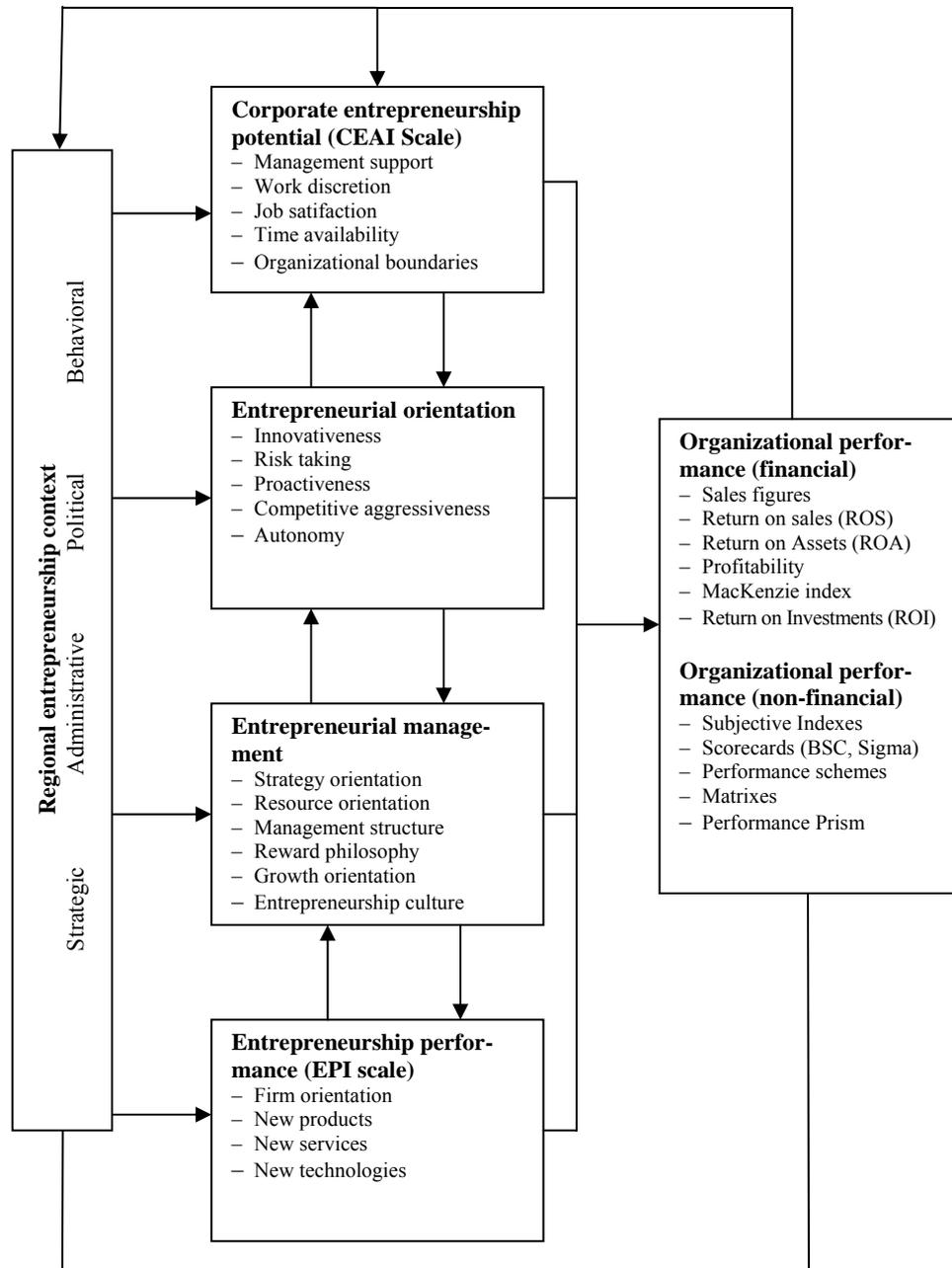


Figure 1. Theoretical model of relations between corporate entrepreneurship and performance

The model assumes, that the corporate entrepreneurship itself is a construct consisted of the four sub-constructs operationalized in literature: entrepreneurship potential (measured by the CEAI scale), entrepreneurial orientation (measured by the Covin and Slevin's 1989 scale) entrepreneurial management (measured by the Brown, Davidsson, and Wiklund's 2001 scale) and finally, as a result, there is entrepreneurship effectiveness (measured by the Entrepreneurial Performance Index scale). In the model, corporate entrepreneurship components are related with performance as the dependent variable<sup>33</sup>, which is measured either by financial or non-financial measures. For the purpose of the research, these measures were chosen, that reflect firm's performance to the highest extent<sup>34</sup>.

