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# IMPORTANT FACTORS OF SMES ENTREPRENEURIAL ORIENTATION

Effective implementation of EO attributes represents an important factor of SMEs' success on the target market, and significantly determines its long-term existence. The aim of this paper was to define and quantify the significance of EO factors influencing SMEs business orientation. In connection to the defined target, separate research was conducted using a questionnaire in the Czech Republic attended by 1,141 enterprise owners within the SME segment. The method of regression analysis was used to quantify the significance of respective factors and to determine their statistical significance.

The results of the research indicate that SMEs' entrepreneurial orientation is mostly affected by the following factors: Investing finances into development of new methods and technologies  $(EO_{13})$ , Conducting risky projects for the purpose of increasing the enterprise's performance  $(EO_{23})$ , Initiative on the target market  $(EO_{32})$ , and Activities performed towards competition  $(EO_{43})$ . Subsequently, it was determined that factors such as Enterprise's risk strategy  $(EO_{21})$ , Creating an entrepreneurial environment within the scope of the enterprise  $(EO_{33})$ , Aggressive activities towards competition  $(EO_{42})$ , and Reputation for being an autonomous enterprise  $(EO_{51})$  do not affect the overall degree of entrepreneurial orientation.

The results of this research may serve as an inspiration for further research in the field of SMEs entrepreneurial orientation.

JEL: L26; O16; G21

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## Introduction

Small and medium-sized enterprises (SMEs) play an increasingly important role in many economies in the world (Ključnikov et al., 2016; Potkány et al., 2016; Smékalová et al., 2014; Karpak and Topcu, 2010; Henderson and Weiler, 2010, and other authors). This sector is especially significant in Europe (Czarniewski, 2016). According to the European Commission (2011), small and medium-sized enterprises (SMEs) are a "source of lifeblood" of the European economy.

There is a similar situation in the Czech Republic where SMEs produce more than 50% of the total added value volume and contribute to the overall employment rate in the economic system by more than 59%. The issue of SMEs financial health is a key in an effort to achieve sustainable development on both national and multinational level. Research targeting the detection of SMEs financial health sources indicates that the SMEs entrepreneurial orientation is one of the most significant factors (Kliestik et al., 2015a; Svabova and Durica, 2016).

This paper examines entrepreneurial orientation (EO) and the impact of the defined entrepreneurial orientation factors on SMEs business. The uniqueness of this research lies in defining significant EO factors and quantifying their impact on the overall EO.

The structure of the paper is as follows: The theoretical part presents the opinions of distinguished professionals in this field. The next part describes the aim of the research, methodology, and data used, followed by the results of the research and a discussion. The conclusion presents basic findings of the scientific research, its limitations and further direction.

#### 1. Theoretical aspects of EO in the SME segment

Based on the definition by Jelenc et al. (2015), EO is a tradition evaluating enterprises' inclination towards entrepreneurship attitudes. There are various methods of measuring EO, most researches, however, apply two: The first method is based on the initial definition of EO by Miller (1983) who describes EO using three constructs – proactivity, innovativeness, and risk-taking. The second method by authors Lumpkin and Dess (1996) takes into consideration five constructs by adding independence and competitive aggressiveness to the initial EO set. Lumpkin and Dess (1996) defined EO as follows: "EO applies to processes, practice, and decisions leading to new inputs, as described by one or more of the following characteristics: "the ability to act independently, willingness to innovate and take risk, and tendency to be aggressive in relation to competitive and proactive in relation to new market opportunities." EO is therefore viewed as a five-dimensional construct consisting of innovativeness, risk-taking, proactivity, autonomy, and competitive aggressiveness. EO was also defined by other authors (e.g. Covin and Slevin, 1988; Pearce et al., 2010).

According to Lumpkin and Dess (1996), innovativeness reflects enterprises' tendency to join and support new ideas, novelties, experiments and creative processes that may result in new products, services, or technological processes. In a broader sense, innovativeness can

be viewed as anything from simple willingness to try a new product line or experiment with a new ad placement to ardent determination to master newest product trends or technological progress.

Enterprises described as having an EO are often characterized by risky behavior such as falling into debt in order to make a high profit whenever convenient market opportunities arise (Lumpkin and Dess, 1996). Entrepreneurial risk has a complex form because it comprises several other risks that are interconnected. According to Caliendo et al. (2014), the probability of becoming and being an entrepreneur increases with a growing risk tolerance. Successful people are prepared to take on a reasonable amount of risk if associated with a certain level of achieved results (Kvietok, 2013).