On the basis of the above considerations, I stated the following hypothesis:

*Hypothesis 2: Corporate entrepreneurship elements of the organizations are positively related to performance.*

### 3. The entrepreneurship level of organizations in Poland

I carried out a research trying to distinguish empirical components of corporate entrepreneurship in Poland, assess their level, and further on correlate them with performance.

The empirical research was carried out in the first half of 2006. I developed a questionnaire assessing the level of corporate entrepreneurship elements as well as of performance measured by financial and non-financial indicators. I conducted a survey among respondents from a wide variety of business companies operating in Poland. In sum, a total of 308 organizations were identified as meeting the research criteria. The questions in the tool were based on a seven-grade Likert scale. They were constructed in a way making it possible for respondents to evaluate the presence of a given entrepreneurship component from 1 (very low degree) to 7 (very high degree of agreement with the statement). The questions were categorized and addressed to medium-level and top management.

Factor analysis made it possible to reduce many of the statements describing entrepreneurship components. When interpreting variables describing these components only factors with loadings higher than 0.1 were taken into consideration. Factors were rotated with varimax. As a result of the factor analysis and on the basis of scree plot, nineteen elements of corporate entrepreneurship were distinguished with the

<sup>33</sup> J.G. March, R.I. Sutton: *Organizational Performance as a Dependent Variable*. "Organizational Science" 1997, 8, pp. 698-706.

<sup>34</sup> R.B. Carton, C.W. Hofer: *Measuring Organizational Performance Metrics for Entrepreneurship and Strategic Management*. Edward Elgar, Cheltenham-Northampton 2006.

eigenvalue higher than 1.0. The remaining factors obtained values lower than 1.0, therefore they were excluded.

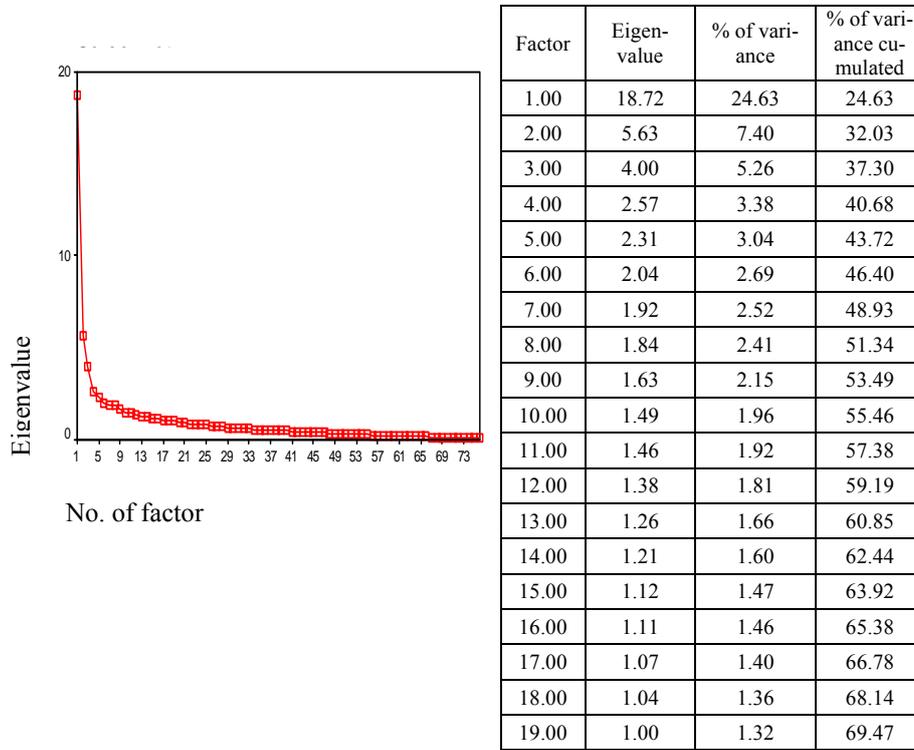


Figure 2. Scree plot of the factor analysis for empirical components of entrepreneurship

Theoretical model assumed that there are 21 elements of corporate entrepreneurship, factor analysis distinguished 19 factors that explain 69.5% of the total variance. The results of the factor analysis are presented in Table 1.

Table 1

Factor analysis for the corporate entrepreneurship components

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
<b>EPI1</b>			<b>0.67</b>																	
<b>EPI2</b>			<b>0.71</b>																	
<b>EPI3</b>					<b>0.66</b>															
<b>EPI4</b>										<b>0.41</b>										
<b>EPI5</b>	<b>0.66</b>																			
<b>EPI6</b>											<b>0.47</b>									





Table 2

## Empirical components of corporate entrepreneurship

Empirical component	Attributes
1. PROACTIVENESS	Predicting threats and changes Searching for new, unique solutions Active looking for opportunities Crossing the existing status quo Non-symptomatic, non-reactive activities
2. INNOVATIVENESS	Introducing new products Introducing new services Introducing new technologies High innovativeness and new ideas rate Orientation towards continuous modernization of production methods, service offers, and technology changes
3. INTRAPRENEURSHIP	Encouraging organization members to introduce new ideas and solutions, Supporting small developmental projects Supporting creativity and possibility of using employees' competences Workers autonomy Self management Inspiring people to act Financing new ideas
4. RISK TAKING	Taking risk for opportunity seeking Taking decisions that are not sure in results Engaging in high amounts of resources Taking confident, courageous decisions
5. PRESSURE ON EFFECTIVENESS	Indicating mistakes A big amount of work to do in a short period of time Clear defining goals Rewarding for value creation or share in profit making Avoiding unnecessary cost creation
6. FLEXIBILITY IN ACTING AND THINKING (IMPROVISATION)	Flexible adaptation to changing conditions with no looking back at the past management practices No resistance toward changes Ability of adapting to new situation
7. GROWTH ORIENTATION	Direction towards high growth Creating growth culture, informing workers that growth is the ultimate goal Being the biggest in the shortest period of time
8. FLEXIBLE RESOURCE ORIENTATION	Using resources not necessarily under control Flexible use of resources depending on number of promising ideas and availability of time and money to implement them Finding time to discuss emerging problems Discussing work effects and use of resources Compromises towards workers and competition Availability of resources for experimental projects
9. MANAGEMENT STRUCTURE	Control of funds Introducing formal procedures Pressure on unique management style Defined scope of goals, tasks, and duties Clearly defined expectations

Table 2 contd.

10. TIME AVAILABILITY AND ORGANIZING	Finding time to solve problems Finding time to develop new ideas Setting priorities
11. ENTREPRENEURIAL ORIENTATION AND CULTURE	Orienting strategy for innovativeness Orienting strategy for proactiveness Orienting strategy for risk-taking Orienting organization for competitive aggressiveness Orienting organization for autonomy and trend setting in the market
12. REWARD PHILOSOPHY	Rewarding employees for new ideas Rewarding for value creation Rewarding for effectiveness Rewarding for work inputs
13. OPPORTUNITY ORIENTATION	Importance of opportunity for firm's survival and growth Idea existence in opportunity seeking and taking up Taking up opportunities regardless resources under control

Some of the empirical factors are equivalent to the theoretical elements of corporate entrepreneurship such as proactiveness, innovativeness, risk-taking, growth orientation, or opportunity orientation. Labels given to these elements are known from the theoretical components. However, it is worth to look closely at the attributes describing these elements. Attributes listed in the table as first, are central features of each component.

The conducted analysis shows, that there is no basis to reject Hypothesis 1 stating that entrepreneurship in the researched organizations is a multi-component construct, partly covering theoretical elements. As the factor analysis showed, there are thirteen elements of corporate entrepreneurship with eigenvalues higher than 1.0. Some elements are equivalent to those in theoretical operationalizations and some are new (pressure on effectiveness, management structure, time organization, flexibility, or improvisation). What is more, it seems that intrapreneurship is an important element of corporate entrepreneurship in Poland, as it is a third element with the value of 4, that explains more than 9% of the variance. It is also worth noticing, that flexibility or improvisation proved to be a significant empirical component of entrepreneurship as well, though its theoretical roots are well-described<sup>36</sup>.