Proactivity measures the enterprises' tendency to search for opportunities that enable entering the market with new products and services (Rauch et al., 2009).

Competitive aggressiveness describes an enterprise's ability to directly and intensively challenge competitors to grow or improve their position on the market, meaning getting ahead of their rivals. This feature of the EO is characterized by perceptiveness that can be viewed as a direct confrontation, e.g. when an enterprise enters the market identified by a competitor, or as a form of a reaction, e.g. when an enterprise lowers the prices in reply to a competitor's challenge. Competitive aggressiveness also reflects the willingness to be unconventional rather than rely on traditional competitor methods (Lumpkin and Dess, 1996).

Autonomy refers to independent actions of an individual or a team bringing an idea or a vision and carrying it into effect. Generally, it is the ability and willingness to be self-governed in search for opportunities. In an organization, autonomy refers to actions lifting the atmosphere of organizational hurdles. Independence in organizations varies based on the enterprise's size, leadership style, or form of ownership, e.g. in an organization where the owner/manager is the decision-maker, independence stems from ownership rights (Lumpkin and Dess, 1996).

The defined EO constructs increase the probability of becoming an entrepreneur and decrease the probability of becoming an employee (Knőrr et al., 2013; Almeida et al., 2014).

EO represents a key factor for the success of SMEs (Brockman et al., 2012; Boso et al., 2013). To act entrepreneurially is to take part in strategic activities – innovation, proactivity, risk-taking – and to perform these activities systematically (Anderson and Eshima, 2013). EO should guide towards the market by developing new products, product innovation, creating new consumer buying behavior, and creating competitive advantage on the market (Rahman et al., 2016).

EO is analyzed by many authors from different perspectives. Most often, authors examine how enterprises' EO affects their performance and future growth.

Entrepreneurial orientation (EO) is considered a significant feature of high performance (Kraus, 2013; Lim and Envick, 2013; Keh et al., 2007). Gudmundson and Lechner (2014) present an accurate description of the relationship between EO and performance. According

to the authors, EO has a positive effect on the company performance with both cost leadership and differentiation strategies. Their results show that innovativeness and autonomy have a positive relationship with product differentiation strategy whereas risktaking and competitive aggressiveness have a negative relationship with innovativeness, but no significant relationship with proactivity was found.

Business related risk-taking which is a substantial part of the entrepreneurial orientation (Rauch et al., 2009; Wales et al. 2013; Man et al., 2015) can be defined as a practice or tendency of taking actions that can be potentially harmful for the enterprise, and may result in a financial loss, but might at the same time provide an opportunity for a rewarding outcome. risk-taking mentality usually interconnected with innovative approach in company's management helps to engage the creative process in the company, and according to Wang and Yen (2012), is positively related to enterprise's performance. Kraus (2013) also argues that risk-taking and innovativeness are significantly related to enterprise's performance. As small businesses are more vulnerable to changes in the market structure, increase in competition, and changes in customer product preferences, it is difficult for them to survive if they lack the EO attributes (Gudmundson and Lechner, 2014). Entrepreneurs with high risk tolerance, innovativeness and willingness to use new technologies are more successful in generating profit for the enterprise (Blackburn et al., 2013; Laforet, 2013). Research conducted in this field until now indicates that another important aspect of increasing performance in the context of properly determined EO is eliminating entrepreneurial risk-taking (Kliestik et al., 2015b).

Most of the authors agree that entrepreneurial orientation can positively affect the enterprise's growth. E.g. Soininen et al. (2012) state that companies with higher EO can have a smoother growth than firms with lower EO, due to balancing the nature of risk-taking and more innovativeness and pro-activeness. It is interesting that among younger SMEs, those with a higher level of EO and intangible resources have a higher growth rate than the SMEs with limited EO (Anderson and Eshima, 2013).

EO is considerably affected by the entrepreneur's personality (Kozubíková et al., 2015b; Deáková et al., 2010; Kvietok, 2013).

According to Beugelsdijk and Noorderhaven (2005), entrepreneurs are more individualistic than the rest of the population, and individual responsibility and effort are traits distinguishing them from the others. The summary of opinions by other authors (Obschonka et al., 2014; Zhao and Seibert, 2006; Caliendo et al., 2014) yields the following set of the most important entrepreneurial personality traits: passion, flexibility, strong self-confidence, resilience, vision, courage/willingness to take risk, positive attitude, integrity, trustworthiness, self-sacrifice, creativity, leadership skills, perseverance, independence.