It is worth to look at some differences in the level of corporate entrepreneurship within organizations from different sectors of activity (see Table 3).

According to the table, the highest level of corporate entrepreneurship is represented by companies dealing with finance (4.27), transportation and telecommunication (4.22) as well as building industry (4.19). On the other hand, the lowest level of entrepreneurship is present in coal mines (3.53), real estate companies (3.61), and corporations in the energy sector (3.89). The following components of corporate

<sup>36</sup> A.S. Miner, P. Bassoff, C. Moorman: *Organizational Improvisation and Learning: A Field Study*. "Administrative Science Quarterly" 2001, Vol. 46, pp. 304-337.

entrepreneurship were evaluated to the highest extent: opportunity orientation in the energy sector, management infrastructure, and growth orientation in hotels and restaurants. The highest pressure on effectiveness is present in the financial services and building industry, where reward philosophy, innovation, and proactiveness were highly evaluated as well. Financial sector represents a relatively high level of proactiveness and innovativeness whereas management structure does not go along there with entrepreneurship. The sector of transportation and telecommunication has the highest level of entrepreneurial orientation, risk taking. Reward philosophy was evaluated very low in the real estate business. Coal mining has the lowest level of innovativeness and proactiveness.

Table 3

## The level of corporate entrepreneurship components according to business sector

Empirical component	Sector (Number of companies)									
	Production (110)	Trade (61)	Finance (27)	Services (23)	Transportation (19)	Building industry (16)	Energy supply (13)	Real estate (10)	Coal mining (8)	Hotels and restaurants (5)
Proactiveness	3.55	3.75	4.63	3.42	4.47	3.70	3.63	3.30	2.66	3.70
Innovativeness	3.79	3.77	4.82	3.23	4.25	3.72	3.14	2.94	2.89	3.40
Intrapreneurship	4.16	3.93	3.87	3.92	4.20	4.19	3.59	3.90	3.38	3.95
Risk taking	4.09	3.97	4.25	4.03	4.41	4.09	3.79	3.45	3.31	3.70
Pressure on effectiveness	4.13	4.09	4.36	4.17	4.13	4.33	4.05	3.67	3.94	3.90
Flexibility	4.53	4.25	4.54	4.67	4.61	4.72	4.12	4.25	3.50	4.70
Growth orientation	4.67	4.60	4.84	4.87	4.67	4.73	4.74	4.30	4.92	5.07
Resource orientation	4.06	4.01	4.19	3.95	4.27	4.38	3.71	3.34	3.35	4.00
Management structure	3.75	3.92	3.24	3.97	3.15	3.96	3.15	3.38	3.15	5.04
Time availability and organization	3.83	3.87	4.07	3.83	3.99	3.86	3.63	3.40	3.53	3.44
Entrepreneurial orientation	4.50	4.30	4.79	4.17	4.95	4.41	4.14	3.89	3.24	4.08
Reward philosophy	4.16	4.22	4.22	3.92	4.32	4.56	3.69	3.16	3.61	3.63
Opportunity orientation	4.02	3.95	3.70	4.17	3.42	3.75	5.23	4.00	4.50	3.80
<b>Entrepreneurship</b>	<b>4.10</b>	<b>4.05</b>	<b>4.27</b>	<b>4.03</b>	<b>4.22</b>	<b>4.19</b>	<b>3.89</b>	<b>3.61</b>	<b>3.53</b>	<b>4.03</b>

The sample was also controlled for firm's age and size, but there were no significant differences in the level of entrepreneurship in organizations of different ages and sizes.

#### 4. The relation between empirical components of corporate entrepreneurship and performance

In order to test the relations between the empirical components of entrepreneurship in the researched organizations and performance, I carried out correlation analysis. The research compared different scales of corporate entrepreneurship and correlated them with "hard" performance measures, giving some implications as to what elements of corporate entrepreneurship are worth focusing on. On the basis of the research I attempted to propose an integrated tool taking into consideration these dimensions of corporate entrepreneurship that are correlated with performance to the highest degree. The results of the correlation analysis are presented in Table 4.

Table 4

Correlations between corporate entrepreneurship components and performance

	Net revenues	Net profit	Net sales	Sales revenues	ROI	ROA	Market value to book value ratio	McKenzie Index	Employment Turnover	New product introduction ratio
Proactiveness	0,61	0,10	0,75	0,51	0,00	0,37	0,17	0,90	-0,01	0,30
Innovativeness	0,11	0,11	0,17	0,16	0,01	0,11	0,05	0,41	-0,02	0,41
Intrapreneurship	0,44	0,05	0,12	0,11	0,02	0,19	-0,02	0,23	-0,03	0,12
Risk taking	0,07	0,09	0,10	0,09	-0,02	0,53	-0,04	0,32	0,12	0,20
Pressure on effectiveness	-0,06	0,04	0,09	0,08	0,01	0,06	0,09	0,64	0,02	0,10
Flexibility	0,32	0,64	0,53	0,62	-0,03	0,49	0,02	0,43	0,01	0,18
Growth	0,00	0,05	0,00	-0,01	-0,06	0,06	0,02	0,22	0,04	0,19
Resource orientation	0,21	0,11	0,83	0,71	0,28	0,68	0,12	0,42	0,90	0,17
Management Structure	-0,17	0,04	-0,07	-0,06	0,01	-0,5	-0,06	0,22	0,04	0,06

Table 4 contd.

Time	0,06	-0,01	0,13	0,13	0,00	-0,5	-0,02	0,12	-0,05	0,10
Entrepreneurial orientation	0,21	0,91	0,11	0,10	0,01	0,63	0,63	0,42	0,01	0,35
Reward philosophy	-0,02	0,08	0,05	0,04	0,00	-0,01	0,00	0,81	0,02	0,13
Opportunity orientation	-0,10	0,02	-0,04	-0,03	-0,06	0,03	-0,01	0,00	-0,10	-0,03

The analysis results indicate that proactiveness, flexibility, resource orientation, and strategy orientation as well as innovativeness are correlated to the highest degree with financial performance of the firm which suggests that being ahead of threats, predicting changes, and looking for opportunities have the highest translation to firm's financial results in transition economy. On the other hand, low or negative correlations were observed regarding risk taking, pressure on effectiveness, growth orientation, and reward philosophy. Reverse relation with risk seems to be justified and is connected with the fact, that taking risky actions, entering new activities, engaging in many resources are decisions that require high spendings in a short period of time. It also seems, that the top-down pressure on effectiveness proves ineffective. It can be connected with the fact, that employees when forced to accomplish certain tasks, will only realize those goals, which they will be rewarded for, not the overall strategy goals. As a result, organization loses its entrepreneurial orientation.

It is interesting to see, that reward philosophy tends to have low correlations with performance. It seems that rewarding for ideas only is too early decision to take. Instead, employees could rather be rewarded for value creation or profit realization<sup>37</sup>. Research results also suggest, that formal and stiff structure of management is negatively correlated with performance. As far as the non-financial measures are concerned, proactiveness, intrapreneurship, and effectiveness pressure are correlated to the highest degree with them. Reward philosophy reflected low correlations. It would be vital to compare other non-financial measures of performance. However, most of the researched organizations did not wish to reveal the data necessary to calculate or present them.

In most of the researched companies there is a negative employment dynamics. About 80% of the researched companies declared decrease in employment in the subsequent years 2003, 2004, and 2005. This dynamics – contrary to popular judgments

<sup>37</sup> M. Brown, M. Sturman, M. Simmering: *Compensation Policy and Organizational Performance: The Efficiency, Operational and Financial Implications to Pay Levels and Pay Structure*. "Academy of Management Journal" 2003, 46.

– is not related with organizational effectiveness. Perhaps it results in short term cost savings – but this is an issue that would require longitudinal studies to be carried out.

In order to additionally research the relation between corporate entrepreneurship and performance, descriptive statistics were used. Their results are presented in Table 5. As a performance index, the return on assets (ROA) was used in three ranges: below 0, 0 to 0.2, and above 0.2.