### 2. Research aim, methodology, and data

The aim of this paper is to define and quantify the significance of EO factors influencing SMEs business orientation.

Individual EO constructs were selected according to Lumpkin and Dess (1996): innovativeness, risk-taking, proactivity, competition aggressiveness, and autonomy. Three characteristic factors were created for each construct.

Table1

|                                      | •   |  |  |
|--------------------------------------|---|--|--|
| Construct                            | Factors (independent variables)   |  |  |
| Innovativeness<br>(EO <sub>1</sub> ) | Reputation for being an innovator (EO <sub>11</sub> )                                       |  |  |
|                                      | Enterprise's new product and services development (EO <sub>12</sub> )                       |  |  |
|                                      | Investing finances into development of new methods and technologies (EO <sub>13</sub> )     |  |  |
| Risk Taking<br>(EO <sub>2</sub> )    | Enterprise's risk strategy (EO <sub>21</sub> )  |  |  |
|                                      | Investing in risky projects (EO <sub>22</sub> )   |  |  |
|                                      | Conducting risky projects for the purpose of increasing the enterprise's                    |  |  |
|                                      | performance $(EO_{23})$   |  |  |
| Proactivity<br>(EO <sub>3</sub> )    | Change forecast for the target market $(EO_{31})$   |  |  |
|                                      | Initiative on the target market $(EO_{32})$   |  |  |
|                                      | Creating entrepreneurial environment within the scope of the enterprise (EO <sub>33</sub> ) |  |  |
| Competitive                          | Reputation for being an aggressive enterprise $(EO_{41})$                                   |  |  |
| aggressiveness                       | Aggressive activities towards competition (EO <sub>42</sub> )                               |  |  |
| $(EO_4)$                             | Activities performed towards competition (EO <sub>43</sub> )                                |  |  |
| Autonomy<br>(EO <sub>5</sub> )       | Reputation for being an autonomous enterprise (EO <sub>51</sub> )                           |  |  |
|                                      | Personnel being autonomous in enterprise's operations (EO <sub>52</sub> )                   |  |  |
|                                      | Support of employees' initiative in search and execution of entrepreneurial                 |  |  |
|                                      | opportunities $(EO_{53})$ .   |  |  |

Constructs and factors of SMEs' entrepreneurial orientation

# In this research, following five hypotheses through estimation methods have been set:

H1: All factors of the innovativeness construct  $(EO_{11}, EO_{12} \text{ and } EO_{13})$  are statistically significant and positively affect an enterprise's entrepreneurial orientation (EO).

H2: All factors of the risk-taking construct (EO<sub>21</sub>, EO<sub>22</sub> and EO<sub>23</sub>) are statistically significant and positively affect an enterprise's entrepreneurial orientation (EO).

H3: All factors of the proactivity construct  $(EO_{31}, EO_{32} \text{ and } EO_{33})$  are statistically significant and positively affect an enterprise's entrepreneurial orientation (EO).

H4: All factors of the competitive aggressiveness construct ( $EO_{41}$ ,  $EO_{42}$  and  $EO_{43}$ ) are statistically significant and positively affect an enterprise's entrepreneurial orientation (EO).

H5: All factors of the autonomy construct ( $EO_{51}$ ,  $EO_{52}$  and  $EO_{53}$ ) are statistically significant and positively affect an enterprise's entrepreneurial orientation (EO).

Statistical data collection in enterprises in 2015 was based on the following steps: using the method of random selection, 1600 enterprises were selected from the basic set of

enterprises active in the Czech Republic obtained from the "Albertína" database. The selected enterprises were approached by email and asked to fill out an online questionnaire. The questionnaire was completed by the enterprise's owner or a top manager. Entrepreneurs' notions were recorded using qualitative statements accompanied by quantitative evaluation (so-called Likert scale) as follows: fully agree (2), agree (1), indifferent (0), disagree (-1), fully disagree (-2).

This process yielded statistical data from 495 enterprises, what represents a 31% success rate. Enterprises that did not respond to email were subsequently approached by phone by college students who acted as research agents. An incomplete statistic data collection yielded a set of statistical data from 1141 enterprises (70% success rate). To achieve the paper's goal, 5467 out of the total set of 60 476 statistical data were used from a selected group of enterprises.

Regression analysis was used to achieve the main goal. The aim of the linear regression model was to explain and quantify the relation between EO (dependent variable) and given factors EO ( $EO_{11}$  to  $EO_{53}$ ).

The linearity assumption was verified using a graphic data analysis in form of point charts (scatter plots). Subsequently, verification of the assumption of normal data distribution with the testing of the descriptive characteristics of the independent variables (z-test of skewness and kurtosis) was performed. The critical value for accepting independent variables in the regression model is 1.96 (significance level of 0.05). The assumption of constant dispersion of random errors and thus of residues (homoscedasticity) was tested using the Bartlett test. The assumption of homoscedasticity was confirmed if the p-value was larger than 0.05. The values of linear regression model parameters with more independent variables can be negatively affected by multicollinearity. The results of the regression models were accepted if the value of the Inflation factor was higher than 5 (Hair et al., 2010). The graphical verification of assumptions, as well as testing was performed using the IBM SPSS Statistika software for statistical data analysis.

The general form of the regression equation with multiple linear function is based on the following relationship between dependent variable (EO) and factors  $(EO_{11,...,}EO_{53})$ :

$$EO = \beta_0 + \beta_1 \times EO_{11} + \beta_2 \times EO_{12} + \beta_3 \times EO_{13} + \dots + \beta_i \times EO_{ij} + \varepsilon$$
(1)

where EO – dependent variable;  $\beta_0$  – constant,  $\beta_1$ ;  $\beta_2$ ,  $\beta_3$  – parameters of independent variables; *i* – factor (i = 1, 2, ..., n); *j* – determinant of i factor (j = 1, 2, m);  $\varepsilon$  – random regression model component.

Since the aim is not to predict an entrepreneur's future business orientation, the constant has no significance for the regression model; however, it will be present in the regression models for the sake of complexity.

The random component ( $\epsilon$ ) in the above regression model must meet the characteristics of white noise (medium value of a random component is 0, variance  $\epsilon$  is constant, linear independence between the components  $\epsilon$  and random variables are administered by probability pattern of normal distribution).

The suitability of the regression model with the regression function will be verified by the coefficient of determination. Given the large number of data (1141 enterprises), it was assumed that there will not be large differences between the value of the coefficient of determination (R2) and the adjusted coefficient of determination R\_Adj^2, which states what percentage of the total variability of the dependent variable is explained by the selected regression model.

The reliability of the regression model was determined using the mathematical "Analysis of variance" method which was verified by F-ratio and determination of its p-value. To meet the statistical significance of the regression model, p-value of the entire model must be lower than the significance level. The significance level for all completed tests was set at 0.05. If the regression model function consists of three or more independent variables, then the given regression model can be negatively affected by multicollinearity. The mutual dependence of independent variables is determined by Variation Inflation Factor (VIF). If the value of VIF is larger than 5, then multicollinearity depreciates the estimated regression model parameters.

The interpretation of the achieved regression parameter results is the following:

- If the estimated parameter of an independent variable is statistically insignificant, it can be argued, regardless of the estimated parameter's value, that the independent variable has no effect on the entrepreneurial orientation.
- If the estimated parameter of an independent variable is statistically significant and positive at the same time, the independent variable positively affects the entrepreneurial orientation necessary in the business environment,
- If the estimated parameter of an independent variable is statistically significant and negative at the same time, the independent variable negatively affects the entrepreneurial orientation necessary in the business environment.

Descriptive characteristics of enterprises based on socio-demographic features: by enterprise's location (county) – Zlínský kraj (28,3%), Moravskoslezský kraj (24,2%), Olomoucký kraj (11,7%), Jihomoravský kraj (10,2%), Liberecký kraj and Praha (5,1%), Pardubický kraj (4,8%), Plzeňský kraj (2,7%), Středočeský kraj (2,1%), Královehradecký kraj (2,0%), Vysočina (1,6%), Jihočeský kraj (1,0%), Ústecký kraj (0,9%) a Karlovy Vary (0,3%), by enterprise size – 65% micro-enterprises (up to 10 employees), 27% small enterprises (up to 50 employees), 8% medium-sized enterprises (up to 250 employees), by gender – 75% men, 25% women.

# 3. Results

Table 2 lists the verification results of independent variables in regression models.