Table 5

**Corporate entrepreneurship components in organizations with different performance**

<b>Organizations with low performance (ROA &lt; 0), N = 20</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std dev.</b>
Proactiveness	1,75	4,75	2,89	0,83
Innovativeness	1,67	4,67	3,01	0,77
Intrapreneurship	2,18	5,73	3,80	0,94
Risk taking	1,75	5,25	3,35	1,01
Pressure on effectiveness	3,00	5,00	3,93	0,58
Flexibility	2,00	5,50	4,20	1,07
Growth	3,67	5,67	4,40	0,56
Resource orientation	2,56	5,67	3,70	0,91
Management structure	2,20	4,80	3,62	0,77
Time	2,80	5,20	3,89	0,69
Entrepreneurial orientation	2,90	5,50	3,87	0,72
Reward philosophy	1,57	5,71	3,68	0,93
Opportunity orientation	1,00	7,00	4,55	1,67
Entrepreneurship			3,76	
<b>Organizations with average performance (0 &lt; ROA &lt; 0,2) N = 211</b>				
Proactiveness	1,25	6,75	3,78	1,26
Innovativeness	1,00	6,67	3,85	1,23
Intrapreneurship	1,27	6,55	4,11	1,21
Risk taking	1,75	6,50	4,10	1,08
Pressure on effectiveness	1,67	6,17	4,10	0,83
Flexibility	1,00	7,00	4,52	1,35
Growth	2,00	7,00	4,68	0,87
Resource orientation	2,00	6,33	4,06	0,89
Management structure	1,00	6,60	3,72	1,18
Time	1,80	5,60	3,82	0,71
Entrepreneurial orientation	2,30	6,40	4,45	0,90
Reward philosophy	1,43	7,00	4,20	1,20

Opportunity orientation	1,00	7,00	3,89	1,61
Entrepreneurship			4,10	

Table 5 contd.

<b>Organizations with high performance (ROA &gt; 0,2), N = 77</b>				
Proactiveness	1,00	6,29	3,94	1,11
Innovativeness	1,00	6,75	4,83	1,33
Intrapreneurship	1,00	6,89	4,21	1,39
Risk taking	1,45	6,45	3,82	1,23
Pressure on effectiveness	1,75	6,50	4,05	1,16
Flexibility	2,33	6,50	4,23	0,91
Growth	1,00	7,00	4,55	1,16
Resource orientation	2,00	6,67	4,78	0,83
Management structure	2,00	5,78	3,98	0,83
Time	1,00	6,80	3,66	1,33
Entrepreneurial orientation	2,20	6,20	3,84	0,79
Reward philosophy	2,60	6,20	4,57	0,82
Opportunity orientation	1,00	7,00	4,03	1,67
Entrepreneurship			4,19	

From the Table 5 it seems clear, that the higher level of performance measured only with ROA, the higher level of corporate entrepreneurship. It is a vital suggestion for designing entrepreneurship-based performance measurement system. If one could measure the level of empirical components of corporate entrepreneurship, they might give some implications as to firm's performance.

In 20 organizations with ROA below zero, the level of entrepreneurship takes the value of 3.76 with growth, flexibility, and opportunities assessed to the highest degree, and innovativeness and proactiveness assessed low. In majority, 211 organizations with average performance the level of entrepreneurship is higher – 4.10. Flexibility, growth, and entrepreneurial orientation were assessed here very high, whereas proactiveness, innovativeness, and management structure as well as time availability were assessed low. Finally, in 77 organizations with ROA above 0.2 entrepreneurship strikes the relatively highest value of 4.19.

The above analyses give no reasons to reject the hypothesis 2 stating, that corporate entrepreneurship elements are correlated with performance. It is however worth noticing, that the presented analyses indicated many differences in different correlations. Performance measured with various measures was correlated differently with certain components of corporate entrepreneurship.

## 5. Entrepreneurship-based performance measurement system

Summarizing the above considerations, one can say, that it is possible to design a performance measurement system based on the entrepreneurship measures, since they are correlated with financial and some non-financial measures of the firm's financial success. Such a system could give some hints as to constructing measures of entrepreneurship that show high relations with performance. Developing these elements of entrepreneurship in companies of Poland could eventually lead to their better financial standing and improve the state of the whole industrial district.