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#### Table 2

| Easter The assu           | mption of regression         | Verification    | The independent variables (Determina     |           |           |
|---------------------------|------------------------------|-----------------|--|-----------|-----------|
| Fucior                    | Analysis                     | tool            | $EO_{II}$                                | $EO_{12}$ | $EO_{13}$ |
| Linearity                 |                              | Scatter plot    | 0  | 0         | 0         |
| EO <sub>1</sub> Normal di | stribution of construct      | Z- test         | Х  | 0         | Х         |
| Homoscee                  | lasticity                    | Bartlett's test | 0  | 0         | 0         |
| Eactor The assu           | mption of regression         | Verification    | The independent variables (Determinants  |           |           |
| racior                    | Analysis                     | Tool            | $EO_{21}$                                | $EO_{22}$ | $EO_{23}$ |
| Linearity                 |                              | Scatter plot    | Х  | 0         | 0         |
| EO <sub>2</sub> Normal di | stribution of construct      | Z- test         | Х  | 0         | 0         |
| Homoscee                  | lasticity                    | Bartlett's test | Х  | 0         | 0         |
| Easter The assu           | mption of regression         | Verification    | The independent variables (Determinants) |           |           |
| Fucior                    | Analysis                     | Tool            | $EO_{31}$                                | $EO_{32}$ | $EO_{33}$ |
| Linearity                 |                              | Scatter plot    | 0  | 0         | 0         |
| EO <sub>3</sub> Normal di | stribution of factor         | Z- test         | 0  | 0         | 0         |
| Homoscee                  | lasticity                    | Bartlett's test | 0  | 0         | 0         |
| Easter The assu           | The assumption of regression |                 | The independent variables (Determinar    |           |           |
| Facior                    | Analysis                     | Tool            | $EO_{41}$                                | $EO_{42}$ | $EO_{43}$ |
| Linearity                 |                              | Scatter plot    | 0  | Х         | 0         |
| EO <sub>4</sub> Normal di | stribution of factor         | Z- test         | 0  | Х         | 0         |
| Homoscee                  | lasticity                    | Bartlett's test | 0  | 0         | 0         |
| Easter The assu           | The assumption of regression |                 | The independent variables (Determinants  |           |           |
| racior                    | Analysis                     | Tool            | $EO_{51}$                                | $EO_{52}$ | $EO_{53}$ |
| Linearity                 |                              | Scatter plot    | 0  | Ō         | 0         |
| EO <sub>5</sub> Normal di | stribution of factor         | Z- test         | Х  | 0         | 0         |
| Homoscee                  | lasticity                    | Bartlett's test | X  | Ō         | Ō         |

Verification of regression models' assumptions

Notes: X - assumption not confirmed; O - assumption confirmed. Source: own processing.

The results (Table 2) indicate that the linearity assumption was verified in all independent variables except independent variables  $EO_{21}$ ,  $EO_{42}$ . Testing criteria values confirmed the assumption of normal data distribution of independent variables except  $EO_{11}$ ,  $EO_{13}$ ,  $EO_{21}$ ,  $EO_{42}$ , and  $EO_{51}$  Given the size of the sample set (1,141 respondents), these variables can be included into the regression model (Hair, 2010). The assumption of homoscedasticity was not confirmed in  $EO_{21}$  and  $EO_{51}$ , as the critical area (p-value = 0.05) was larger than the testing criteria.

Table 3 lists the verification results of the estimated coefficient in multiple linear functions of the regression models and the results of partial correlations between dependent and independent variables.

The results in Table 3 indicate that the mutual correlation between entrepreneur's answers to respective factor determinants (EO<sub>1</sub> to EO<sub>5</sub>) and entrepreneurial orientation shows a weak correlation. This pertains to determinants EO<sub>21</sub>, EO<sub>22</sub>, EO<sub>23</sub>, EO<sub>33</sub>, and EO<sub>51</sub>. The results of testing criteria using t-tests to determine statistically significant determinants of EO in respective EO factors are as follows: independent variables EO<sub>21</sub>, EO<sub>33</sub>, EO<sub>42</sub> and

 $EO_{51}$  have lower values than the critical area of t-test 1.916 (significance level of 0.05, 1138 degrees of freedom).

# Table 3

| Frieday         | Requestion (Verification (1)                           | The independent variables (Determinants) |  |                  |  |
|-----------------|--|--|--|------------------|--|
| Factor          | Regression equation (Verification tool)                | EO <sub>11</sub>                         | $EO_{12}$  | EO <sub>13</sub> |  |
| FO              | Significance of the estimate coefficient (T - test)    | 0  | 0  | О                |  |
| EO1             | Partial correlation<br>(Coefficient of Correlation)    | МС                                       | МС   | МС               |  |
| Factor          | <b>B</b> agnaggion aquation (Varification tool)        | The indepen                              | dent variables (L  | eterminants)     |  |
| rucior          | Regression equation (Verification 1001)                | $EO_{2l}$                                | $EO_{22}$  | $EO_{23}$        |  |
| EO <sub>2</sub> | Significance of the estimate coefficient (T - test)    | X  | О  | О                |  |
|                 | Partial correlation<br>(Coefficient of Correlation)    | LC                                       | LC   | LC               |  |
| <b>F</b> (      | Regression equation (Verification tool)                | The independent variables (Determinants) |  |                  |  |
| Factor          |  | EO <sub>31</sub>                         | $EO_{32}$  | EO33             |  |
| 50              | Significance of the estimate coefficient (T - test)    | 0  | О  | Х                |  |
| EO <sub>3</sub> | Partial correlation<br>(Coefficient of Correlation)    | MC                                       | МС   | LC               |  |
| <b>P</b> (      |  | The indepen                              | eterminants)   |                  |  |
| Factor          | Regression equation (Verification tool)                | $EO_{41}$                                | EO12   EO12   O   MC   ent variables (Deter   EO22   O   LC   ent variables (Deter   EO32   O   MC   ent variables (Deter   EO42   O   MC   ent variables (Deter   EO42   X   MC   ent variables (Deter   EO52   O   MC   ent variables (Deter   EO52   O   MC | $EO_{43}$        |  |
| EO              | Significance of the estimate coefficient<br>(T - test) | 0  | Х  | О                |  |
| $EO_4$          | Partial correlation<br>(Coefficient of Correlation)    | МС                                       | МС   | SC               |  |
| <b>P</b> (      | Regression equation (Verification tool)                | The independent variables (Determinants) |  |                  |  |
| Factor          |  | EO <sub>51</sub>                         | $EO_{52}$  | EO <sub>53</sub> |  |
| EO <sub>5</sub> | Significance of the estimate coefficient (T - test)    | X  | 0  | 0                |  |
|                 | Partial correlation<br>(Coefficient of Correlation)    | LC                                       | МС   | MC               |  |

Verification of the significance of estimated coefficients and partial correlation

Notes: X – assumption not confirmed; O – assumption confirmed; LC – low correlation R <0.2; 0.4>; MC – mean correlation R <0.4; 0.6>; SC – strong correlation R <0.6; and more>. Source: own processing.

The above results indicate that the following are statistically insignificant factors that do not effect entrepreneurial orientation: Enterprise's risk strategy (EO<sub>21</sub>), Creating an entrepreneurial environment within the scope of the enterprise (EO<sub>33</sub>), Aggressive activities towards competition (EO<sub>42</sub>), Reputation for being an autonomous enterprise (EO<sub>51</sub>).

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# Table 4

|                 |   | ē   |                            |  |                      |                                |  |
|-----------------|---|---|----------------------------|--|----------------------|--------------------------------|--|
| Factor          | The regression models<br>(Multiple linear regression<br>function)                     | Characteristics of the regression models          |                            |  |                      |                                |  |
|                 |   | Coefficient of<br>Determination (R <sup>2</sup> ) | Adjusted<br>R <sup>2</sup> | Multiple<br>correlation<br>coefficient | F-ratio<br>(p-value) | Multico-<br>linearity<br>(VIF) |  |
| $EO_1$          | $EO = 0.4765 + 0.1056 \times EO_{11} + 0.1288 \times EO_{12} + 0.1394 \times EO_{13}$ | 0.54221   | 0.53995                    | 0.73635                                | 0.000                | < 3.000                        |  |
| EO <sub>2</sub> | $EO = 0.6162 + 0.0478 \times EO_{22} + 0.1711 \times EO_{23}$                         | 0.36175   | 0.36006                    | 0.60146                                | 0.000                | Ν                              |  |
| EO3             | $EO = 0.3501 + 0.1328 \times EO_{31} + 0.2189 \times EO_{32}$                         | 0.41031   | 0.40874                    | 0.64055                                | 0.000                | Ν                              |  |
| EO4             | $EO = 0.6812 + 0.0883 \times EO_{41} + 0.1304 \times 0.EO_{43}$                       | 0.34176   | 0.34008                    | 0.58460                                | 0.0020               | Ν                              |  |
| EO <sub>5</sub> | $EO = 0.3927 + 0.0832 \times EO_{52} + 0.1706 \times EO_{53}$                         | 0.43449   | 0.42768                    | 0.65915                                | 0.0000               | N                              |  |