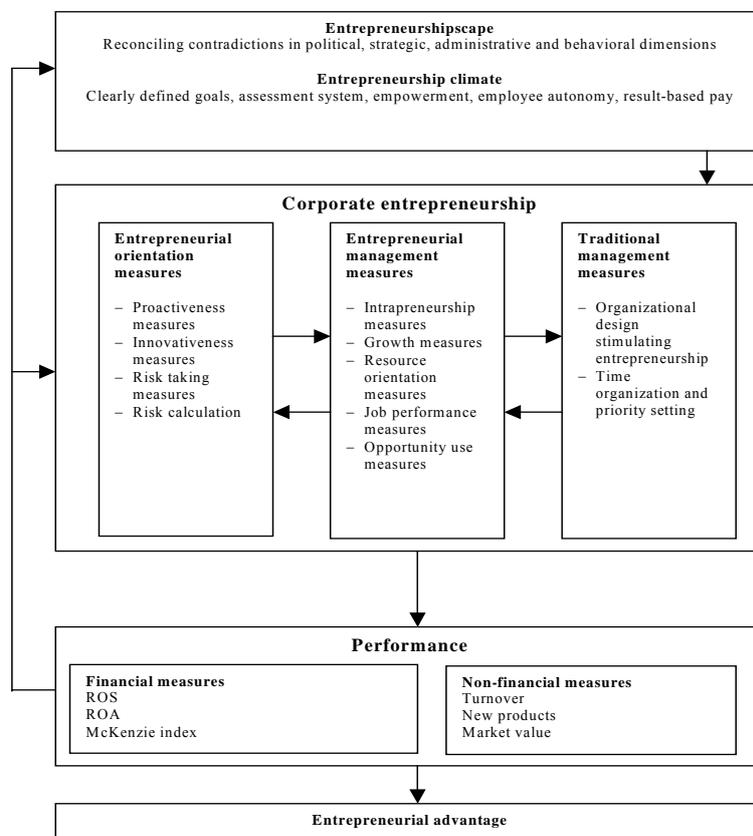


Figure 3. Entrepreneurship-based performance measurement system design

The starting point in the presented model (Figure 3) is the existence of opportunities whose recognition and exploitation is equal to entrepreneurial activity in the organization. If there is a specific climate for stimulating entrepreneurship by clearly

defined goals, support, and empowerment and autonomy creation, result-based pay system, it influences entrepreneurship stimulation. Its process is centered around three groups of factors: (a) proper entrepreneurial orientation of the firm, (b) entrepreneurial management focused on flexible resource orientation, reward philosophy as well as growth orientation and opportunity orientation, (c) management elements that can stimulate entrepreneurship.

The entrepreneurship process translates into organizational performance, specifically measured with the known financial measures, e.g. ROA, ROS, but also non-financial measures.

## 6. Discussion, contributions, and implications for the future research

In this paper I have presented a basis for describing the relations between corporate entrepreneurship and performance. The operationalization of organizational entrepreneurship understood as entrepreneurial management and entrepreneurial orientation proved workable in the Polish conditions, and the empirical dimensions of entrepreneurship fit well in their theoretical ones, as developed by Brown, Davidsson, and Wiklund<sup>38</sup> as well as Lumpkin and Dess<sup>39</sup>.

The primary challenge of this research was to determine the relation between organizational entrepreneurship measured with different tools, and performance of the firms. The research has proved, that there is a relatively strong relation between entrepreneurship measured with different tools and performance.

How can the results of the above research be translated into successful companies? Hence, the mindset is pointed out as an important area for organizational entrepreneurship development. When entrepreneurial mindset is manifested as a collective phenomenon that is shared by members of organization, it is equivalent to organizational culture. According to recent arguments, organizational culture is “[...] pattern of shared assumptions, shared frame of reference or shared values and norms”<sup>40</sup> treated as “[...] right way of thinking and acting in relation to problems and opportunities”<sup>41</sup>. Thus, entrepreneurship may be framed around individuals and enterprises. More specifically, individuals acting at all levels of the organizations – both SMEs and large companies – are the ultimate source of organizational en-

<sup>38</sup> T.E. Brown, P. Davidsson, J. Wiklund: Op. cit.

<sup>39</sup> G.T. Lumpkin, G.G. Dess: *Clarifying...*, op. cit.

<sup>40</sup> E.M. Eisenberg, P. Riley: *Organizational Culture*. In: *The New Handbook of Organizational Communication. Advances in Theory Research and Methods*. Eds. F.M. Jablin, L.L. Putman. Sage Publications, Thousand Oaks 2001, p. 305.