Characteristics of regression models

Notes: EO – entrepreneurial orientation; N – Multicollinearity is not in the regression model. Source: own processing

Based on the results of the regression analysis (Table 4), the following partial conclusions can be made: Multiple linear regression models are statistically significant, as the final p-value of F-ratio (Analysis of variance method) in each of the regression models in the table above is lower than the significance level of 0.05. The values of the estimated regression model parameters are not negatively affected by multicollinearity because the results of the variation inflation factor are lower than 5.

Regression model (EO<sub>1</sub>) with a linear regression function explains 54.2% of the total variability of an entrepreneur's entrepreneurial orientation. Regression model (EO<sub>2</sub>) with a linear regression function explains 36.17% of the total variability of an entrepreneur's entrepreneurial orientation. Regression model (EO<sub>3</sub>) with a linear regression function explains 41.03% of the total variability of an entrepreneurial orientation. Regression model (EO<sub>4</sub>) with a linear regression function explains 34.17% of the total variability of an entrepreneurial orientation. Regression model (EO<sub>4</sub>) with a linear regression function explains 34.17% of the total variability of an entrepreneurial orientation. Regression model (EO<sub>5</sub>) with a linear regression function explains 43.40% of the total variability of an entrepreneur's entrepreneury's entrepreneur's entrepreneur's entrepren

The most significant EO factors are: in the Innovativeness construct, it is the factor of Financial investment in the development of new methods and technologies (EO<sub>13</sub> = 0.1394). In the risk-taking construct, it is Conducting risky projects (EO<sub>23</sub> = 0.1711). In the Proactivity construct, it is the factor of Initiative on the target market (PO<sub>32</sub> = 0.2189). In the Competitive aggressiveness construct, it is the factor of Activities performed towards competition (PO<sub>43</sub>= 0.1304), and in the Autonomy construct, it is the factor of Support of

employees' initiative in search and execution of entrepreneurial opportunities ( $PO_{53} = 0,1706$ ).

The results of the research confirmed the validity of H1. The results of the research confirmed that all factors within the Innovativeness construct are statistically significant and positively affect EO.

H2 was partially confirmed. It was determined that the enterprise's Risk strategy factor does not affect the EO.

H3 was partially confirmed, as it was determined that the factor of Creating entrepreneurial environment within the scope of the enterprise does not affect the EO.

H4 was partially confirmed, as it was determined that the Aggressive activities towards competition factor does not affect the EO.

H4 was partially confirmed, as it was determined that the Reputation for being an autonomous enterprise factor does not affect the EO.

### 4. Discussion

It was determined in this research that all EO constructs are important for increasing an enterprise's performance and maintaining its position on the market. It was determined that the most important factors within respective constructs are: Investing finances into the development of new methods and technologies, willingness to invest in risky projects, initiative on the target market, activities performed towards competition, and support of employees' initiative in search and execution of entrepreneurial opportunities.

These results correspond with the views of Brockman et al. (2012), Boso et al., (2013), Anderson and Eshima (2013), and Rahman et al. (2016).

A country's innovative activities are important for its future economic growth. According to Roszko-Wójtowicz and Bialek (2016), the Summary Innovation Index quantification indicator places Czech Republic as Nr. 14 within the European Union.

According to Czarniewski (2016), innovation is an important issue for many enterprises. Innovation causes the enterprise to be distinguished and attractive to customers. Consequently, innovation generates revenue and profit. The author argues that Polish SMEs' have opportunities to gain external financial resources in order to finance their innovative activities, e.g. in form of grants from the European Union; however, these are not used to the full extent. Vojtovič (2016) offers interesting conclusions in this matter: He claims that the results of his analysis and research indicate signs of an inefficient use of financial support from the Structural Funds, which is often directed to solve diverse acute economic problems. However, these funds do not increase their competitiveness.