<sup>41</sup> S. McShane, M.A. Von Glinow: *Organizational Behavior. Emerging Realities for Workplace Revolution*. Irwin-McGraw-Hill, New York 2000, p. 498.

trepreneurship. The crux is to make sense of strategic situations and events in order to engage people in economical, social, cultural, political, strategic, organizational changes and finally to form future.

In summary, the findings from this study, together with other recent evidence, show that certain organizational entrepreneurship components play a central role in the enhancement of organizational performance. Risk-taking for example, showed to be reversibly influencing financial performance<sup>42</sup>, while improvisation seems to be the inevitable element of entrepreneurial high-performing organizations<sup>43</sup>.

This study contributes to several streams of research. First, it adds to the entrepreneurship literature by demonstrating a relationship between the components of entrepreneurship and performance. Second, an empirical model is built showing what influences performance in entrepreneurial and fast-growing organizations. The practical implication of this research is the suggestion to include certain common dimensions enhancing entrepreneurial activity when designing the performance measurement and management systems<sup>44</sup>.

This study has several potential limitations. The first concerns the understanding of entrepreneurship. I have chosen the idea presented by Stevenson and Jarillo where entrepreneurship is an opportunity-based concept and concerns the mode of management<sup>45</sup>. Then I moved on to the idea of entrepreneurial orientation<sup>46</sup>, and then followed with the measures of Corporate Entrepreneurship Activity Index, and Entrepreneurial Performance Index. If equipped with the corporate entrepreneurship scale<sup>47</sup>, it is highly likely that the results might have been different. However, this might be treated as my proposition for future research: it would be worth to compare the other scales and to take them into consideration when re researching the analyse entrepreneurship performance relations. Second, my theoretical perspective implies that entrepreneurship precedes performance. However, it is possible that the relationship between entrepreneurship and performance is reciprocal or that it could be the reverse in other settings. For example, it is possible that high-performance of a given company enhances its entrepreneurial way of management. Third, the study might be a culture-bound. Similar research carried out in another transition-economy sample, e.g. Latvian, Czech, or Estonian, could reveal different results. Therefore one should be aware of the possible cultural effects that might change the general relations discovered in this study. Fourth, the sample used in this research is quite vast and covers all type

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<sup>42</sup> Compare G.T. Lumpkin, W.J. Wales, M. Ensley: *Entrepreneurial Orientation Effect on New Venture Performance: The Moderating Role of Venture Age*. Best Paper Proceedings, Academy of Management, Atlanta 2006.

<sup>43</sup> A.S. Miner, P. Basoff, C. Moorman: Op. cit.

<sup>44</sup> A. Neely: *Multiple Perspective of Performance Measurment and Management System*. Academy of Management, Atlanta 2006.

<sup>45</sup> H.H. Stevenson, J.C. Jarillo: Op. cit.

<sup>46</sup> G.T. Lumpkin, G.G. Dess: *Clarifying...*, op. cit.

<sup>47</sup> B. Antoncic, R.D. Hisrich: *Privatization Corporate Entrepreneurship and Performance: Testing a Normative Model*. "Journal of Development Entrepreneurship" 2003, 8, pp. 197-218.

of businesses. It would be vital to research specifically just small business companies and see whether the scales applied there would prove workable.

## Conclusion

The findings from this study, together with other recent evidence, show that organizational entrepreneurship plays a central role in the enhancement of organization's performance. The evidence partially supports the argument that organizational entrepreneurship can be used to promote or to undermine the performance and wealth. In many respects the research on entrepreneurship as well as firm's effectiveness is still in its early stages. I believe that the further development of applicable theory will broaden the knowledge about relations presented in the paper, and that will make possible verify other relations. This statement can be treated as a suggestion for future scientific research oriented towards discovering the potential of mutually related set of ideas concerning organizational entrepreneurship and organization's performance.

Equipped with the integrated tool, it could be worth to carry out this research on a larger and more diversified sample in order to give practitioners more specified answer to the question: which elements or areas of entrepreneurship should be developed in what kind of organizations in order to increase performance? The future research should furthermore specify the implications for constructing the optimal performance measurement system based on entrepreneurship elements.

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