In research by Kozubíková et al. (2016), 41% of entrepreneurs have agreed with the statement that their company has a reputation of an innovator. The authors found that there were statistically significant differences in the overall structure of the answers of university-educated entrepreneurs in comparison with other entrepreneurs, in the structure

of responses by micro-enterprises in relation to other companies. Highly educated entrepreneurs often in comparison with other entrepreneurs were stating that their company had a reputation of an innovator. SMEs in comparison with the micro-companies were responding more with affirmative answers. Authors claim that 62% of entrepreneurs agreed with the statement that in their companies, they regularly develop new products and services. Only 37.95% of respondents have approvingly responded that they were investing a lot of money into the development of new methods and technologies.

Results of research by Ključnikov et al. (2016) showed the fact that entrepreneurs perceive their business strategy as less risky. Only 14% of them have agreed with the statement that their business strategy is risky. There are not statistically significant differences in terms of gender of entrepreneurs and age of companies. The authors found significant differences in terms of entrepreneurs' education and size of the enterprise. It was determined that microenterprises and entrepreneurs with a lower level of education evaluated their strategy as more risky in comparison to larger companies. In this research, only 32% of entrepreneurs agreed with the statement that they are not afraid of investing money into risky projects. There were no statistically significant differences in terms of gender of entrepreneurs, their education, and age of enterprises. However, there are significant differences in terms of the age of enterprises. Those operating less than 10 years declared a higher willingness to invest in risky projects. Authors have found that only 29% of entrepreneurs agreed with the statement that they realized risky projects in order to improve financial performance of their enterprise. There were statistically significant differences in terms of entrepreneurs' gender. On the contrary, there were no statistically significant differences in relation to education, size and age of the enterprise.

According to Gudmundson and Lechner (2014), EO has a positive effect on the company performance with both cost leadership and differentiation strategies. Their results show that innovativeness and autonomy have a positive relationship with product differentiation strategy, whereas risk-taking and competitive aggressiveness have a negative relationship with innovativeness, but no significant relationship was found with proactiveness.

Overall, the research yielded interesting findings about non-aggressive approach towards competition, as the majority of examined enterprises do not view themselves as aggressive towards competition, nor do they conduct deliberate activities against their competitors (Kozubíková et al., 2015a).

According to Lumpkin and Dess (1996), the autonomy level varies based on the enterprise's size, leadership style and type of assets, which results also in lower or higher level of SMEs independence. When assessing autonomy, it is important to take into consideration the following factors: work method, work pace, work processes, planning, work criteria (Clear a Dickson, 2005). In relation to autonomy, Lukeš et al. (2014) revealed results which support findings of Lévesque and Minniti (2006) that as individuals get older, they are discouraged from entrepreneurship due to high risk or satisfaction postponement. Out of the total number of entrepreneurs in Czech Republic, 53,3% are people younger than 35 years, and their share has been increasing since 2006. The increase of entrepreneurial activities within this age group is influences by several factors (decline in employability of college graduates during economic crisis, the influence of Internet, mobile applications, and information and communication technologies in general which the young generation finds

appealing, as it allows to search for opportunities, as well as classes on entrepreneurship which are nowadays offered at colleges and partially also in high schools).

This research (Kozubíková et al., 2016) has shown that the researched entrepreneurs try to act independently, as 65% of them consider their staff appropriately autonomous and 71% support the initiative of their employees.

### Conclusion

The aim of this paper was to define and quantify the significance of EO factors influencing SMEs business orientation.

This research confirmed that in terms of entrepreneurial orientation, all EO factors are significant for the enterprise's growth and maintaining its position on the market. The following factors are considered the most important within respective constructs: Investing finances into the development of new methods and technologies, willingness to invest into risky projects, initiative on the target market, activities performed towards competition, and support of employees' initiative in search and execution of entrepreneurial opportunities. Subsequently, it was discovered that some factors are insignificant for the overall level of EO, e.g. enterprise's risk strategy, creating entrepreneurial environment within the scope of the enterprise, aggressive activities towards competition, and reputation for being an autonomous enterprise.

There are some limitations to this research which determine the relevance of obtained results. The methodology used may involve certain subjective factors that have to be considered when evaluating the results.

Further research will be focused on exact detection of important factors that determine the result of the research, e.g. focus will be put on the question whether risk strategy is not considered important because it has not had a positive effect on the enterprise, or because most small enterprises simply do not perform strategic planning. The plan is to use a similar approach in analyzing the significance of other EO factors.

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